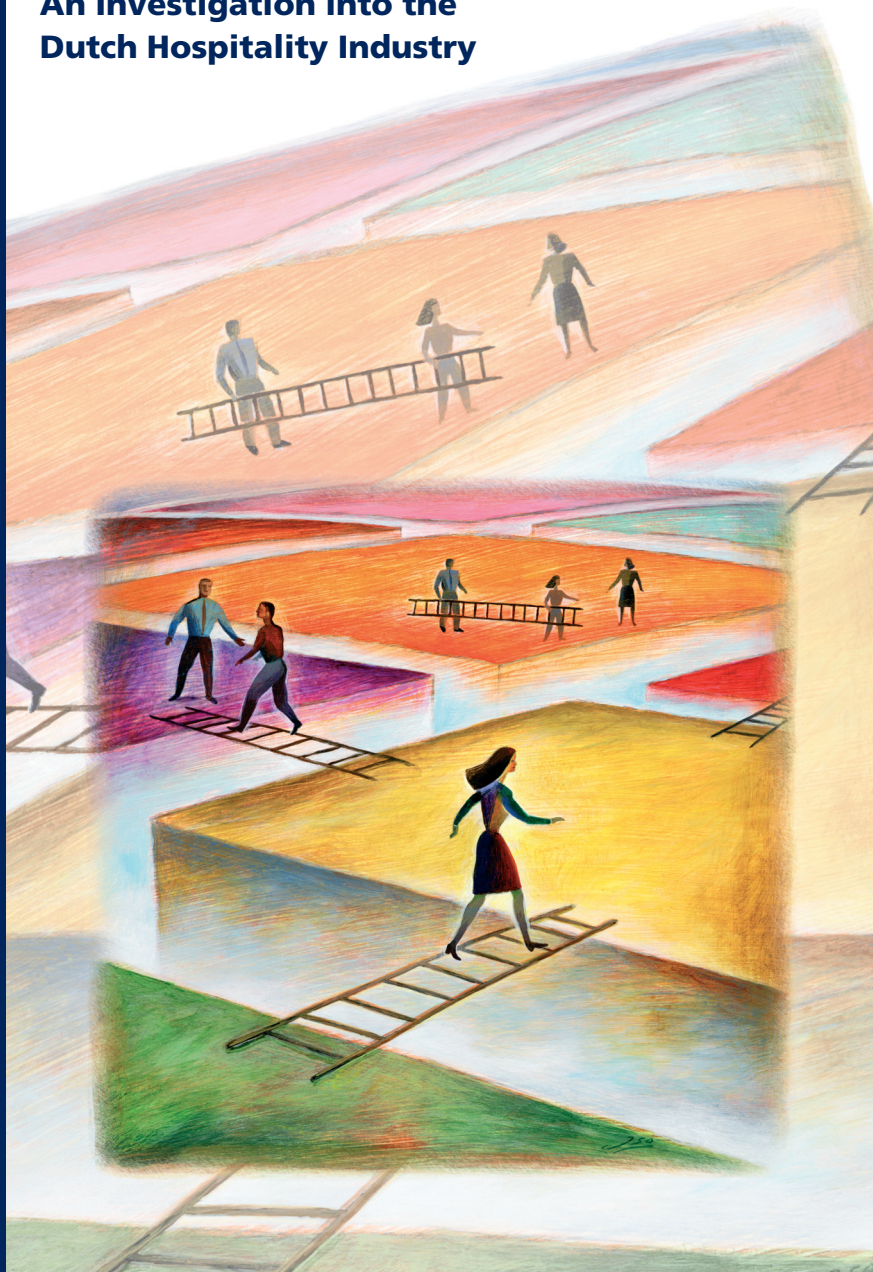ARMÉNIO BISPO

Labour Market Segmentation

An Investigation into the Dutch Hospitality Industry

LABOUR MARKET SEGMENTATION

An investigation into the Dutch hospitality industry

LABOUR MARKET SEGMENTATION
An investigation into the Dutch hospitality industry

Arbeidsmarktsegmentatie
Een verkenning van de Nederlandse horeca

PROEFSCHRIFT

ter verkrijging van de graad van doctor aan de
Erasmus Universiteit Rotterdam
op gezag van de
rector magnificus

Prof.dr. S.W.J. Lamberts

en volgens besluit van het College voor Promoties.

De openbare verdediging zal plaatsvinden op
vrijdag 15 juni 2007 om 16.00 uur

door

Arménio Bispo
geboren te Rotterdam

Promotiecommissie

Promotoren: Prof.dr. G.H.M. Evers
                     Prof.dr. A.R. Thurik

Overige leden: Prof.dr. F.M. Go
                     Prof.dr. J. de Koning
                     Prof.dr. J. Paauwe

To Remco and Robert

Acknowledgements

Writing a thesis usually entails an intellectual journey over several years, to a large extent a solitary expedition, but not to be completed without the help of others. I also owe much gratitude to several people for their support in one way or another.

First of all, I would like to express my gratitude to professors Gerard Evers and Roy Thurik for supervising my Ph.D. research efforts. Their advice and support significantly improved the quality of the book and, throughout the years, always encouraged me to proceed enthusiastically.

I am also greatly indebted to drs. Peter de Wit, former head of the research department of the Dutch Board for the Hospitality and Catering Industry, for providing favourable conditions at work and thereby enabling me to set off for and complete the journey mentioned.

All colleagues at the research department are acknowledged for a pleasant and stimulating working environment. I particularly benefitted from discussions with drs. René Rijnders shaping my thoughts on various topics discussed in this book.

I am very grateful to my parents for their love, care and support throughout my life in many ways. Family background is indeed a significant predictor of one's position in life.

Living in affluence is not a state of being, but a state of mind. The presence of Remco and Robert, my sons, make me feel a wealthy person indeed and, throughout the years, surely contributed to the progress and completion of this book.

Arménio Bispo
Rotterdam, December 2006

Table of Contents

Chapter 5 – Earnings, human capital and working conditions

Chapter 6 – Labour market segmentation and labour flexibility

Chapter 7 – The linear labour-sales model in a dynamic panel data framework

Chapter 8 – Labour market segmentation and labour mobility

CHAPTER 1

A guide to this book

1.1. Introduction

Almost 42,000 establishments, over 310,000 employees and approximately 13 billion Euro annual turnover (including VAT). This, in a nutshell, captures the Dutch hospitality industry in 2005 and the focus of study in this book[1].

The empirical investigations in this book are aimed at increasing the understanding of the functioning of the labour market in the Dutch hospitality industry. The work force is a significant element in this industry – greater than capital – for generating turnover (Dutch Board for the Hospitality and Catering Industry (2006)). Compared also to many other branches of industry in the Netherlands production in the hospitality industry can be described as labour-intensive (Statistics Netherlands (2005)). It is therefore vital to focus attention on the various aspects of labour to work towards a sustainable business operation. There needs to be a constant effort to achieve a healthy balance between quantity and quality. In the context of labour, this balance is effected, for example, by an appropriate earnings structure, flexibility of the work force and labour mobility focused on functionality.

To expand on the various aspects of the labour market statistically and at the same time to have regard to the diversity of labour within the hospitality industry, the theme running throughout this book is the subject of labour market segmentation. The segmentation theory

---

[1] The scope of the term hospitality industry and the classification of business units are not consistent in all statistical data and publications (Statistics Netherlands (1993), Klomp (1996) and the Dutch Board for the Hospitality and Catering Industry (2006)). In this book the hospitality industry is defined as including all establishments that have to be legally registered with the Dutch Board for the Hospitality and Catering Industry ("bedrijfschap Horeca en Catering"). Summarizing, registration is compulsory if the following criteria are met: (a) beverages, snacks, meals and/or lodging are provided, (b) this provision is in establishments designed for consumption on the premises, (c) service is provided and (d) the operation is conducted as an enterprise. In particular, the empirical analyses in this book focus on four business groups: (a) the cafe sector, (b) the fast food sector, (c) the restaurant sector and (d) the hotel sector. These four business groups together are frequently referred to as the traditional hospitality industry, which is distinguishable from the hospitality sector in the widest sense, i.e. including also catered staff restaurants and other providers of accommodation such as camping sites, holiday centres and youth hostels. Catered staff restaurants are also registered with the Board, but this business group is excluded from the empirical investigations in this book, mainly because of data limitations. The delineation of the traditional hospitality industry in this book is to a great extent consistent with the well-known Standard Industrial Classification of Statistics Netherlands (1993), referencing here the SIC business groups 551 (hotels, guesthouses, etc.), 553 (restaurants, cafeterias, etc.) and 554 (cafes, etc.). Hereinafter, in the phrase traditional hospitality industry the adjective is omitted.

assumes the existence of submarkets within the labour market that differ significantly from each other in terms of structure and behaviour. From a policy perspective this is therefore an important theme for further development. Once it becomes possible, for example, to distinguish relatively homogeneous worker groups in the Dutch hospitality industry according to their significantly different thoughts and behaviour regarding mobility, then this finding can offer points of departure for the government to pursue segment-specific labour market policy and within organizations Human Resources Management. The goal should be to retain and develop valued employees in the interests of a sustainable business and industry.

It is the testing of the empirical plausibility of a segmented labour market in the Dutch hospitality industry that forms the common theme throughout this book.

This introductory chapter begins in section 1.2 with an explanation of the structure of the book. Section 1.3 includes a short description of the following chapters and a selection of the empirical findings. Section 1.4 concludes this chapter with a general picture gained from the investigations described in this book.

1.2. Outline of the book

A fundamental difference between the neoclassical economic theory and the labour market segmentation theory is the allocation process of workers on the labour ladder. The neoclassical (human capital) theory does not assume the existence of labour market segments and emphasises differences in the qualities of the labour supply as the allocation basis. The expectation here is that a richer human capital stock leads to greater productivity and thereby to a greater chance of acquiring a better job and higher earnings in particular. In contrast, the labour market segmentation theory predicts the existence of a limited number of clearly distinguishable submarkets on the labour ladder with the more alluring jobs on the upper tier of the spectrum and the less alluring jobs on the lower tier (Ryan (1980) and Taubman and Wachter (1986)). Compared to the lower tier of the labour market the better jobs are characterised, inter alia, by higher earnings, better working conditions, greater job security, more additional (firm specific) training and greater promotional chances (Doeringer and Piore (1970, 1971)). Due to the presence of non-economic barriers, mobility between the labour market segments is assumed to be limited. Here discrimination is regarded as a classic example of such a threshold. In contrast to the neoclassical body of thought the segmentation theory emphasises the demand side of the labour market as the primary determinant of the allocation of labour. Through the method of selection adopted by the employer or more generally by those who control the points of entrance, some individual, or groups of, workers who are able and willing to get a better job position are not given the opportunity to climb the labour ladder. For these 'good' workers, involuntary and persistent confinement to 'bad' jobs may be called an 'ugly' employment situation. In this employment situation of *the good, the bad and the ugly* the allocation of labour is inefficient.

2

To test the empirical plausibility of a segmented labour market (SLM) we can distinguish a number of sequential steps: (1) the construction of labour market segments, (2) the investigation of the validity of the constructed segments and (3) the testing of the segmentation hypothesis. These sequential steps also determine the organization of the present SLM investigation into the Dutch hospitality industry and are explained in more detail below.

Creation of segments – Due to the lack of unambiguous criteria for the drawing of segmentation lines in the labour market, researchers have great liberty in the way they construct labour market segments (Cain (1976), Brouwer, Groot, Muizelaar and Teulings (1992) and Dekker, De Grip and Heijke (1995)). In practice, we see a multitude of classification schemes that can be described either as hypothesis testing or hypothesis generating. For the former types of segmentation methods the labour market segments are determined exogenously and for the latter types endogenously.

In this book we develop two classification procedures for the Dutch hospitality industry. The first is a traditional approach that is hypothesis testing and can be described as the SLM perspective of the employer. The second approach is new to the segmentation literature, partly hypothesis generating and can be regarded as the SLM perspective of the employee.

Conforming to the dual labour market perspective (Doeringer and Piore (1970, 1971)) each hospitality establishment in the Netherlands is regarded as an internal labour market offering both primary and secondary jobs. For both segmentation approaches described in this book, the fortunes of hospitality work are examined at the job level, and not, for example, at the firm or industry level such as in the radical economic theory (Gordon, Edwards and Reich (1973, 1982)), since not all cooks in the restaurant sector or, for example, service staff in the cafe sector share the same fortunes of work. Furthermore, regarding both segmentation methods we follow the predominant preference in the segmentation literature at the outset for a tripartition of the labour market, i.e. a secondary labour market and a primary labour market that is further subdivided into an upper and a lower tier (Dekker, De Grip and Heijke (1995)). Osterman (1975) describes here a "refined version of the dual labor market theory", whilst Graham and Shakow (1990) refer to a "post-dual segmentation theory".

In the more classical segmentation approach the upper tier of the primary labour market in the Dutch hospitality industry is delineated by all workers who have completed initial vocational training at an intermediate or high level. The lower tier of the primary spectrum is defined as all workers who indicate that their job in the hospitality industry is a main job and that they do not have any initial professional qualification at an intermediate or high level. The secondary labour market consists of all workers with a secondary job in the Dutch hospitality industry and not possessing the aforementioned vocational certification. Segmentation of labour according to this line of thought can be largely understood as the desired optimum mix of qualities of the labour supply arising from the efforts of the employer to attain an efficient and effective business. Therefore, this exogenous segmentation of the hospitality labour market into a secondary segment of jobs with *Jedermanns Qualifikation* (Lutz and Sengenberger (1974)) and a primary segment with the

professional market on the upper tier, and the craft market on the lower tier is described as the SLM perspective of the employer, referred to in this book as the *PCS segmentation method*. The addition of the word classical (or traditional) to this segmentation approach is based on Piore (1975), who was the first researcher to further divide the primary labour ladder into two submarkets where access to the upper tier is strongly determined by educational requirements. The delineation of a primary submarket strongly represented by professionally trained employees is a practice also often applied in later empirical SLM investigations (see, for example, Anderson, Butler and Sloan (1987), Van Ophem (1987), Dekker, De Grip and Heijke (1995) and De Wit (1996)).

As a starting point for the SLM perspective of the employee, the secondary labour market is delineated in the same way as for the PCS method, but in drawing the demarcation lines in the primary labour market the assumption is made that employees are themselves the most qualified to evaluate their own job, rather than the employer, the researcher or the policymaker. Applying this method, a separate segmentation line is estimated for each primary employee, the position of which is dependent on the perception of earnings and the characteristics and circumstances of the employee. In developing this partly endogenous segmentation approach, use is made of a technique from the poverty literature and referred to as the *IEQ segmentation method*, by which this book refers to a labour market variant of the Income Evaluation Question (IEQ, introduced in Van Praag (1971); see also Schiepers (1989) and Van Praag, Bispo and Stam (1993)). This IEQ variant is used as the basis for estimating individual income thresholds serving as segmentation lines in the primary labour market. The equal treatment of the secondary labour market in both segmentation approaches is prompted by the observation that this labour market segment employs relatively many school age youngsters and students, whereby it is expected that for many of them their future does not lie in the hospitality industry. Due to mostly temporary secondary jobs the work attitude and job satisfaction of these employees have a different basis than in the primary labour market.

Chapter 3 sets out the operationalising of the labour market segments under both classification procedures, preceded by an overview of various segmentation theories in chapter 2.

Validity of segments – The second step involves making a judgment on the validity of the created labour market segments. Traditionally, the empirical literature here investigates some structural characteristics of the different submarkets (Dekker, De Grip and Heijke (1995)). In the primary labour market, for example, the segmentation theory predicts a relative overrepresentation of men, permanent appointments and large jobs, whereas in the secondary labour market this prediction is for women, temporary appointments and small jobs. We investigate this structure in chapter 3.

This book also investigates the validity of the labour market segments to the relative homogeneity of the worker groups. With the proposed tripartitions of the hospitality labour market as a starting point (PCS and IEQ) it is implicitly assumed that within the relevant submarkets the treads of the labour ladder are so close together that it is not possible to

identify smaller worker groups having significantly different job characteristics. The homogeneity of the PCS and IEQ submarkets is explored in chapter 4.

Testing the segmentation hypothesis – The third step involves the testing of the empirical plausibility of the segmentation hypothesis. Core elements within the segmentation theory often studied in the empirical literature are earnings, labour flexibility and labour mobility. In this book we examine these labour market topics in the case of the Dutch hospitality industry: individual earnings in chapter 5, labour flexibility in chapters 6 and 7 and labour mobility in chapter 8. These chapters also focus specifically on additional training, which is another important concept within the segmentation theory. In chapters 5 and 8, additional training is regarded as a determinant of individual earnings and labour mobility respectively and in chapter 6 as an instrument for stimulating functional labour flexibility. Central to the empirical investigations in these chapters is the question whether different explanatory processes can be distinguished for the relevant aspect of labour, according to the labour market segment with which a worker is identified, and, if so, whether being in accordance with the SLM predictions.

As an example, with regard to the subject of individual earnings the segmentation theory predicts various wage determination processes between the labour market segments, whereby the expectation is voiced that the human capital model (Mincer (1974), Willis (1986) and Card (1999)) in the secondary segment has little if any explanatory power, whereas the wealth of human capital in the primary labour market does influence the earnings position of employees. The segmentation theory also challenges the neoclassical expectation of compensating wage differentials and predicts earnings compensation only for primary employees in respect of specific job discomforts and work-related risks of sickness and injury (Graham and Shakow (1990)). To test these SLM expectations for the Dutch hospitality industry we estimate segment-specific earnings functions in chapter 5 using the PCS segmentation method as a starting point. The IEQ method as a segmentation approach is largely dictated by net earnings and is therefore less suitable methodically from the point of view of selectivity for the estimation of earnings functions (with earnings being the predictand; see also Brouwer, Groot, Muizelaar and Teulings (1992) and Dekker, De Grip and Heijke (1995)). For uniformity and given the limitations of the data, the empirical analyses in chapters 6, 7 and 8 are also restricted to an investigation of the PCS labour market segments.

Going through the three SLM steps we have tried to gain greater understanding of the functioning of the labour market in the Dutch hospitality industry. The various steps can be summarized in tabular form as shown in figure 1.1.

Figure 1.1: Outline of the book

	LABOUR MARKET SEGMENTATION Theory (chapter 2)	
	PCS SEGMENTS	**IEQ SEGMENTS**
STEP 1 Creation of segments	SLM perspective: employer (chapter 3)	SLM perspective: employee (chapter 3)
STEP 2 Validity of segments	Structure (chapter 3) Homogeneity (chapter 4)	Structure (chapter 3) Homogeneity (chapter 4)
STEP 3 Testing the segmentation hypothesis	Earnings (chapter 5) Labour flexibility (chapters 6 and 7) Labour mobility (chapter 8)	

As a starting point for the various empirical investigations we make use of two data sets:

UWV data set (employee level) – The empirical analyses in chapters 3, 4, 5, 6 and 8 rely on the results of the Hospitality Employees Study 2002 (Dutch Board for the Hospitality and Catering Industry (2002b)). These results are in turn based on the response from over 1,100 hospitality employees sampled from the administration of insured workers of the Implementing Body of Social Insurances ("Uitvoeringsorgaan Werknemers Verzekeringen (UWV)"). The data relate to the employment situation and work attitudes in the Dutch hospitality industry in September 2001 and the labour market transitions in the period September 2000 – September 2001 (exclusive of multiple mobility). For a description of the Hospitality Employees Study, also referred to in this book as the UWV data, see chapter 3.

HAS data set (firm level) – As an analysis basis only chapter 7 has a different starting point, relying on the firm data of a panel of hospitality employers participating in the Hospitality Analysis System ("Horeca Analyse Systeem (HAS)") of the Dutch Board for the

Hospitality and Catering Industry. This benchmark system provides for participants detailed analyses of the firm's turnover and cost structure to be compared with the mean performance of comparable HAS employers. HAS participation is free and on voluntary basis. In particular, chapter 7 relies on HAS panel data for the period 1993-2000, differentiated according to the various business groups[2]. For a description of the HAS data, see chapter 7.

1.3. The chapters in a nutshell

This section sets out brief descriptions of the following chapters. For detail, discussion and suggestions for future research, we refer to the relevant chapters. Given the traditional sequential steps for testing the empirical plausibility of the segmentation hypothesis each chapter has a 'logical place within the whole' (see figure 1.1). Despite references to passages from other chapters in the book, an attempt has also been made to write each individual chapter as separately readable. To achieve this goal, some topics or empirical findings dealt with in earlier chapters are sometimes looked at again.

In chapter 2 – we sketch the theoretical background against which the investigations in the subsequent chapters are empirically developed. This discussion is arranged according to three significant lines of thought within the segmentation theory, namely the job competition theory (Thurow and Lucas (1972)), the dual labour market theory (Doeringer and Piore (1970, 1971)) and the radical economic theory (Gordon, Edwards and Reich (1973, 1982)). In discussing these theories, and in particular focussing on their similarities and differences, we also introduce concepts that are important later in the book, such as the concept of the internal labour market and the relationship with primary and secondary labour markets.

To offer an insight into the different ways in which the literature tests for the empirical plausibility of a segmented labour market, this theoretical examination is followed by a presentation of a selection of empirical SLM investigations. This selection is illustrative of the sequential steps in empirical SLM studies as described in section 1.2. Due to the lack of unequivocal segmentation criteria the empirical literature contains a multitude of classification procedures. These segmentation methods can be summarized as follows: (A) segmentation by judgement of the researcher(s) by means of some job/worker characteristics (McNabb and Psacharopoulos (1981) and Platzbeecker and Van het Erve (2005)), (B) segmentation by judgement of the researcher(s) by means of some industrial characteristics (McNabb (1987)) and (C) segmentation by means of a statistical procedure (Dickens and Lang (1985), Anderson, Butler and Sloan (1987) and Graham and Shakow (1990)). Furthermore, it is not unusual to find also a mix of these segmentation approaches (Brouwer, Groot, Muizelaar and Teulings (1992) and Dekker, De Grip and Heijke (1995)). By applying

---

[2] It is not possible to construct the PCS labour market segments using the HAS data. Nevertheless, the representation of employees in the PCS submarkets does have a clear connection to the business group in which the workers are employed (see chapter 3). It might have been perhaps more appropriate to set aside a more neutral position for chapter 7 in figure 1.1, but for ease of reference this is not done.

a statistical procedure for the drawing of segmentation lines in the labour market, certain studies claim objectivity in the demarcation of the segments. Naturally, no single segmentation approach can be regarded as fully objective. Even when applying a statistical procedure to segmentation such as cluster analysis or factor analysis, specific choices form the basis for the empirical investigation. In addition to a classical (exogenous) segmentation approach, in chapter 3 we also propose a partly endogenous identification of relevant labour market segments in the Dutch hospitality industry on the basis of a statistical procedure. This is claimed to be new to the segmentation literature, but, of course, no claim is made for complete objectivity.

In chapter 3 – we construct labour market segments relevant to the Dutch hospitality industry in accordance with the first step in empirical SLM investigations (see figure 1.1). We develop two segmentation approaches, i.e. two different perspectives of the allocation of employees in the primary labour market. The starting point for both approaches is formed by the equally treated demarcation of the secondary labour market. This segment is identified with all employees who answer that their job in the Dutch hospitality industry is a secondary job and also that they have not completed any initial vocational training at an intermediate or high level. This definition is in line with the traditional view of the secondary labour market offering jobs that have minimum job requirements in terms of education and industry experience. For employers, these jobs especially serve the numerical manoeuvrability within the organization. The literature often refers to these jobs as *Jedermanns Qualifikation* (Lutz and Sengenberger (1974)). A typification in Dutch is *Allemansfunctie*.

From the first and more classical division of the primary labour market in the Dutch hospitality industry the upper tier of the labour ladder is delineated by all employees who have completed initial professional training at an intermediate or high level. The lower tier of the primary labour market is identified by all employees who indicate that their job in the hospitality industry is a main job, but without the aforementioned professional certification. With this traditional approach, segmentation of labour can be understood as the desired optimum mix of qualities of the labour supply arising from the effort of the employer to attain an optimum business operation. Stratification of the hospitality labour market into a secondary segment of *Allemansfuncties* and a primary segment where the professional market is considered at the top of the labour ladder and the craft market is on the lower tier, can be regarded as the SLM perspective of the employer and is referred to in this book as the PCS classification method.

The second segmentation technique can be regarded as the SLM perspective of the employee in the primary labour market. This approach focuses strongly on the perception of employees themselves of their position on the labour ladder, applying the philosophy that job wealth or lack of it is not a state of being, but a state of mind. In delineating both primary submarkets in the Dutch hospitality industry use is especially made of a labour market variant of the Income Evaluation Question (IEQ, Van Praag (1971)) from the poverty literature. The primary purpose of the IEQ approach is to create labour market segments with a large degree of internal consistency: primary employees being identified as *job wealthy workers* (upper tier) will also consider themselves as being positioned at the top of

the labour ladder (and vice versa). From an overview of the empirical literature this technique – based on the vox populi – can be regarded as new in the segmentation literature and a 'fraternization' with the poverty literature. In its application, the IEQ segmentation method is a mix of the classificatory schemes A and C in chapter 2.

In September 2001, according to the Hospitality Employees Study, there are a total of 305,500 employees in the Dutch hospitality industry, of which 47 per cent being employed in the secondary labour market. The traditional characterisation of the Dutch hospitality industry as a market for secondary jobs appears to be appropiate. The PCS segmentation method further identifies 51,900 hospitality employees in the professional market and 110,100 employees in the lower tier of the primary labour market. According to the IEQ segmentation method, 19,500 primary employees in the Dutch hospitality industry are estimated to be job wealthy workers. Within the professional market 14 per cent of all employees does experience job wealth.

The IEQ approach produces an internally consistent division of the primary labour market. Of all job wealthy workers in the Dutch hospitality industry, 60 per cent indicates overall job satisfaction. The expectation is that this contentment refers to the valuing of both monetary and non-monetary working conditions. For employees in the lower tier of the IEQ primary labour market this is significantly lower at 49 per cent. By contrast, the PCS segmentation method here does not lead to internal consistency: 48 per cent of all professional employees expresses overall job satisfaction compared to 51 per cent of all craft employees.

Given job characteristics such as net earnings, the type of contract of employment and job size (working hours per week), we can conclude that, in line with the segmentation theory, secondary jobs in the Dutch hospitality industry are less alluring than jobs in the primary labour market segment. It is therefore noticeable that 55 per cent of all secondary employees indicates overall job contentment. It is expected that this satisfaction is largely due to the opportunities for these employees to be able to adequately combine formal employment with tasks in the private sphere. The emphasis on small part-time jobs, flexible working hours, the ability to influence the work roster and a mental workload in line with the minimal job requirements are examples of working conditions in the secondary segment that stimulate this combination of opportunities and possibly contribute to overall job satisfaction. As noted in section 1.2, the work attitudes and job contentment in the secondary labour market are expected to have a different basis than in the primary segment.

The empirical findings in this chapter also show that the characteristics of hospitality jobs and the employees that fill these jobs in the identified labour market segments (IEQ and PCS) are to a considerable extent in harmony with the SLM predictions supporting the empirical validity of the created segments (see figure 1.1).

In chapter 4 – we investigate the relative homogeneity of the PCS and IEQ labour market segments. As with the investigation in chapter 3, we also attempt here to cast light on the validity of the created worker groups (see figure 1.1). With the PCS and IEQ tripartitions of the hospitality labour market as a starting point it is implicitly assumed that the relevant

labour market segments cannot be further divided up into smaller worker groups with significantly different job characteristics. To test this hypothesis of homogeneity we carry out a number of cluster analyses (CA). In particular, we consider three CA configurations, refering to the specific content of the traditional sequential steps in a cluster analysis (Aldenderfer and Blashfield (1984)). In this chapter we opt for the hierarchical agglomerative clustering method. The three configurations differ in the choice of the linkage rule: (a) single linkage, (b) complete linkage and (c) Ward's method (1963). For each of these hierarchical methods we assume the same CA variables, standardisation of the variables into Z-scores and the squared Euclidian distance as a similarity measure.

The cluster analyses reveal that by applying single linkage and Ward's method as the linkage rule and Mojena's stopping rule (1977) to identify a suitable *number* of worker groups (clusters), the PCS and IEQ labour market segments in the Dutch hospitality industry cannot be further subdivided into smaller relatively homogeneous and SLM natural worker groups. In applying complete linkage, homogeneity applies only to the upper tier of the primary labour market. This is true for both segmentation approaches: also with complete linkage the professional market (PCS upper tier) and the group of job wealthy employees (IEQ upper tier) in the Dutch hospitality industry both represent a segment of employees with very similar job characteristics. By contrast, using complete linkage, both the lower tier of the primary labour market (IEQ and PCS) and the equally treated secondary labour market can be further divided into two relatively homogeneous and natural worker groups.

In summary, we can conclude that the validity of the PCS and IEQ labour market segments in terms of relative homogeneity receives significant empirical support from the UWV data and with the aforesaid three CA configurations.

Chapter 5 – The segmentation theory predicts significantly different wage-setting processes between the labour market segments. In particular, we expect that the human capital model has little if any explanatory power in the secondary labour market, whereas the wealth of this capital in the primary labour market does have a positive correlation with the position of employees on the income ladder. The segmentation theory also rejects the neoclassical hypothesis of compensating wage differentials in the labour market (Brown (1980) and Rosen (1986)) and it is only for primary employees that there is an assumption of earnings compensation for being subject to various forms of job discomfort and work-related risks of sickness and injury (Graham and Shakow (1990)). Where human capital and working conditions are expected to be significant predictors of individual earnings in the primary labour market, according to the segmentation theory in the secondary labour market this prediction holds for group characteristics such as gender and ethnicity. To test these SLM expectations for the Dutch hospitality industry and thereby contribute towards answering the central research question in this book, we estimate various earnings functions in chapter 5 using the UWV data and the PCS segmentation method as the starting point. The IEQ segmentation method is largely dictated by individual earnings and is therefore methodically less suitable for estimating earnings equations. As a measurement of the productive knowledge and skills of hospitality employees we choose the net hourly wage as the predictand and for estimation purposes formulated logarithmically in the various earnings

functions. In particular, we estimate four variants of a classical linear regression model (models A–D).

Model A – As a natural starting point we have first estimated traditional earnings functions in line with the human capital approach (Becker (1967), Mincer (1974) and Heckman and Polachek (1974)). Consistent with the general findings in the earnings literature (Willis (1986) and Card (1999)) it is also true of the Dutch hospitality industry that competing Human Capital Earnings Functions (HCEF) have a traditional explanatory power with mostly significant parameter estimates having the expected sign. In particular, the estimation results for model A are illustrative of the significance of the human capital stock of employees for actual earnings in the Dutch hospitality industry. At the industry level the credential effect of a higher educational level in general education is estimated at an average of 4 per cent and employees who have completed at least one training course tuned to the hospitality practice earn an average of 9 per cent more than employees without formal post schooling. These results could possibly indicate an undertraining of additional knowledge and skills specific to the hospitality industry. In line with the SLM expectations, the explanatory power of model A in the secondary labour market is smaller than in the primary labour market. In contrast to both primary submarkets, both the educational level in general education and completed follow-up courses tuned to the hospitality practice have no significant effect on individual earnings in the secondary labour market.

Model B – Job discomforts and work-related risks of sickness and injury are not unknown phenomena in the Dutch hospitality industry (Landelijke Bedrijfscommissie voor het Horecabedrijf (1993) and Stichting Consument en Veiligheid (2003)). To test the hypothesis of compensating wage differentials, model B supplements model A with the inclusion of certain aspects of perceived physical and mental workload as determinants of individual earnings. With the help of principal components analysis the many work attitudes in the Hospitality Employees Study are summarized for regression purposes into a limited number of orthogonal and interpretable factor scores, five of which relate to forms of perceived physical workload and seven as indicators of mental workload. In summary, the estimation results of model B reveal that the SLM prediction that earnings compensation for various discomforts and risks at work mostly benefit primary employees and hardly if at all secondary employees is not empirically validated in the case of the Dutch hospitality industry.

Model C – In addition to the various schooling indicators and working conditions in model B, some group characteristics and other job characteristics too have explanatory power for the wage determination process in the Dutch hospitality industry. The estimation results of model C reveal that employees in permanent appointment earn significantly more than employees with a temporary contract of employment. This finding applies to all submarkets. The size of the job is also a significant determinant of the earnings position: employees in large part-time work earn a significantly higher hourly wage than those with a small part-time job. This applies to secondary and craft employees. Conforming to the SLM predictions, secondary employees born outside the Netherlands earn significantly less than employees born in the Netherlands. Not consistent with the SLM expectations, the gender of

the employee is only a significant determinant of the earnings position in the lower tier of the primary labour market, where men earn on average 5 per cent more than women. In line with the segmentation theory, however, neither group characteristic has explanatory power in the professional market. Given the multivariate setting in model C in which we control for various worker and job characteristics, it is conceivable, but not clear whether and to what degree the perceived lagging behind of the earnings positions in the various submarkets are illustrative of discriminatory effects.

Model D – After correction for various worker and job characteristics the literature on wage determination also frequently identifies separate industry effects and a significant positive effect of the size of the firm. In Berkhout, De Graaf, Heyma and Theeuwes (2001), for example, the Dutch hospitality industry is a clear example of where employees generally receive a lower hourly wage than workers in other branches of industry. In this chapter, the estimation results of model D with additional (to model C) indicator variables for business group and class size of the establishment as predictors of individual earnings in the Dutch hospitality industry reveal that both variables only have explanatory power in the primary labour market. In line with the expectation, it is observed in both primary labour market segments that individual earnings in small establishments (1-9 employees) are significantly lower than in establishments of 10-19 employees.

Although for some aspects the estimation results of the earnings functions are in accordance with the segmentation theory and in general it is not rare for the size and significance of the corresponding parameter estimates between the labour market segments to vary, it is notable that applying various F tests the hypothesis of parameter constancy is not rejected. Using this statistical method we can thus conclude that there are no significantly different wage-setting processes between the PCS worker groups in the Dutch hospitality industry.

In chapter 6 – we examine the issue of flexibility of labour in the Dutch hospitality industry. Labour flexibility can also be regarded as an instrument for employers to stimulate labour productivity. The segmentation theory predicts clearly different flexibility practices for different worker groups (Atkinson (1984, 1988), Huiskamp (1999) and Goudswaard (2003)). In particular, in the employer's search for *the right employee at the right time in the right place,* the SLM expectation is that instruments relating to the promotion of the knowledge and skills of personnel (functional labour flexibility) will be applied relatively more often within the primary labour market, whereas the stimulation of the quantitative manoeuvrability of the organization (numerical labour flexibility) applies proportionately more to the secondary labour market. To test the empirical plausibility of this SLM representation of the flexible firm in the Dutch hospitality industry we apply the UWV data and the PCS segmentation method as the basis for the analysis.

Additional training can be regarded as an instrument (input measure) for stimulating functional labour flexibility. In line with the SLM predictions, workers in the Dutch hospitality industry who are higher up the labour ladder have relatively more often completed follow-up courses tuned to the hospitality practice compared to workers lower down the ladder. In September 2001, 74 per cent of all professional employees also

completed at least one hospitality course. In the lower tier of the primary labour market this is 58 per cent and in the secondary labour market 25 per cent. This order of ranking applies to all specific follow-up courses as identified in the Hospitality Employees Study. In line with these findings, hotel employees have more often completed hospitality courses than workers in the other business groups. For example, 17 per cent of all hotel employees has completed management training. This figure is 5 per cent or less for the other business groups. Similar results are found with regard to internal training. Also in a multivariate setting logit estimates reveal that primary employees have a higher probability of additional training completed than secondary employees.

Also in accordance with the SLM expectations, small part-time jobs, flexible working hours and temporary appointments in the Dutch hospitality industry – being indicators of numerical labour flexibility – are identified above all in the secondary labour market. Within this segment, 87 per cent of all employees has a small part-time job (including variable working hours) and 63 per cent has a temporary appointment. In both primary submarkets these percentages are significantly lower: 14 and 24 per cent in the professional market, respectively, and 18 and 22 per cent in the lower tier of the primary labour market.

Not all manifestations of labour flexibility in the Dutch hospitality industry are in line with the SLM predictions. Overtime is one such example. In the professional market overtime is an average of four hours per week, whereas it is two hours per week in the secondary labour market. In line with these findings two-thirds of all professional employees indicates that they must sometimes work more than ten hours per day. This proportion is half as much in the secondary labour market. Another example is the use of temporary agency workers as an indicator of external flexibility which is proportionately much more intensive in the hotel sector than in the other business groups.

Although conclusions are dependent on the specific measure of flexibility (see also Smulders and Klein Hesselink (1997)), we can conclude that the plausibility of the SLM representation of the flexible firm in the Dutch hospitality industry receives significant empirical support. The same is true of the separate business groups within this industry.

Chapter 7 – Approximately 30 per cent of the total turnover in the Dutch hospitality industry (excluding VAT) consists of personnel costs (Dutch Board for the Hospitality and Catering Industry (2006)). Capital is proportionately a much smaller cost item. Given the labour-intensive character of the service provided (production) in the Dutch hospitality industry it is important for employers to monitor the labour productivity of their employees to help secure a long-term business. An instrument for enabling researchers to study the differences in labour productivity between firms is the linear labour-sales model with variable parameters as developed by Nooteboom (1980, 1982) for the retail trade (see also Thurik (1984) and Frenk, Thurik and Bout (1991)). The applicability of this model for the Dutch hospitality industry is discussed in Klomp (1996). In chapter 7 we fill a lacuna in the literature by taking explicit account of flexibility of labour when estimating the labour-sales model for the various business groups in the Dutch hospitality industry. To this end we introduce dynamics into the labour-sales model by employing 1993-2000 panel data from

individual hospitality firms participating in the Hospitality Analysis System (HAS, see section 1.2). In particular, we assume an autoregressive labour-cost relationship originating from a partial adjustment setting. In order to take account of the unobservable firm specific effects in this panel data framework that determine the way in which in hospitality firms labour is managed, we first estimate three variants of the one-way error component regression model: (1) a labour-sales model assuming fixed effects, (2) a labour-sales model assuming random effects and, given the consequences of dynamics in a basic one-way error component regression model, (3) a labour-sales model following the Arellano and Bond (1991) methodology with the aim of obtaining consistency and efficiency in the parameter estimators (see also Mátyás and Sevestre (1996) and Baltagi (2002)). Assuming one-way error components, individual effects in a panel data labour-sales model are expressed in firm specific labour thresholds (constant term).

A natural extension of the one-way error component regression model is a specification whereby not only is the labour threshold heterogeneous, but the other model parameters (slope coefficients) are also assumed to be firm specific. For the empirical investigation of such an extended labour-sales model we have chosen a nonlinear regression model in which each of the variable model parameters is explicitly modelled as a nonlinear function of relevant firm specific explanatory variables and matching fixed parameters to be estimated: (4) a labour-sales model in the tradition of Klomp-Thurik (Klomp (1996)), expanded through the addition of labour flexibility as a sphere of influence.

Given the starting point of partial adjustment in the various specifications of the labour-sales model, the parameter concerning the influence of labour flexibility refers in particular to the degree to which in any business group the actual change in labour volume is in harmony with its desired change. Greater flexibility means greater ability to adapt. In investigating the degree to which labour flexibility varies over time we distinguish two different research periods: 1993-1997 and 1996-2000.

The estimation results of the nonlinear labour-sales model reveal that we can speak of a *significant* expansion of the Klomp-Thurik model (Klomp (1996)). This finding applies to all business groups in the Dutch hospitality industry and to both research periods. In the period 1993-1997 the numerical labour flexibility in (average) HAS cafes and restaurants is estimated to be higher than in (average) HAS cafeterias and hotels. In the period 1996-2000 this picture is reversed and the flexibility in the fast food sector is estimated to be highest whilst in the cafe sector there is hardly any finding of capacity to adapt. For all business groups in both periods the estimates of the (average) flexibility parameter in the nonlinear labour-sales model are in line with the parameter estimates of an one-way error component regression model assuming random effects, all of which are also significant. By contrast, the Arellano and Bond model only finds significance in this context in (a) the hotel sector in 1993-1997 and (b) in the restaurant sector in 1996-2000, whereby the relevant point estimates are actually more in harmony with the estimates of a fixed effects error component regression model.

The regression results of the nonlinear labour-sales model also show that the labour productivity in a business group generally varies according to the type of services offered, being mostly higher for those services that can be considered to be the central function of business (e.g. the provision of lodging in hotels). A finding specific to the hotel sector that conforms to the expectation is that a higher service level in the period 1996-2000 has a significantly positive effect on labour intensity and thereby puts pressure on the productivity. However, in the period 1993-1997 there is no significance perceived with regard to this luxury aspect.

Given the characteristic production process opportunities to obtain economies of scale in the Dutch hospitality industry are expected to be limited. In line with the findings in Klomp (1996) the estimation results of the extended nonlinear labour-sales model in this chapter also demonstrate that economies of scale with respect to labour productivity only occur in HAS restaurants and hotels.

Chapter 8 – The final chapter of this thesis presents an empirical analysis of individual labour mobility in the Dutch hospitality industry. The segmentation theory predicts that the influence of the wealth of human capital of employees on mobility thought and behaviour in the primary labour market is more systematic than in the secondary segment. To investigate the extent to which the observed mobility practices in the Dutch hospitality industry are dependent on the labour market segment in which a worker is employed and consistent with the SLM predictions, we estimate various segment-specific mobility equations using the UWV data and the PCS segmentation method as a starting point. As important measures of the intention to quit and actual labour mobility of hospitality employees, the following indicators are regarded as regressand: (1) overall job satisfaction, (2) search efforts in the external labour market, (3) voluntary employer mobility of a job in the Dutch hospitality industry to a job in another branch of industry and (4) intraorganizational mobility. Following the empirical literature, we distinguish various worker, job and firm characteristics as predictors. An important addition here to the economic studies into labour mobility in the Netherlands in Hartog, Mekkelholt and Van Ophem (1987), Dekker, De Grip and Heijke (1995), De Graaf and Luijkx (1997) and, for example, De Wolff, Luijkx and Kerkhofs (2002) is the inclusion of different aspects of perceived physical and mental workload as an influencing category. In particular, we apply here the empirical findings of the factor analyses in chapter 5.

For each of the four mobility indicators we can identify partially different explanatory processes between the worker groups. The logit estimates of the various satisfaction models show that in the Dutch hospitality industry we can designate job aspects as antecedents of overall job satisfaction (being a predictor of voluntary employee turnover) that are *unique* to a particular worker group. This applies, for example, to the individual earnings of secondary employees and, in harmony with the dual labour market theory, for the perception of underutilization of the qualification level of employees in the primary labour market. Higher earnings and an appropriate utilization of the qualification level hereby lead to a greater (probability of) job contentment. Secondary jobs in the Dutch hospitality industry are largely filled by students and youngsters of school age and we can expect that for this age group the

financial gains from working in the labour market represent a relatively high value, i.e. being a part of his or her expectation set (Porter and Steers (1973)), and the size of these gains therefore being a significant determinant of satisfaction with the present work.

We can also distinguish determinants of overall job satisfaction that are significant for *different* worker groups, but whereby the estimated effect is clearly different. This applies, for example, to the perceived pressure of work and the opportunities to harmonise working and private spheres. With regard to physical and mental workload the empirical findings reveal that job contentment is especially determined by work aspects that we can assume primarily influence mental workload. All significant parameter estimates here have the expected effect. For all employees in the Dutch hospitality industry their opinion on work organization and direct management has the largest effect on overall job satisfaction followed in the primary labour market by the perceived pressure of work, and in the secondary market by the perception of freedom in work to combine work and private spheres. For young people we expect this combination to relate particularly to the opportunities to effectively combine their temporary jobs in the Dutch hospitality industry with their education.

Working relationships with colleagues and the degree to which work hindrance is experienced through unexpected situations and the absence of colleagues are examples of work aspects that have a more or less *similar* significant effect on job satisfaction for both primary and secondary workers in the Dutch hospitality industry. To conclude, we can also identify job aspects that are not significantly determinant of overall job contentment in *either* worker group, such as the type of contract of employment and the size of the job (as instruments of numerical labour flexibility).

To strive for a long-term business, we can expect that employers will aim for functional immobility, i.e. to retain secondary and primary workers of value to the organization. From this point of view the empirical satisfaction models offer starting points for segment-specific Human Resources Management. Furthermore, in harmony with the concept of a segmented labour market we also perceive opportunities for segment-specific policy in the Dutch hospitality industry in the case of mobility aspirations in the form of search efforts in the external labour market and for each of the two distinguished forms of labour mobility.

However, the empirical findings are not always in line with the SLM predictions. This is true, for example, of the effect of additional hospitality training on search efforts and external mobility. Consistent with the SLM expectations, the influence of additional training on external search efforts in the lower tier of the primary labour market is more systematic than in the secondary labour market segment. Not conforming to the SLM predictions, the search behaviour in the professional market, as in the secondary segment, is not dependent on additional training investments. Conforming to the expectation of greater opportunities for promotion and organizational commitment, employees in the lower tier of the primary labour market who have completed at least one *internal* course are less frequently in search of a job with another employer than workers who have received no internal training. On the other hand, an increase in the number of completed *general* courses geared to the hospitality

16

practice within this primary worker group leads to an increase in intensity of search efforts. This finding conforms to the expectation that general training is coupled with the acquisition of knowledge and skills with a relatively large degree of usability both within the hospitality industry and possibly beyond. Insofar as internal courses are also used to stimulate organizational commitment, this strategy then appears to be particularly effective in the lower tier of the primary labour market.

In line with the estimation results of the search model, an increase in the number of general courses in the lower tier of the primary labour market leads to more voluntary turnover of employees to jobs in another branch of industry and internal courses to less external mobility beyond the hospitality industry. Although we can initially expect a large usability of general hospitality training within the industry, we can also envisage, of course, hospitality-like functions outside the industry where these training investments could be profitable. The same could be true in other sorts of functions in the case of, for example, management training. Also in line with the estimation results of the search model, but not with the SLM expectations, additional training investments have no significant effect on mobility in the professional market.

1.4. Overall conclusion

The empirical investigations in this book reveal that the concept of labour market segmentation is a fruitful approach to the study of structure and behaviour in the Dutch hospitality labour market. After completing the traditional sequential SLM steps (see figure 1.1) we can conclude that the general goal of this thesis has been achieved, i.e. to increase our understanding of the functioning of the labour market in the Dutch hospitality industry.

The validity of the PCS labour market segments (SLM perspective of the employer) is demonstrated by the analyses of structure and homogeneity in chapters 3 and 4. The empirical findings in the next chapters reveal that in the fields of individual earnings, labour flexibility and labour mobility as core elements within the labour market segmentation theory we can identify to a large extent significantly different explanatory processes and practices between the worker groups. This offers starting points for implementing a segment-specific policy; labour market policy by the government and Human Resources Management within organizations. Despite significant differences between the submarkets, however, the empirical findings are not always in favour of the segmentation hypothesis. The question whether the labour market in the Dutch hospitality industry is segmented cannot be unequivocally answered.

The investigations in chapters 3 and 4 also demonstrate that the PCS segmentation method is not unique for the empirical validity of the demarcation lines drawn in the Dutch hospitality industry. The IEQ labour market segments (SLM perspective of the employee) may also be deemed to have a significant degree of validity.

CHAPTER 2

Theories of segmented labour markets and a selective empirical review

2.1. Introduction

Theories of segmented labour markets (SLM) go back a long time into history. We will start our selective review of these theories in the United States near the middle of the previous century. The American society in those days, in particular during the 1960's, can be characterized as one of social reform (see, for example, Cain (1976, p. 1216)), challenging social problems like urban poverty and underemployment of certain minority groups. It was the failure of conventional neoclassical economic theory[3] to deal with these problems that led some economists to believe that alternative hypotheses with respect to the workings of the labour market were in place. One alternative view of these workings relates to a segmented labour market perspective. Advocates of these new economic models are usually referred to as SLM economists.

Widespread poverty, for instance, seemed to persist in the United States despite governmental initiatives like antipoverty programs[4] and education and training programs. According to mainstream human capital theory, investment in human capital, such as schooling and training, would be a cure for poverty. That is, the amount of human capital determines one's productive skills and skill augmentation will increase one's employment opportunities for better jobs and thereby higher earnings. So poverty, in this context, can be seen as a consequence of some individual failure, i.e. a lack of investment in human capital. SLM economists, however, argue that minority groups in the United States, like women and blacks, are trapped in so-called secondary dead-end jobs despite education and training programs. To overcome poverty, policy should therefore be focused at job distribution, not merely at increasing the productive competencies of certain disadvantaged workers.

---

[3] The neoclassical school, in brief, assumes a competitive labour market in which economic agents tend to optimize behaviour. That is, the demand for labour is, at the micro level, determined by the profit-maximizing behaviour of employers (marginal productivity theory) and at the supply side we observe workers maximizing utility by making labour and leisure choices. These choices define the *amount* of labour supply, while investments in human capital determine one's productive competencies, i.e. the *kind and quality* of labour supply and with that one's (hourly) earnings (see, for example, Mayhew and Rosewell (1979, p. 81) and De Galan and Van Miltenburg (1991)).

[4] During the period 1965-1972 real governmental social welfare expenditures to the poor increased almost 70 per cent. Nevertheless, the number of households below the poverty line in this space of time declined minimally (see Plotnick and Skidmore (1975)).

As another example of the failure of the orthodox theory of competitive labour markets, SLM economists often mention the persistence of discrimination against some minority worker groups. These discriminatory practices on the part of employers result in, for instance, sustained underemployment for blacks and women and persistent earnings gaps between blacks and whites and between men and women (with otherwise equal characteristics)[5]. As mentioned above, these workers are largely confined to more or less dead-end jobs with no job perspective.

Sustained (urban) poverty, the persistent skewness of the personal income distribution, the continuing discrimination of certain minority groups, structural unemployment and other related issues have led in the sixties of the previous century to the development of a comprehensive body of new[6] SLM theories, challenging the orthodox views of the workings of the labour market.

In the following sections we briefly discuss some characteristics of three strongly related SLM theories: the job competition theory (section 2.2), the dual labour market theory (section 2.3) and the radical economic theory (section 2.4). Section 2.5 ends this chapter with a review of some previous empirical SLM investigations.

---

[5] In a study of the Boston labour market in the 1960's Doeringer and Piore (1970) come to the conclusion that many blacks seem to have made some job progress relative to whites, especially in larger companies; "…as one walks through local plants one does indeed find blacks in jobs where even five years ago they would never have been seen (p. 338)". But the authors also argue that much of the job advancement in the sixties was the result of adjustment to a labour market that has tightened considerably since 1964. Therefore, many of the gains in black occupational status will disappear as soon as unemployment rises. Also important, according to the authors, is the notion that the occupational structure is in fact in a continual state of change. At the high end of the occupational spectrum new and higher status jobs will continually originate from changes in technology and market demand. These new and highly desirable jobs are traditionally open for white workers, leaving the older and less desirable jobs vacant for black workers. Therefore, cross-sectional data can show black employees making substantial progress in some occupations, while in fact the long-run labour market position of blacks relative to whites does not change.

[6] Already in the 19th century some authors, like, for example, Mill (1848), Cairnes (1874) and Marshall (1890), argued that free competition for all possible occupations is not the reality of labour markets. Cairnes (1874), for instance, identified four what he called *non-competing industrial groups* (p. 73) based on socio-economic classes…"What we find, in effect, is, not a whole population competing indiscriminately for all occupations, but a series of industrial layers, superposed on one another, within each of which the various candidates for employment possess a real and effective power of selection, while those occupying the several strata are, for all purposes of effective competition, practically isolated from each other (p. 72)". The identified groups are ordered according to the degree of skill generally demanded for: (1) the (nearly) unskilled workers (e.g. agricultural labourers), (2) skilled workers of the secondary order (e.g. carpenters), (3) workers with skills of a higher order (e.g. watchmakers) and (4) the learned professions (e.g. scientists). Though no strict boundaries exist workers are, because of skill gaps, generally confined to a limited range of occupations and mobility between the groups is therefore limited.

2.2. The job competition theory

Usually associated with the job competition theory are the economists Thurow and Lucas (see, for example, Thurow (1972) and Thurow and Lucas (1972)). At the supply side this theory assumes the presence of queues in the labour market. Workers are given a "number of preference" according to their expected potential productivity. The most preferred workers are selected from the "waiting-room" first for the "better jobs" in the internal labour market. The human capital stock of workers has little direct influence in determining the occupational structure. The number and type of jobs are determined by technology. Human capital is used more as a screening device in hiring decisions, that is as a proxy for the flexibility, trainability, reliability, motivation and other desirable traits of workers (see also De Grip (1985, p. 335)). In other words, the amount of human capital mainly determines one's position in the job queue and has "only a weak direct relationship with productivity and earnings" (Mayhew and Rosewell (1979, p. 81)). Contrary to the wage competition theory in which "...people [are] looking for jobs", in the job competition model "...there are jobs looking for people – for 'suitable' people" (Thurow (1972, p. 68))[7]. At the demand side wages are more or less rigid, largely determined by the custom and administrative rules of the internal labour market (see section 2.3). So, relative to the more econometrically oriented marginal analyses of the neoclassical school the competitive aspects in the job competition theory – in particular with respect to the internal labour market – are of minor importance. Generally, preferred workers crossing to the internal segment of the labour market are primarily hired for a career, not for a particular job position. Remuneration within the internal labour market is regarded to be mainly affected by substantial post-schooling (career training) leading to vertical mobility within the organization (promotion).

2.3. The dual labour market theory

In the SLM literature the economists Doeringer and Piore are usually mentioned as the pioneers of the dual labour market theory (see, for example, Doeringer and Piore (1970, 1971) and Piore (1975)).

---

[7] According to Thurow (1972), "In a labor market based on job competition, the function of education is not to confer skill and therefore increased productivity and higher wages on the worker; it is rather to certify his 'trainability' and to confer upon him a certain status by virtue of this certification. Jobs and higher incomes are then distributed on the basis of this certified status" (p. 68). … and … "Thus the labor market is primarily a market, not for matching the demands for and supplies of different job skills, but for matching trainable individuals with training ladders. *Because most skills are acquired on the job, it is the demand for job skills which creates the supply of job skills.* The operative problem in a job competition economy is to pick and train workers to generate the desired productivity with the least investment in training costs. For new workers and for entry-level jobs, it is the 'background characteristics' of the workers that form the basis of selection. Those workers whose backgrounds promise the lowest training costs will be hired" (p. 72).

Their theoretical framework is in fact a continuation of the first steps taken by Dunlop and Kerr (Dunlop (1957) and Kerr (1954)) towards a theory of internal and external labour markets. Kerr (1954), for example, identified what he called the institutionalization of labour markets. That is, in an increasing number of labour markets their boundaries are set more precisely by institutional rules. These rules generally refer to the actions of the community of workers, the actions of the community of employers and the actions of government[8] and are spelled out in, for instance, management manuals or collective bargaining contracts or can even refer to an unwritten set of rules (customary law).

In institutional – also called internal – labour markets, the occupational structure, wage determination, job content, opportunities for job specific training, entrance into them, the allocation of labour within them and exit from them are largely determined by bureaucratic rules. The internal labour market has limited ports of entry connecting it with the external market. Admittance to the internal market is reserved only to certain individuals with the desirable traits (see section 2.2) and those who control the points of entrance have substantial influence on the job distribution process and thereby largely determine the employment opportunities of certain groups of workers and the distribution of welfare in society[9].

Closely related to the theory of internal and external labour markets is the distinction between a primary and a secondary labour market. According to Doeringer and Piore (1970, p. 324) the labour market consists of two segments:

> "The primary market offers jobs which possess several of the following traits: high wages, good working conditions, employment stability and job security, equity and due process in the administration of work rules, and chances for advancement. The other, or secondary sector, has jobs which, relative to those in the primary sector, are decidedly less attractive. They tend to involve low wages, poor working conditions, considerable variability in employment, harsh and often arbitrary discipline, and little opportunity to advance."

Below we discuss the concept of the internal labour market in somewhat more detail, state its particulars, its major causes and consequences (see also De Grip (1985)) and describe its relation to primary and secondary jobs.

---

[8] Generally, also the preferences of individual workers and employers are important in setting the boundaries of the labour market. For example, some worker groups commanding strong individual skills may take advantage of their key position in the organization, by which the management is faced with 'bilateral negotiations' likely to end in high transaction costs (see, for example, Williamson, Wachter and Harris (1975)). In the presence of an institutional market these individual conditions are of minor importance. For example, high transaction costs can be avoided by way of linking wages not to workers, but to the different job positions within the organization. When job rights, for example, are secured by institutional rules, free mobility choices by individual workers often no longer exists. "Reduction of insecurity also brings reduction of independence" (Kerr (1954), p. 104) or stated otherwise "the more secure are the "ins", the greater is the penalty for being an "out"" (p. 105).

[9] So, "for society to remain free and open, many ports of entry should exist and the immigration barriers should not hold outside the able *and* the willing" (Kerr (1954), p. 103).

Theories of segmented labour markets and a selective empirical review

With reference to Dunlop (1966), Doeringer and Piore (1971, pp. 1-2) define the internal labour market as:

> "…an administrative unit, such as a manufacturing plant, within which the pricing and allocation of labor is governed by a set of administrative rules and procedures..[and] is to be distinguished from the external labor market of conventional economic theory where pricing, allocating, and training decisions are controlled directly by economic variables."

As mentioned above, both markets, internal and external, are interconnected at certain job positions, the so-called ports of entry (or entry jobs). Workers in the external market compete directly with each other for those jobs at the gate and not with workers already inside the internal market. Because of the institutional rules with regard to the allocation and pricing of labour (e.g. internal promotion ladders, training opportunities, internal wage structure) the internal workforce enjoys certain rights and privileges not available to the outsiders. Furthermore, the absence of direct competition with the outsiders means that employment in the internal labour market is more secured than beyond the boundary. Job stability is one of the main features of the internal labour market. Because of the more favourable conditions in the internal market relative to the outside world internal workers are also more motivated to increase their human capital and reduce external mobility.

As with the labour market as a whole, also *the* internal labour market does not exist. In some studies the establishment, or part of it, is considered to be the internal labour market, while in other analyses this market spans more than one plant[10]. That is, the firm, as the sum of all related establishments, or even a whole industry (see the radical economic theory) is regarded as the domain of the internal labour market. Glebbeek (1993, p. 44) argues that internal labour markets are like the black holes in astronomy: "Theory states that they are among us, but no one knows exactly how they look like.".

Doeringer and Piore ((1971), pp. 13-27) identify three major causes for the promotion of internal labour markets: enterprise-specific skills, on-the-job training and custom. All jobs enclose a set of skills, some of which can be characterized as enterprise-specific[11], while

---

[10] Promotion to a higher job position corresponding with a transition to another establishment of the corporation serves as an example.

[11] As related to on-the-job training Becker (1962) introduced the difference between general and (firm) specific training. "Perfectly general training would be equally useful in many firms and marginal products would rise by the same extent in all of them (p.13)". Since in a competitive world the return from this kind of training is minimal, employers are generally not willing to pay for general training. General training is provided only, because employees themselves, for the expected returns in the future, usually accept to bear these costs. On the other hand, "completely specific training can be defined as training that has no effect on the productivity of trainees that would be useful in in other firms" (p. 17). In this case the employer is more willing to invest in training, while a rational employee, for the limited utility outside the firm, is not. In practice, however, an accurate distinction between both types of additional training can not be made. Therefore, it is expected that employers are likely to pay a large part of the direct training costs for additional training labeled both generic and specific (see also Dekker, De Grip and Heijke (1995)).

other are more or less general, i.e. equally useful in other firms, like, for instance, the ability to read and to communicate[12]. Generally, more skill specificity will mean higher training costs borne by the employer and as a consequence the higher the inclination to stabilize employment and reduce worker turnover. In addition to training costs, also other labour costs, like recruitment and screening, will be positively related to the degree of skill specificity. As opposed to training in a formal educational institution, on-the-job training can be characterized as being informal, e.g. learning by observing other, more experienced colleagues. On-the-job training is a phenomenon strongly related to skill specificity. This specificity, for instance, means that in a certain space of time only a very limited number of workers will learn the particular skill, stimulating on-the-job training by incumbents and discouraging formal instruction. Furthermore, some specific skills can even not be learned by formal training, in which case the only way to grasp them is by learning on the job. Within internal labour markets, in order to uphold a stable work relationship, employers and employees will be encouraged to develop customary work rules, i.e. an unwritten set of rules conditioning the behaviour of the members of the group. Customary law more or less defines what behaviour is right and wrong in the internal market.

The administrative and customary rules establishing the boundaries between the internal and external labour market and determining the allocation and pricing of labour within the internal market seem to be more or less rigid. Customary law, for instance, is not likely to respond to the dynamics of economic forces and is therefore a major source for the rigidity of the internal rules. This rigidity is exactly why, according to the authors, the concept of the internal labour market can be seen as a useful analytical construct. For if the rules of the internal labour market would respond flexible, more directly to developments in the economic environment, then no real distinction would exist between the internal labour market and the competitive market of neoclassical economics.

As mentioned above, according to the dual labour market theory the labour market is divided into a primary and a secondary sector. In accordance with the respective job characteristics, employees in the secondary market, for instance, generally facing low wages, job insecurity, poor working conditions and the like show, relative to workers in the primary segment, less job attachment, and so higher turnover, higher rates of lateness and absenteeism and so on. Instability, of both jobs and workers, is one of the main features of the secondary labour market. To some workers a secondary job indeed literally reflects a secondary job, as in the case of, for instance, young men and women with as yet no family responsibilities. To many of them these temporary jobs provide a mean to earn some money, while still going to school[13]. To this extent, secondary employment may pose no policy problem. It is the extent to which secondary employment becomes "ugly", i.e. persistent and

---

[12] The existence of completely general skills can be questioned…"skills with which we are familiar we often do not recognize as skill" (Marshall (1890, p. 261)).

[13] As will be seen in chapter 3 this employment situation is of frequent occurrence in the Dutch hospitality industry.

involuntary confinement to this market for able and willing workers, that ask for attention by policy makers.

The relation between the concept of the internal labour market and the dual labour market perspective can be amplified as follows. According to Doeringer and Piore (1971, p. 167) the primary labour market consists of a series of internal markets and entry into these "primary" internal markets is determined by the selection of workers with high "numbers of preference" (see job competition theory). However, *also secondary jobs can be present in internal labour markets*. As opposed to the primary market, the authors identify three kinds of employment situations for the secondary segment of the labour market. In the first place, some part of the secondary segment is completely unstructured, and so not belonging to any internal labour market. Unstructured secondary jobs are particularly in view of the conventional competitive theory. Second, some secondary jobs belong to the so-called "secondary" internal labour markets. These jobs have formal internal structures, but are generally inclined to have many entry ports, for which earnings are relatively low, the working conditions relatively poor and so on[14]. Last, there are secondary jobs found to be attached to the internal market, in which the remainder of the jobs belong to the primary segment (see also Rosenberg (1989, p. 366)). In these secondary positions only few, if any, promotion opportunities or transfer rights exist. This perspective of the labour market in which primary employment is associated with internal labour markets and the secondary segment with one of three identified employment situations indicate that Doeringer and Piore do not believe in a strict dichotomy of the labour market. Most important is the notion that the before-mentioned three forces stimulating internal labour markets will be considerably weaker for all three secondary employment situations than they are for primary jobs. For instance, entry into primary employment is often associated with the "waiting-room" principle, with jobs only available to a limited number of workers with the desirable traits. On the other hand, secondary labour appears to be more homogeneous and many employers seem to be "shopping" in a more or less undifferentiated labour pool, where thorough screening is generally of less frequent occurrence.

A dual labour market perspective is, of course, a strong simplification of reality and the primary segment encloses a wide variety of jobs. Therefore, Piore (1975) introduced an upper and a lower tier in the primary labour market. As opposed to the lower tier of the primary segment, the upper tier constitutes jobs with higher remuneration, higher status, more opportunities for promotion and more in- and outflow of workers. The mobility behaviour of workers in the upper tier resembles the patterns in the secondary segment, though the former is usually associated with advancement. In contrast with the lower tier, entry into the upper tier is strongly affected by educational requirements. Also, the upper tier labour market is, relative to the lower end, associated with lack of elaborate work rules, but

---

[14] In illustration, Doeringer and Piore mention, among other things, dishwashing in restaurants as a typical unstructured secondary job. Considering the employment situation in the Netherlands, in which a collective agreement exists, applying to all relevant employees in the hospitality industry, we prefer to range this job under the "secondary" internal labour market.

presence of customary law, and greater variety and room for individual creativity. Following the ideas of Piore, with particular emphasis on the above-mentioned freedom in work, Osterman (1975) also divided the labour force into three segments, in which the upper tier of the primary market, relative to lower tier jobs, consists of workers enjoying a high degree of autonomy and high personal participation in the work process, i.e. a large amount of personal commitment or attachment to the final product or service (Osterman (1975, p. 510); see also section 2.5).

In many aspects the theoretical ideas of Doeringer and Piore, and other dualists, are similar to those of the job competition theorists. Both theories, for instance, emphasize the relative minor importance of human capital characteristics of workers as having explanatory power in the wage-setting process, especially with regard to secondary workers. The job position of workers, in particular the type of jobs to which disadvantaged workers are restricted, according to these theories is very much affected by the employers' demand for labour. That is, the allocation of jobs is primarily demand-determined. As mentioned earlier, supply characteristics of workers such as years of education and work experience are used more as a screening device in determining the position in the "waiting room" and, thereby, the potential for entering the internal market someday. In this context, entering the internal market is also frequently associated with underemployment (also referred to as underutilization). In other words, entry jobs in the internal market are generally occupied by workers commanding qualifications that are higher than is demanded for in the job (see, for example, Dekker, De Grip and Heijke (1995)). When climbing the internal career ladder this underemployment situation will only be a temporary one.

Though many similarities exist, in the literature also a major distinction is mentioned between the dual labour market perspective and the job competition theory to the workings of the labour market. As opposed to the latter perspective (and to the neoclassical approach), dualists call attention for the endogeneity of workers' tastes for work (see, for example, Cain (1976, p. 1222), Taubman and Wachter (1986, pp. 1202-1203) and Rosenberg (1989, p. 365)). In accordance with the corresponding job characteristics, workers in the secondary labour market may develop a life style that is antagonistic to primary employment. We already mentioned secondary workers, relative to workers with primary jobs, having less job attachment, higher rates of absenteeism and so on (Doeringer and Piore (1971, pp. 165-166)). Productive performance is not a major issue to (many of) these workers. Therefore, developments in the attitudes of secondary employees towards work, i.e. in an antiwork direction, may, as times go by, diminish the probability of a possible entrance into a primary job. Because of this endogeneity of workers' tastes for work, in the secondary labour market some 'good' workers (in a 'bad' job) may become 'bad' workers (see also Brouwer et al. (1992, p. 4)). In this context, confinement to the secondary market, i.e. to jobs with 'bad' characteristics, is to be blamed, at least partly, on the workers themselves. So, in this situation the before-mentioned 'ugliness' of confinement to secondary employment can be questioned. Especially for the willing *and* able one (Kerr (1954, p.103)) sustained confinement to 'bad' jobs may be called an 'ugly' employment situation. As times go by this bond with the secondary segment may be referred to as an employment situation of *the good, the bad and the ugly*, in which the allocation of labour is inefficient.

Persistent confinement to the secondary labour market may also be caused by negative employers' selection (Brouwer et al. (1992, p. 3)). That is, employers may, in the selection process, use one-sidedly the applicants' work history as a proxy for the potential productive performance expected. So, if this history is mainly one of unemployment or employment in secondary jobs the probability of selection for primary employment may be(come very) small. Also, 'good' workers in the secondary labour market may simply loose their primary proficiency due to its non-usage and, therefore, as times go by, they may have less chance of entering the primary segment.

Besides the negative feedback of secondary work, the presence of labour market segmentation can become more profound also because of positive feedback in the primary labour market. That is, to uphold and to consolidate their 'privileged' labour market position, primary employees are likely to condition their work behaviour in favour of primary employment by, for instance, accumulating human capital investments on a more permanent basis (see also Vietorisz and Harrison (1973, p. 372)). In the secondary segment stimuli to self-investment in human capital are likely to be of minor importance. Employers also are not expected to be motivated to invest in the skills of their (unstable) secondary employees.

2.4. The radical economic theory

Another group of SLM economists is known as radical economists. Advocates of the radical perspective are, for example, Gordon, Edwards and Reich (1973, 1982) and Bowles and Gintis (1976). Like dualists they assume a dichotomization of the labour market into a primary and a secondary segment. A major distinction between both approaches, however, is the level of segmentation. From a radical point of view there is not only a dual labour market but also a dual product market. More specifically, the segmentation of the labour market can be seen as the result of a historically-rooted dualism in the industrial structure.

According to Gordon, Edwards and Reich (1982), for example, in the United States three major historical transformations of labour can be identified. First, the period of initial proletarianization of labour (1820-1870) was accompanied by the rise and later predominance of *wage* workers and the strong development of capitalist production in industry (e.g. manufacturing, mining and construction). Though a wage workforce emerged, during this space of time the labour process remained relatively untransformed, i.e. employers were as yet not able to increase the labour productivity of workers. To increase the industrial output, above all, more employees were needed. Next, declining profitability between 1870 and 1900, mainly due to raising labour costs relative to workers' output, stimulated employers to homogenize the labour process. During this period of the homogenization of labour (1870-1930) mechanization strongly increased the capital-labour ratio in manufacturing. Industrial workers were confronted with more and more capital equipment and jobs in the labour process were reduced to "a common, semiskilled

operative/labor denominator" (p. 235). Specific skills became of lesser importance. Workers were facing more or less the same working conditions and sharing the same interests they became increasingly unified in their opposition against employers' practices. Therefore, to increase the control over the workforce, in particular large corporations introduced bureaucratic rules, leading, for example, to a strong increase in the number of administrative personnel relative to production workers. However, industrial unionism was spreading and workers' relative bargaining power seemed to improve between 1930-1950. This situation demanded for new structures of labour management by employers. This time period is referred to as the exploration of the segmentation phase. After 1950, in order to control the product market, mainly large corporations disposed of unstable production processes, and to increase the control over workers, labour was divided by creating an internal labour market structure. This resulted in a dual industry structure, with on the one hand relatively large-scaled and stable 'core' firms and, on the other, relatively small 'peripheral' employers with unstable production processes. In comparison with the core industry, peripheral employers did not make major investments in technology and, therefore, their production process remained relatively labour intensive and the labour productivity kept down.

So, in radical economic theory firm size is of major importance in identifying the size and composition of the primary and secondary segment of the labour market (see also Oi (1990) and Dekker, De Grip and Heijke (1995)). The primary labour market is especially associated with the bigger (larger scaled) firms, in which, with use of capital intensive technology, the occupational structure is sufficiently comprehensive to create an internal labour market structure (see also De Grip (1985, p. 336)). That is, bureaucratic control over workers, like using entry jobs to mark the barrier between 'the in- and the outside', explicit lines for promotion and pricing of labour, is most likely to be found in the core sector of society. On the other hand, the secondary segment of the labour market is particularly linked with smaller sized firms using labour intensive and unstandardized production techniques and have unstable product (or service) demand.

From the above discussion some major differences between the dual and radical labour market perspective can be noted. The first observation concerns the cause of labour market stratification. From a radical point of view segmentation of work is created by employers mainly to increase control over workers, i.e. a strategy to divide-and-conquer (see also Vietorisz and Harrison (1973, p. 375)), while dualists argue this segmentation being caused in order to maximize entrepreneurial profitability. A second major difference between both approaches refers to, as noted above, the level of segmentation. In radical economic theory, dualism in the industrial structure results, on the one hand, in bigger firms offering primary jobs and, on the other, in smaller firms with all the secondary jobs. That is, a dual labour market is the result of and corresponds with a dual product market. Dualists, however, define segmentation of work at the job level, not at the firm or industry level. So, from a dual labour market perspective a particular establishment may employ primary as well as secondary jobs at the same time. This latter view, we like to think, being more consistent with reality. We prefer an analysis in which the fortunes of work (of comparable workers) are analysed at the *job* level.

2.5. Some previous empirical SLM investigations

A major weakness of the SLM theory often pointed out is that no sound theoretical basis exists as to which criteria to be used in setting the demarcation lines into the labour market (see, for example, Cain (1976), Brouwer et al. (1992) and Dekker, De Grip and Heijke (1995)). For example, the pioneers of dual labour market theory, Doeringer and Piore (1970, 1971), define, as outlined in section 2.3, job characteristics in the secondary labour market relative to those in the primary segment in a more or less narrative way. Worded differently, a sharp boundary between primary and secondary jobs is not believed to be the reality of the structure of the labour market. Many jobs appear to be positioned somewhere in between and as a consequence testing for a dichotomy or tripartition in the labour market is very hard. There is rather a continuum of job clusters.

In exploratory expeditions, the SLM literature reveals a diversity of ways for subdividing the total labour market into two or more segments. The applied segmentation criteria are, of course, not only influenced by the particular insights of the researcher(s), but also by data limitations[15]. The stratification methods mostly found in empirical SLM investigations can roughly be summed up as follows:

A. Segmentation by judgement of the researcher(s) through some job and/or worker characteristics.
B. Segmentation by judgement of the researcher(s) through some industrial characteristics.
C. Segmentation by means of a statistical procedure (''let the data tell…'').

As will become apparent from the partial review, also a mix of the above-mentioned segmentation criteria is not uncommonly found in empirical analyses.

After the creation of relevant labour market segments, from the SLM theory usually a number of hypotheses are derived in order to test the empirical plausibility of the segmentation proposition. Some of these tests are particularly used to evaluate the validity (or appropriateness) of the created segments. For instance, SLM theory suggests that men, because of their above-average bond with the labour market, are particularly representative of the primary labour market, while the secondary segment is characterized by an overrepresentation of women and youngsters. Significant differences in structural worker and job characteristics between the identified submarkets and in conformity with the SLM predictions, are frequently interpreted as empirical evidence of the validity of the applied demarcation lines.

---

[15] Frequently, a survey is not set up to unearth the necessary data for the particular empirical study under consideration. This observation also applies to the data sets used in this book. In the absence of unambiguous criteria for setting the demarcation lines into the labour market it is, in our view, even impossible to *construct* the ultimate SLM data set.

Thereafter, empirical studies generally test a particular or a limited number of aspects of the segmentation theory, mostly regarding the outcome of segment-specific behaviour of workers or employers. Being key elements of the SLM theory, frequently studied topics include the earnings, flexibility and mobility of workers in the different strata (see chapters 5 to 8). According to SLM theory, for example, distinct wage-setting mechanisms should be found for primary and secondary employees. This hypothesis is usually tested by fitting segment specific earnings functions, using OLS, IV or, for example, a switching regression model. If, according to a LR test or, for instance, a Chow test, the single labour market hypothesis is rejected, then the parameter estimates of the segment-specific earnings functions can be examined to see if they meet SLM predictions. That is, contrary to the primary labour market, it is, for example, expected that no or limited returns to schooling and experience exist in the secondary segment.

The following review illuminates the particulars of some of the empirical contributions made to the research on the existence of a segmented labour market. The overview is ordered according to the year of publication.

Osterman (1975) – (segmentation method: A, country studied: U.S., data: 1967) – To his own judgement, Osterman places all occupations in one of three labour market segments. A secondary market as usually defined in the dual labour market theory of Doeringer and Piore (low wages, instability of employment and the like), plus a primary market consisting of upper tier occupations with, relative to the lower tier primary market, a high degree of autonomy and high personal participation in the work process.

U.S. data are used from the 1967 Survey of Economic Opportunity. Only urban male workers are included, white and black, who were the head of the family and without health disabilities which impinged upon their work. The sample of 4,606 workers is considered nationally representative.

The upper tier of the primary market counts 5 per cent of all included male workers, the lower tier 90 per cent, and thus, the secondary segment 5 per cent. The structure of the different segments is regarded as predicted by SLM theory. For example, on average, secondary workers earn less, are less well educated, and this segment counts more nonwhites than the other submarkets. The empirical validity of the segmentation hypothesis is also tested by fitting a wage equation for each of the segments. The estimation results suggest that annual earnings are generated in fundamentally different ways in the three submarkets and, therefore, according to the author, support the segmented labour market theory. Also as predicted by theory is the way in which the wage-setting process differs between the segments: education and work experience (approximated by age) have no influence on the annual earnings of secondary workers, while the human capital model holds up very well for the upper tier primary employees.

Dickens and Lang (1985) – (C, U.S., 1980) – According to the authors the empirical validity of different wage-setting mechanisms for primary and secondary workers is by itself not conclusive to reject the human capital theory. If secondary workers are qualified (able)

and willing to enter the primary segment and noneconomic barriers for crossing, like for instance discrimination, are not present, the presence of a secondary sector with no returns to human capital is insignificant. Besides testing for distinct wage-setting mechanisms to be in conformity with the SLM expectations, it is also important, and which is more incompatible with orthodox theory, to test the assumption of rationed primary jobs, i.e. testing for involuntary and persistent confinement to secondary employment. According to Dickens and Lang strong tests are proposed to tackle both hypotheses.

To overcome the major drawbacks of arbitrarily setting the demarcation lines into the labour market the authors propose a switching model (see, for example, Judge et al. (1982) and Maddala (1983)), in which the probability of primary employment and the wage-setting process in both segments are estimated simultaneously. The SLM theory predicts segment specific wage-setting processes, according to which secondary workers, contrary to primary workers, obtain no or limited returns to their human capital stock. Furthermore, the hypothesis of no noneconomic barriers for entering the primary market is tested using a LR test. Under particular assumptions free choice between both segments would imply that the parameters of the explanatory variables in the switching equation equal the difference between the corresponding coefficients in the earnings functions.

For empirical analysis 1980 U.S. data are used from the Panel Study of Income Dynamics. The sample is restricted to men with particular traits, including being the head of the household and having worked more than 1,000 hours in the previous year.

A LR test shows that the labour market is better described by a dual market model than a single labour market model. According to the authors the estimation results strongly support the dual market view. Primary workers enjoy significant returns to human capital, whilst secondary employees are faced with a rather flat earnings profile. The hypothesis of free sector choice is also rejected.

Assuming a dual labour market, approximately 12 per cent of all men in the sample are estimated to be secondary employed. Heads of the household younger than 25 years, less educated workers and, for example, nonwhites are more likely to have secondary jobs. From the distribution of predicted probabilities of having a primary job it is concluded that the switching regression model clearly distinguishes between a cluster of primary employees and a group of secondary workers.

Anderson, Butler and Sloan (1987) – (C, U.S., 1974-1980) – In contrast to many other empirical studies a larger set of dependent variables, i.e. job traits, is used to test the existence of a segmented labour market. To distinguish the 'good' from the 'bad' jobs the following job characteristics are used: the wage level and wage profile, general and on-the-job training, job stability, job satisfaction and morbidity. Particular job traits can only be measured by some indirect indicators. Job stability, for instance, is measured by, among other things, job tenure, the probability of a quit or layoff on the last job and union membership. As another example, morbidity is measured by the degree of absenteeism. In all, eight indicators of the above-mentioned job characteristics are computed. Instead of a

preconceived notion of how to use these indices to determine a priori the demarcation lines in the labour market, a cluster analysis is applied.

For testing the empirical validity of some SLM predictions, Anderson, Butler and Sloan analyse 1974-1980 U.S. panel data from the Panel Study of Income Dynamics. The sample is, among other things, limited to heads of households, men and women, participating in the labour force in 1974, and not self-employed. The combination of the various cross-sections results in a sample size of approximately 12,500 persons.

First, the eight indices of job characteristics are regressed on a set of independent variables, including industry and occupation variables, gender, race, age and marital status. To account for panel data characteristics a GLS regression procedure is used. The estimation results indicate some initial support for the dual market theory. Occupations that are traditionally regarded as being 'good' in the SLM literature, indeed seem to show the corresponding traits. Scientists, for example, have relative to the reference group (and other occupations) high wages, more years of schooling (measuring general training), infrequent unemployment and are less likely union members. Analogously, workers in occupations showing less favourable job traits, like labourers, are traditionally viewed as being employed in 'bad' jobs.

Second, a hierarchical cluster analysis (see also chapter 4), with the eight indices of job traits as dependent variables, is employed to investigate the optimal job clustering, and with that the classification of workers into labour market segments. The clustering process, however, does not reveal two (or more) more or less natural worker groups in the labour market. The SLM hypothesis of distinct labour market segments with good and bad jobs is not supported by the data.

McNabb (1987) – (A+B, U.K., 1975) – McNabb investigates two interpretations of the SLM hypothesis, a strict and a weaker version. In the strict or dual version of the segmented labour market hypothesis it is assumed that, in accordance with the radical economic view, a dual labour market is the result of a dual industry structure. With this the distinction between core and periphery industry sectors is empirically drawn using the proportion of female workers in each sector and the proportion of employees not covered by any form of collective bargaining agreement. In this manner, periphery industries are assumed to be female-dominated and not highly-unionized. Strict duality is tested by fitting separate earnings functions for periphery (secondary) and core (primary) groups of workers and comparing the partial effects of human capital endowments on annual earnings in both segments. Other explanatory variables in both earnings functions are the number of weeks worked in a year and indicator variables for the occupation in which the individual is employed.

The weaker interpretation of the SLM hypothesis is tested by estimating an earnings function for each of the seven occupational groups separately: professional, managerial, intermediate non-manual, junior non-manual, skilled manual, semi-skilled manual and unskilled and personal service. Dummy variables for industry affiliation, such as mining,

engineering, construction and transport, in each wage equation are supposed to measure the extent to which industry-specific and structural characteristics affect income mobility within each occupational group of comparable workers, i.e. with more or less similar human capital endowments.

For estimation purposes 1975 U.K. data are used from the General Household Survey. The sample consists of 5,014 male[16] workers with 16-64 years of age.

Approximately 50 per cent of all male workers are computed to be employed in periphery industries. The empirical validity of the strict version of the SLM hypothesis is not supported by the data. That is, periphery workers do not face lesser returns to education and work experience than core employees do. Regarding the weaker version, the estimation results for each occupational group show that industry attachment is more important to the determination of annual earnings of manual workers than it is to non-manual workers. In other words, particularly to manual workers income inequality is not only established by differences in the human capital stock, but also by industry characteristics. However, as appears from a decomposition of the total explained variance in individual earnings for each occupational group, industry affiliation is not an important determinant of annual earnings. At most, for managers only 9 per cent of total variance in earnings is explained by industry attachment. Schooling, work experience and the number of weeks worked have considerable more explanatory power. Different pecuniary fortunes of work of comparable workers are not industry-related.

Van Ophem (1987) – (A+C, Netherlands, 1977) **–** According to the author a detached method is developed to identify primary and secondary jobs in the Dutch labour market. Within this market occupations are classified according to the job level, ranging from very simple labour to purely scientific work. In total seven job level classes are distinguished. For every job level the possibility of being primary or secondary employed is considered. For creating the segments, in addition to the wage level also non pecuniary job characteristics are taken into account. After the identification of primary and secondary jobs, the primary labour market is further divided into an upper and a lower tier. Following Piore, among others, professional and managerial jobs are considered being part of the upper tier and all other being lower tier primary jobs. Next, the SLM theory is tested by estimating multinomial logit models to explain the allocation of workers over the segments by human and non-human capital variables.

For empirical analysis a representative sample of 1,948 workers in the 1977 Dutch labour market is used (Quality of Labour 1977 survey). The data set, concerning workers aged 16 or older and employed for more than 20 hours a week, is abundantly supplied with job quality variables.

---

[16] Core and periphery industry groups can therefore only have been identified with additional "female information in the male data set".

From the data eight standardized job quality variables are constructed and used to compute a critical wage level for every job level class. If the actual wage level exceeds the critical value the job is assigned to the primary segment, otherwise it is considered to be a secondary job. In this manner, a job with poor non pecuniary traits will only be regarded as primary if the actual wage is sufficiently high to compensate for these poor working conditions. The majority of the workers is assigned to the lower tier of the primary market, 8 per cent is an upper tier worker and 37 per cent is considered being secondary employed. Observing some background variables such as worker mobility and firm size, it is concluded that the followed segmentation procedure can generally be considered adequate. However, some observations are not consistent with the SLM predictions. For instance, the SLM proposition that job mobility in the upper tier primary segment will be higher compared to that of the more firm-related lower tier workers is not supported by the data.

From the logit estimation results it is concluded that both human and non-human capital variables affect the allocation of workers over the segments. For instance, women and workers under 26 years of age both have more chance of being secondary employed, whereas this probability diminishes with higher education and job tenure. Therefore, according to the author, the SLM hypothesis with respect to the allocation of workers over the segments can neither be rejected nor not rejected. The findings further show that the allocation of workers over job levels within each segment, including the secondary market, is also affected by human capital variables, especially by the educational level. This result is not supportive of the SLM theory.

Graham and Shakow (1990) – (C, U.S., 1977) – According to various empirical investigations the presence of a wage premium for risk of death on the job is generally accepted (see, for example, McLean, Wendling and Neergaard (1978)). This is not the case for other work-related hazards and disamenities such as the likelihood of occupational illness or injury. In empirical earnings functions the sign and significance of the causal effect of related job quality variables (e.g. perceived stress and physical burden) on wages are generally found to be mixed. According to Graham and Shakow these mixed results are likely to be the result of misspecification. To the authors the empirical relationship between individual earnings and job-related disutilities is better understood under the assumption of a segmented labour market, thereby allowing for segment specific wage-setting processes, than lumping all workers into a single labour market with the likelihood of identifying a spurious wage-risk relationship.

Within the theoretical framework of a dual labour market it is hypothesized that secondary workers generally face fewer work-related amenities and more risk on the job than their primary colleagues (hypothesis 1) and that, in contrast to secondary employees, primary workers are substantially compensated for job-related hazards and other disutilities (hypothesis 2).

A discriminant analysis of a set of personal and job characteristics is applied to classify workers in the 1977 U.S. Quality of Employment Survey (QES) into a primary or secondary labour market segment. Of all workers 56 per cent is regarded as primary employed.

From the answers to a series of questions from the QES-questionnaire, among other things, seventeen job-related risk measures are computed, primarily regarding the workers' perceived exposure to various job disutilities. Using Hotelling's T^2-statistic it is concluded that secondary workers experience significant distinct job-related hazards than their primary colleagues. For the majority of the seventeen risk categories mean secondary risk is greater than mean primary risk. Hypothesis 1 is not rejected.

Next, for both labour market segments the wages of workers are regressed on various predictor variables, including personal characteristics (e.g. gender and race), job traits (e.g. risk measures of job-related discomforts) and industrial characteristics (e.g. firm size). In general, the estimation results are shown to be in accordance with the dual labour market theory. For example, as opposed to the secondary market, earnings of primary workers are substantially positively affected by age and skills. The second hypothesis is also partly supported by the data. That is, in both segments compensation for job-related disamenities is present, but the wage premium is significantly higher for primary workers than it is for workers in the secondary market.

Brouwer, Groot, Muizelaar and Teulings (1992) – (A+C, Netherlands, 1985) – The theory of segmented labour markets in the Netherlands is tested using the model of Dickens and Lang (method I). To identify a dual labour market also an alternative classificatory scheme is used: jobs of long duration are, according to SLM theory, associated with the primary market and jobs of short length with the secondary segment (method II). After the creation of both segments in this manner, again two wage equations are estimated to test the SLM proposition in the same way as with the Dickens and Lang model. That is, the selection of workers for one of both segments and the wage-setting process in both submarkets are again estimated simultaneously. But now, contrary to the Dickens and Lang model, the a priori information as to which segment a particular worker is counted is explicitly used in the selection function. This model is known as the switching regression model and is estimated using FIML.

The Dickens and Lang model is estimated using 1985 data, consisting of a sample of 2,026 workers in the Dutch labour market (OSA-arbeidsaanbodsurvey).

The estimation results of the Dickens and Lang model partially support the SLM theory (method I): in both submarkets more human capital means higher individual earnings, but in the primary market these HC effects are substantially higher than in the secondary segment. The results of the selection function show that the probability to be employed in the primary segment increases with education and work experience. Contrary to SLM theory, the allocation of workers over the segments is affected by productive proficiency. Approximately half of all workers is predicted to have a secondary job position.

With regard to gender mixed results are observed. For men, higher education and more experience both imply more likelihood to have a primary job, while for women this result only holds for the educational level. As work experience increases female workers, possibly

because of career interruption, have less probability of being primary employed. On the basis of the Schwarz-criterion it is concluded that the Dickens and Lang model performs substantially better than the HC-model, with (WLS) or without (OLS) correction for heteroskedasticity in the error term.

The classification of 64 job clusters according to the expected job duration shows no clear demarcation between job clusters with long and short duration. There is rather a continuum of job durations. Job groupings, and with that individual worker groups, are counted as secondary if the expected job length is lower than that of the reference job cluster and if the percentage of workers following enterprise-specific training is relatively low. In this way, nine secondary job clusters are identified (method II), including the cluster cooks and kitchen helps. Approximately 6 per cent of all workers is estimated to be secondary employed.

The calibration of the switching regression model shows that the probability of a primary job is particularly influenced by education and work experience. These human capital variables also have more explanatory power in the earnings function of primary workers than in the secondary segment. Furthermore, men have more chance of getting primary employed than women.

A comparison of the HC-model (no segmentation) with the model of Dickens and Lang (method I) and the switching regression model (method II), using the Leamer-Schwartz criterion, suggests a segmented labour market that is best described by the model of Dickens and Lang. Also a F-test on parameter stability does not reject the hypothesis of a segmented labour market in the Netherlands.

Dekker, De Grip and Heijke (1995) – (A+B, Netherlands, 1992) – Their empirical study centres on differences in additional training, mobility behaviour and the (persistence of) underemployment of workers between three labour market segments: the (firm)internal market, the craft market (craft + professional) and the secondary market with *Jedermanns Qualifikation* (see section 3.3). On the basis of the authors' judgements, segments are created according to some job and establishment characteristics, with special attention to the potential problem of sample selection bias. First, the craft market is identified according to the initial education and the followed profession. Next, for the composition of the internal market the criterion of a minimal firm size of 50 employees is applied. All remaining workers belong to the secondary market.

The study uses a sample of approximately 3,000 workers in the 1992 Dutch labour market (OSA-arbeidsaanbodsurvey).

In 1992, the total Dutch labour market consists of about 25 per cent internal workers, 25 per cent craft workers and 50 per cent secondary workers. The validity of the created segments is tested by evaluating some worker characteristics (e.g. gender, age and education) in the different submarkets. The empirical findings are considered to be more or less in conformity

with the SLM expectations. For example, men are more than averagely positioned in the internal market and youngsters in the secondary market.

Next, from different SLM theories twelve hypotheses are formulated, four relating to additional training, five to job mobility and three to underemployment in the identified submarkets. The participation in additional training declines with workers' age (hypothesis 2) and external job mobility declines with workers' age and job tenure (hypothesis 7) are two examples. The hypotheses are tested using the multivariate logit model to explain additional training and mobility behaviour in the three segments in the period 1990-1992. As to the question whether or not to reject a hypothesis, from these analyses mixed results are observed.

De Wit (1996) – (A+B, Netherlands, 1994) – To our knowledge, De Wit presents the sole empirical SLM investigation having the Dutch hospitality industry as its main focus. Following the line of thought in Dekker, De Grip and Heijke (1995), the Dutch hospitality labour market is divided into (1) a professional market that consists of all workers having completed initial vocational schooling at an intermediate or high level, (2) an internal market with all workers being employed in large firms (50+ employees) and having an intermediate or high job level[17] and (3) a secondary segment accommodating all remaining hospitality employees. According to the author, the labour market position of the intermediate and high job level workers in the smaller firms (<50 employees) is, to a large extent, similar to that of employees in the internal labour market. Therefore, the former worker group is separated from the secondary labour market to form a fourth segment. Together, the internal labour market (50+ employees, intermediate/high job level) and this fourth submarket (<50 employees, intermediate/high job level) are described as the executive segment.

The empirical analysis is based upon a data set containing the responses of approximately 3,600 employers in the Dutch hospitality industry, referencing, inter alia, various personal and job characteristics of their work force (see also Dutch Board for the Hospitality and Catering Industry (2001)). More specifically, the corresponding worker data set refers to the employment situation in September 1994 of approximately 17,000 hospitality employees on the payroll. For empirical analysis a weighting variable is used to stimulate the representativeness of this net workers' sample.

In September 1994, approximately 12 per cent of all hospitality employees is employed in the professional market, 4 per cent in the internal market, 13 per cent in the smaller firms (<50 employees) of the executive segment and 71 per cent in the secondary segment. The relatively small number of workers being employed in the internal labour market is linked with the emphatic smallness in the Dutch hospitality industry. Relative to the other business groups, the professional market is observed to be larger in the restaurant sector (18 per cent) and hotel business (22 per cent), while the secondary segment is considerably sizeable in the

---

[17] As discussed in chapter 3, in this book we place a different interpretation on the concept of the internal labour market in the Dutch hospitality industry.

cafe sector (76 per cent) and in the fast food sector (84 per cent). As in Dekker, De Grip and Heijke (1995), De Wit explores the validity of the created segments in the Dutch hospitality labour market by way of investigating, among other things, the distribution of some worker characteristics in the different submarkets. Conforming to SLM expectations, women are overrepresented in the secondary labour market and men in both the professional market and the executive segment. Also regarding the age and educational distribution much is as expected from SLM theory. Furthermore, investigating certain job characteristics such as job security, function group and job size (contractual working hours per week) the conclusion holds that, in harmony with the dual labour market perspective, primary hospitality employees (the professional and executive segment) are holding the more alluring positions and secondary workers the less attractive jobs.

Subsequently, De Wit argues that with respect to the Dutch hospitality industry firm size, as a segmentation criterion, is less relevant than the workers' vocational qualification. Therefore, De Wit proposes an alternative classificatory scheme based upon the workers' initial vocational schooling and the amount of work experience in the hospitality industry. More specifically, De Wit identifies four submarkets: (1) a professional market as previously defined, (2) a segment accommodating all workers having completed low level initial professional education, (3) a segment employing all workers with at least four years of work experience in the hospitality industry (and without any initial professional education, but possibly having completed additional training) and (4) the secondary labour market holding all remaining employees. This segmentation of the Dutch hospitality labour market classifies workers according to the extent of vocational qualification and is, to a large extent, similar to the PCS classificatory scheme as proposed in chapter 3 of this book. De Wit concludes that, using this alternative stratification approach, investigating the same worker and job characteristics (gender, age, job security, working hours and the like) once again much is conforming to SLM expectations. Therefore, De Wit argues that there is empirical evidence for the presence of a segmented labour market in the Dutch hospitality industry in September 1994, revealing different manpower policies for different groups of workers.

From this selective review and many other[18] empirical SLM investigations it is concluded that in the absence of reliable measures of primary and secondary jobs or other alleged SLM-relevant job clusters (e.g. a primary upper and lower tier segment), researchers have great liberty to delineate labour market segments. To overcome the problem of arbitrarily drawing the dividing lines, some authors have proposed statistical procedures such as discriminant analysis, cluster analysis, factor analysis or switching regression to let the data identify the (probable) cut-off points. Therefore, some authors have argued to have proposed objective procedures for setting the demarcation lines into the labour market. Obviously, no

---

[18] See, for example, Mok (1975), Langley (1978), Mayhew and Rosewell (1979), Harrison and Sum (1979), Buchele (1981), McNabb and Psacharopoulos (1981), Aarts, De Neubourg and Paul (1983), Neuman and Viderman (1986), Osberg, Apostle and Clairmont (1987), Blossfeld and Mayer (1988) and Boston (1990). For a comprehensive SLM review the reader is referred to Taubman and Wachter (1986).

single approach can be regarded as completely detached. The application of cluster analysis, for example, as a statistical instrument to classify workers in a SLM setting involves the choice of (1) relevant variables as the basis for identifying the degree of similarity between workers, (2) a similarity measure to compute the distance, correlation or association between workers, (3) the particular clustering method, (4) a procedure to reveal the likely number of clusters being present in the sample and (5) a validation procedure to investigate the quality of the cluster solution (Aldenderfer and Blashfield (1984), Romesburg (1984) and Everitt (1993); see also chapter 4). In the following chapter we also propose, inter alia, a partly endogenous identification of relevant labour market segments in the case of the Dutch hospitality industry based upon a statistical procedure. This approach is claimed to be new to the segmentation literature, but, of course, no claim is made for complete objectivity.

CHAPTER 3

The LPL methodology as a new approach to labour market segmentation

An investigation into the Dutch hospitality industry

3.1. Introduction

The purpose of this chapter is to discuss the concept of labour market segmentation in an empirical context, the empirical field being the Dutch hospitality industry (see fn. 1). SLM theory predicts, inter alia, the presence of a limited number of distinct submarkets, with at the top of the spectrum the more alluring job groupings and at the bottom the less attractive job positions. Contrary to neoclassical economics, SLM theory stresses the demand side of the labour market as being the primary force in the allocation process of workers, that is employers and their selection mechanisms are decisive for the allocation of labour. In particular, according to SLM theory non-economic barriers to 'primary entrance' exist, by which some (groups of) workers able and willing to get a better job position are not given the opportunity to mount the labour ladder. For these 'good' workers, involuntary and persistent confinement to 'bad' jobs may be called an 'ugly' employment situation, calling for attention by policy makers. In this employment situation of *the good, the bad and the ugly* the allocation of labour is inefficient (see chapter 2).

The starting point in empirical SLM studies is formed by the delineation of relevant labour market segments (see chapter 1, step 1 in figure 1.1). In the absence of univocal segmentation criteria, in the SLM literature a multitude of classificatory schemes is observed. These stratification procedures can be summarized as follows (see section 2.5): a) following the body of thought of dual labour market theory or the job competition theory, segmentation by judgement of the researcher(s) through some job and/or worker characteristics (see, for example, McNabb and Psacharopoulos (1981), Aarts, De Neubourg and Paul (1983) and Platzbeecker and Van het Erve (2005)), b) following the radical economic theory, segmentation by judgement of the researcher(s) through some industrial characteristics (see, for example, McNabb (1987)) and c) responding to the preconceived SLM notions in many empirical investigations, segmentation by means of a statistical procedure (see, for example, Dickens and Lang (1985), Anderson, Butler and Sloan (1987) and Graham and Shakow (1990)). In some empirical SLM studies also a mix of the above-mentioned segmentation criteria is applied (see, for example, Brouwer, Groot, Muizelaar and Teulings (1992), Dekker, De Grip and Heijke (1995) and De Wit (1996)).

In this chapter we propose, to our knowledge, a new approach for setting segmentation lines into the labour market. The followed methodology, in section 3.4, is based upon the subjective income evaluation method frequently used in empirical research on poverty (see, for example, Flik and Van Praag (1991) and Van Praag, Bispo and Stam (1993)) and is, in the present labour market context, placing great emphasis on the *perception of workers* as being the ultimate judge of their job position. More specifically, we use a labour market variant of the Income Evaluation Question (see, for example, Goedhart, Halberstadt, Kapteyn and Van Praag (1977), Schiepers (1989), Van der Sar (1991) and Van Praag, Bispo and Stam (1993)), that is a particular set of attitude questions allowing us to investigate the way in which every employee, in addition to other income levels, evaluates his own earnings. With this approach, in the literature also known as the Leyden Poverty Line (LPL) methodology, we aim at internal consistency, that is the identification of labour market segments being, on average, a reflection of the individually perceived job allure. Generally, workers who according to the LPL methodology are identified as *job wealthy workers* will also regard themselves as being positioned at the top of the labour ladder (and vice versa). Obviously, this vox populi approach to labour market segmentation can be applied to different branches of industry, business groups or other fields of the labour market. In this chapter, as noted, the SLM expedition is to the Dutch hospitality industry. In particular, the LPL methodology is applied to distinguish the upper from the lower tier of the primary hospitality labour market, since the starting point of the empirical analysis is set by the delineation of the secondary segment, pointing to all jobs with *Jedermanns Qualifikation* (Lutz and Sengenberger (1974), see section 3.3).

In section 3.5 also an alternative, more traditional, classification of the primary labour market is proposed, namely a professional market consisting of all hospitality employees with completed initial vocational training at an intermediate or high level of education and a craft market employing all workers stating their job in the hospitality sector being a main job, but not having initial professional training completed (again at an intermediate or high level). Both the professional and craft market can be seen as defining a primary market more or less in the sense of Piore (1975) and Edwards (1975) (and more recent writers), i.e. with a professional upper tier, largely determined by educational requirements, and with the expectation of higher remuneration, higher status, more opportunities for advancement, more job mobility and more freedom in work relative to the lower tier craft market. Contrary to the LPL methodology, this stratification of the hospitality labour market into a secondary, craft and professional market and to a large extent relating to the workers' vocational qualification (De Wit (1996), see also section 2.5) can be typified as the *employers'* perspective of a segmented labour force.

After the assessment of the different labour market segments, according to both SLM perspectives, in section 3.6 fourteen hypotheses are formulated to test the empirical plausibility of some SLM predictions for the case of the Dutch hospitality industry. On the one hand, testing for the validity of the created segments (see chapter 1, step 2 in figure 1.1), these hypotheses refer to SLM expectations regarding structural job and worker characteristics in the different submarkets and, on the other, to expected disparities in labour market behaviour between these segments. In this chapter the hypotheses are investigated by

following the 'bivariate avenue'. In later chapters some SLM hypotheses are tested in a multivariate setting. Section 3.7 ends this chapter with a summary, conclusions and discussion. We lead off with a brief description of the applied data set.

3.2. Some features of the UWV data set

The basis of the present SLM investigation is formed by a representative sample of hospitality employees from the administration of insured workers of the Implementing Body of Social Insurances ("Uitvoeringsorgaan Werknemers Verzekeringen (UWV)").

Currently, every other year the Dutch Board for the Hospitality and Catering Industry ("bedrijfschap Horeca en Catering") holds a large-scale investigation among workers being employed in the traditional hospitality industry, the recreational sector and the catering industry. Generally, the purpose of this *Hospitality Employees Study* is to gain numerical insight into, among other things, the employment structure in the different branches of industry, the work attitudes and the size and nature of individual labour mobility. The SLM investigation in this book mainly uses the findings of the Hospitality Employees Study as it was held in March 2002. With this the attention is focused on the responses of workers who according to the UWV are employed in the traditional hospitality industry, covering the following business groups: the cafe sector, the fast food sector, the restaurant sector and the hotel sector (see also fn. 1)[19].

Stratified random sampling is used to bring about a certain amount of precision in the estimates with respect to some topics being considered fundamental in the employees study. In the sampling process and consequently for the computation of weight variables in the data set particular attention is given to the branch of industry and the region the worker is employed in, the mobility group a worker is being part of and to worker's age and gender. The following mobility groups are distinguished, in which all transitions point to the period September 2000 – September 2001 (hereinafter also referred to as: September '2000-2001'):

- Immobility   : employees remaining with the same hospitality employer.
- Through-flow   : employees switching employers within the hospitality industry.
- Inflow   : employees in September 2001 being employed in the hospitality industry for less than one year.
- Outflow   : employees in September 2000 being employed in the hospitality industry, but not in September 2001.

External labour mobility is observed to be typical of the Dutch hospitality industry (see table 3.1). In September 2001, a majority of all hospitality workers can be described as ´new

---

[19] Besides the consideration of topicality this 2002-study is better equipped for a SLM exploration than the first Hospitality Employees Study held in the spring of 2000. Examples of topics in 2002 being discussed for the first time include individual earnings and additional training, for the present analysis two variables being important for the identification of submarkets and for testing some SLM hypotheses respectively.

blood´ for some employer. For example, 23 per cent of all workers has in the previous year (September '2000-2001') switched employers in the hospitality industry. Furthermore, the characteristic comings and goings in the hospitality sector is illustrated by the considerable number of inflow and outflow workers (on the payroll), in which the corresponding positive difference has ended in a rise in total hospitality employment in the period September '2000-2001'[20].

Table 3.1: Mobility groups in the Hospitality Employees Study, September 2000 – September 2001

Mobility group	*n*	*N*	*%*
Immobility	549	138,800	45.4
Through-flow	277	70,000	22.9
Inflow	345	96,700	31.6
Employment September 2001	**1,171**	**305,500**	**100**
Outflow	267	82,600	28.3

Source	: "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).
Remarks	: N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.
	: The outflow share equals the total number of outflow workers divided by total employment in September 2000.

Further contrast of the empirical findings between the different business groups in the traditional hospitality industry is possible using the perception of workers regarding the business group being employed in. Therefore, in some cases it is observed that a worker takes the view to be employed in the recreational sector or catering industry, while according to the UWV the worker concerned is employed within the boundaries of the traditional hospitality industry. In September 2001 this disparity holds for 7.5 per cent of all UWV hospitality employees (see table 3.2).

Table 3.2: Employees in the Dutch hospitality industry by business group (according to the worker's perception), September 2001

Business group	*n*	*N*	*%*
Cafe sector	243	64,500	21.1
Fast food sector	213	51,500	16.9
Restaurant sector	469	121,700	39.8
Hotel sector	166	44,800	14.7

---

[20] The size of the different mobility groups is based upon two moments of employment measurement, that is September 2000 and September 2001. Of course, taking pictures in a somewhat different time period will show different mobility data, but their typicality is very likely to be unaffected. For a comprehensive SLM exploration of individual labour mobility in the Dutch hospitality industry the reader is referred to chapter 8.

Canteens and catering	35	10,400	4.1
Recreational sector	45	12,600	3.4
Employment September 2001	**1,171**	**305,500**	**100**

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

In operationalising the different labour market segments and testing some SLM hypotheses, as far as possible, all UWV hospitality workers are included. Doing so, in advance, sample selectivity is kept within limits. For example, in Osterman (1975) the empirical SLM investigation is a priori limited to urban male employees being the head of the family and, what´s more, having received the designation ´healthy´ (see section 2.5). The exclusion of certain worker groups beforehand, as in Osterman (1975), for example, female workers, single persons and workers having certain job related health complaints does affect the size and structure of the created segments. A priori dismissal of people from the survey is also observed in, for instance, Dickens and Lang (1985), McNabb (1987) and Van Ophem (1987). In the present SLM exploration sample selectivity is the result of partial non response (see section 3.4.3) and the boundaries of the UWV population. Since the UWV administration of insured workers points to all workers on the payroll, external labour relations, including temporary agency workers and self-employed workers, remain out of perspective.

3.3. The delineation of the secondary segment of the hospitality labour market

The starting point of the present SLM expedition is formed by the delineation of the secondary segment of the Dutch hospitality labour market. In this identification process the dual labour market perspective, in which a particular employer can offer both primary and secondary jobs at the same time, is regarded to be more in accordance with reality than the institutional approach, in which the larger firms accommodate all alluring jobs (´good jobs´) and the smaller sized firms all less attractive job positions (´bad jobs´). In view of the institutional rules in the Dutch hospitality industry (Landelijke Bedrijfscommissie voor het Horecabedrijf (2000)), regarding the concept of the internal labour market we follow Doeringer and Piore (1971), in which the primary labour market is considered as a series of internal labour markets and in which, referring to the employment situation in the Netherlands, secondary jobs in the hospitality industry can be counted as belonging to the ´secondary´ internal labour market (see section 2.3). These secondary jobs are bound by the same institutional rules as job positions on the primary labour ladder.

To a great extent segmentation of labour can be understood from the employers' pursuit of an efficient, effective and sustained business undertaking. Consequently, job offerings in a particular firm will be characterized by varied job requirements. In this framework one can

think of the need for workers having some initial professional qualification and (or) having ample hospitality experience (see also De Wit (1996)). The secondary labour market is generally associated with job positions for which the necessary qualifications are rather simple and hardly involving a training period (see also Dekker, De Grip and Heijke (1995, p. 4)). In Lutz and Sengenberger (1974) this qualification level is referred to as *Jedermanns Qualifikation*; a typification in Dutch is *Allemansfunctie*. To hospitality employers the *Allemansfuncties* are particularly important to employ 'extra helping hands' optimally in time and space stimulating the numerical manoeuvrability of the firm. Notwithstanding the marginal importance of professional and firm specific human capital in the secondary labour market, the corresponding job positions do ask for certain communicative talents, particularly in the front performance, and for having a feeling for the duties to be performed. Therefore, the phrase *Jedermanns Qualifikation* possibly calls for some refining.

Using the findings of the Hospitality Employees Study, the secondary labour market is delineated by hospitality employees stating their job (literally) being a secondary position, without having completed an initial professional education at an intermediate or high level. According to this definition the secondary segment in September 2001 consists of 142,600 hospitality workers on the payroll. This figure amounts to almost half of all UWV employees in the Dutch hospitality industry. Therefore, the usual typification of the hospitality labour market as a market of secondary jobs seems justified[21]. Worker and job characteristics in the secondary segment are observed to be very much in line with the SLM expectations. Young people, females, temporary appointments and flexible working hours are typical of this periphery segment (see section 3.6).

3.4. The primary labour market: workers as the ultimate judge of their job position

3.4.1. The subjective income evaluation method

Living in poverty, in affluence or otherwise is not a state of being, but a state of mind, influenced multi-dimensionally by economic, cultural and social factors (see, for example, Flik and Van Praag (1991) and Van Praag, Bispo and Stam (1993)). Similar to the basic problem encountered in empirical SLM studies also in poverty research univocal criteria to construct segmentation lines – in this context referred to as poverty lines – are not on hand. It is difficult to distinguish poor from non-poor households and in this way to decide which household groups are possibly eligible for public assistance[22].

---

[21] In line with these UWV observations, the empirical findings of a large-scale employment investigation among hospitality *employers* in September 1998 and September 2000 show that over 40 per cent of all current job positions neither requires professional training nor hospitality experience (Dutch Board for the Hospitality and Catering Industry (2001b, p. 141)).

[22] In poverty research the poverty line concept is traditionally operationalised by means of one criterion, i.e. the economic aspect of poverty. Every household of type *k*, for example a single person or two persons living

More specifically, on the labour market, following this subjective setting (see fn. 22) assessing job allure is essentially to the worker holding the particular position, not to the employer, the researcher or the policy maker. Job allure, in this book also denoted as *job wealth*, can be regarded as part of living in affluence. Work attitudes constitute a state of mind, in which both material and non-material working conditions are likely to have an influence. In addition to current net earnings and other pecuniary compensations also other work aspects such as the pace of work, the physical workload, freedom in work, working hours and aggravating circumstances can be assumed to determine the level of well-being a worker enjoys out of the complete job package.

Stratification of the primary labour market based upon the vox populi aims at internal consistency, i.e. the identification of submarkets being, on average, a reflection of the individually perceived job allure. Hospitality workers who according to the corresponding subjective segmentation method are identified as *job wealthy workers* (upper tier) will also, on average, consider themselves as being positioned at the top of the labour ladder (and vice versa).

---

together, with or without children, is identified as poor if current income y_c falls below the corresponding threshold value $y_p(k)$, called the poverty line for that household (non-poor: $y_c \geq y_p(k)$). Obviously, this common identification procedure may end in situations, in which people have sufficient income, but nevertheless experience non-monetary limitations to such an extent that we may speak of lack of welfare. In this framework we may think of, for example, people having a bad health, having psychological problems (e.g. depressed or feelings of solitude) or people experiencing bad non-monetary working conditions. In the absence of unambiguous demarcation criteria, in empirical poverty studies, as in the SLM literature, a multitude of delineation methods is proposed, which can, among other things, be divided into *objective* and *subjective* poverty methods (see, for example, Flik and Van Praag (1991)). In the objective setting the poverty line is imposed 'from above' by, for example, politicians or nutritionists. Well-known examples of the objective poverty line concept include the Decile method, the Half-median method and the Half-mean method. On the other hand, on the basis of their personal income perception, the subjective framework has at its core households deciding themselves on the position of 'their poverty line'. Doing so, it is attempted to bring about, on average, a reflection of the perceived poverty in a society. Examples of the subjective poverty line definition include the Subjective Poverty Line (SPL, introduced in Goedhart et al. (1977)), the Centre for Social Policy Poverty Line (CSP, see, for example, Deleeck, Berghman and Janssens (1984)) and the Leyden Poverty Line (LPL, also introduced in Goedhart et al. (1977)). Both the number of people considered poor and their personal characteristics are influenced by the particular poverty line definition under consideration. Poverty concepts can also be divided into *absolute* and *relative* definitions (see e.g. Hagenaars and Van Praag (1985) and Flik and Van Praag (1991)). In the pure absolute approach, poverty is considered to be (nearly) independent of the general welfare level and the income distribution in society. On the other hand, the pure relative concepts see poverty as a phenomenon of inequality. That is, people are defined poor if their personal welfare falls below the average 'style of living' in the society concerned. Thus, in the absolute way it is possible that nobody is 'called poor', while according to the relative definition poverty is always present, regardless of the general welfare level. The Engel ratio method is a well-known example of the absolute setting and the Decile method of the relative poverty definition. The LPL method can be considered to be halfway both poverty definitions: on the basis of cross-sectional data for eight European countries, including the Netherlands, the elasticity of the LPL poverty line with respect to median income is estimated to be 0.51 (Hagenaars and Van Praag (1985, p. 151)).

Job affluence is thus considered as a state of mind (feeling) determined by the intensity of commanding monetary and non-monetary working conditions. The income level alone is not always sufficient to identify who is poor and who is not (see fn. 22). Nevertheless, in accordance with the traditional approach in empirical poverty studies the splitting up of the primary labour market is operationalised by way of current net income and its perceived sufficiency. More specifically, we use the cardinal utility function of income – well-known in welfare economics and research on poverty – and which can be computed from a particular set of attitude questions, called the *Income Evaluation Question* (IEQ). The original IEQ was introduced in Van Praag (1971) and refers to the evaluation of net household incomes of the particular respondent, being employed or not[23]. To proceed our SLM investigation we did present hospitality workers in the Hospitality Employees Study a labour market variant of the IEQ:

"Taking into consideration my personal circumstances, in my current job position I would consider after-tax earnings per month as:

Very bad	if they would equal about € … …
Bad	if they would equal about € … …
Insufficient	if they would equal about € … …
Sufficient	if they would equal about € … …
Good	if they would equal about € … …
Very good	if they would equal about € … …".

With the responses to the income evaluation question for every hospitality worker i ($i = 1,…,n$) six income levels $\{y_{i1}, y_{i2},…,y_{i6}\}$ are obtained matching the verbal labels {*very bad,...,very good*}. By comparing the IEQ answers with current income y_{ic} it is possible to examine the way in which every worker, in addition to other income levels, does evaluate his own earnings.

Next, the verbal qualifications in the IEQ are transformed into six equidistant points[24] on a continuous [0,1]-scale. This numerical scale is known as the welfare ladder or utility hill (Van Praag (1991, p. 73)). The function $U_i(y)$ for every worker i relating the different income levels, also on a continuous scale, to a specific welfare level (level of well-being) is referred to as the *Individual Welfare Function of Income* (WFI), also called the cardinal welfare function of income (Van Praag (1968, 1971)).

---

[23] For the exact wording of the original IEQ see, for example, Schiepers (1989, p. 27) or Van Praag, Bispo and Stam (1993, p. 14).

[24] This line of thought is based upon the *Equal Quantile Assumption* (EQA), i.e. for different respondents some sequence of verbal labels has about the same psychological meaning. The empirical plausibility of the EQA is observed to have not only bearing on the evaluation of income levels, but also more generally on evaluation in a context-free setting (Van Praag (1991)). In section 3.4.3 we explore the empirical validity of the EQA based upon the results of the Hospitality Employees Study.

Regarding the utility concept generally two dimensions are distinguished, i.e. ordinal and cardinal utility (Van Praag (1991)). The focus on one of both dimensions is dependent on the purpose of the particular study, that is to model behaviour or to evaluate allocation and distribution (Sen (1986)). In the neoclassical theory of the consumer it is assumed that rational consumers are looking for the most preferred set of goods and services or more generally 'the pleasures of life one wants to pursuit'. This quest is taken place within the feasible consumption set, delineated by the budget set and traditionally defined by selling prices and total income available to the consumer (Varian (1984)). Under particular suppositions with respect to consumers' preferences[25] a continuous utility function is proved to exist representing these preferences[26]. To compute the optimal, most preferred, consumer demand only the ordinal character (horizontal dimension) of the utility function is of importance. Stated otherwise, for a description of consumer behaviour it is not necessary to know the utility function, only the indifference curves. In the ordinal way the utility function is not unique[27]. Consequently, it is not possible to compare welfare levels, that is "numerical valuations of well-being" (Van Praag and Flik (1991, p. 314)), between different individuals. For interpersonal welfare comparisons we need uniquely defined cardinal utility functions, implying the measurement of the vertical dimension of the utility concept, i.e. the measurement of the utility hill (Van Praag (1991, p. 73)). The WFI represents such vertical measurement. Furthermore, in the present SLM investigation, hospitality employees have their own frame of reference (e.g. single or married, with or without children) and as such income levels will be evaluated differently: the WFI is personal (indexed by *i*). The WFI is known to be well approximated by a lognormal distribution function (see, for example, Van Praag, Kapteyn and Van Herwaarden (1978)):

---

[25] Well-known assumptions regarding consumers' preferences include completeness, reflexivity, transitivity, strong monotonicity and continuity (Varian (1984)). The primary purpose of these assumptions is to be able to order the set of affordable consumption bundles and to be represented by some continuous utility function.

[26] Similarly, we can picture ourselves calculating workers on the labour market searching for the most preferred *job bundle* consisting of both pecuniary and non-pecuniary working conditions. In this case the set of feasible job bundles C is imagined to be determined by aspects such as the human capital stock, the worker's job history, the available 'job search time and space' and the hiring practices by employers (SLM: some workers having limited freedom in choice). In $C = R_+^2$ we may visualize job bundles $a = (a_1, a_2)$, in which the indifference curves depicture the way in which monetary and non-monetary working conditions are substituted for each other (assuming compensating wage differentials (see, for example, Brown (1980) and Rosen (1986))), but attaining the same welfare level. In the present SLM study the utility concept is used as an instrument to evaluate the current job position, not to describe rational behaviour of workers searching for the optimal job bundle under certain equality constraints. As noted, this is exactly the difference between the normative (cardinal, vertical) and behavioural (ordinal, horizontal) dimension of the utility concept.

[27] Let $U(a)$, $U : R_+^k \to R$ be a utility function bringing order into the consumers' preferences and $\tilde{U} = g(U)$, $\tilde{U} : R \to R$ any strictly increasing function of U. Then, $\tilde{U}$ does represent exactly the same preferences and, given the particular budget set, ending in the same consumer behaviour: $a \succ b \iff U(a) > U(b) \iff \tilde{U}(a) > \tilde{U}(b)$. The Cobb-Douglas utility function $U(a_1, a_2) = a_1^\lambda a_2^{1-\lambda}$ and $\tilde{U} = g(U) = \ln(U)$ constitutes a well-known illustration.

$$U_i(y) = \Lambda(y; \mu_i, \sigma_i^2) = N(\ln(y), \mu_i, \sigma_i^2) \qquad i = 1,\ldots,n \qquad (3.1)$$

where $\Lambda(.)$ and $N(.)$ represent the lognormal and normal distribution function respectively and μ_i and σ_i^2 ($i = 1,\ldots, n$) the corresponding population parameters. These individual parameters can be estimated from the IEQ answers in the following manner (see Van Praag and Flik (1991, p. 315)):

$$\hat{\mu}_i = \frac{1}{6}\sum_{j=1}^{6}\ln(y_{ij}) \quad \text{and} \quad \hat{\sigma}_i^2 = \frac{1}{5}\sum_{j=1}^{6}(\ln(y_{ij}) - \hat{\mu}_i)^2 \qquad i = 1,\ldots,n \qquad (3.2)$$

Under the *Equal Quantile Assumption* (EQA, see fn. 24) also the following holds:

$$U_i(y_{ij}) = N\left(\frac{\ln(y_{ij}) - \mu_i}{\sigma_i}; 0,1\right) = N(u_{ij}; 0,1) = \frac{2j-1}{12} \qquad j = 1,\ldots,6;\ i = 1,\ldots,n \qquad (3.3)$$

For every hospitality worker it is thus possible to construct his or her personal WFI, in which after-tax earnings equal to $\exp(\hat{\mu}_i)$ are evaluated with 0.5 as the level of well-being, that is halfway the utility hill. A rise in $\hat{\mu}_i$ means that a worker is taking the view that more income is needed to remain at the same position on the utility hill. In this context, the welfare parameter $\hat{\mu}_i$ is also known as a *need parameter*. The dispersion in the IEQ answers, estimated by $\hat{\sigma}_i^2$, is usually referred to as the *welfare sensitivity parameter* denoting the degree to which earnings have to rise for mounting the welfare ladder. A higher $\hat{\sigma}_i^2$ indicates more dispersion and with that more probability mass in the end of the personal income distribution, by which comparatively more additional income is needed to reach a higher position on the utility hill.

Figure 3.1 illustrates the empirical WFI for three occupational groups in the kitchen: assistants (production helpers), cooks and chefs (including kitchen managers)[28].

---

[28] For production helpers in the kitchen the average after-tax hourly log-income that is evaluated by a position halfway the utility hill is estimated at $\hat{\mu} = 1.24$ (and $\hat{\sigma} = 0.52$). For cooks and chefs (and kitchen managers) this amounts to $\hat{\mu} = 1.74$ (and $\hat{\sigma} = 0.31$) and $\hat{\mu} = 1.86$ (and $\hat{\sigma} = 0.30$) respectively. Converted to net hourly wages these median income levels correspond to €3.5, €5.7 and €6.5 respectively. From a comparison with the institutional pay scales (Landelijke Bedrijfscommissie voor het Horecabedrijf (2000)) the impression holds that the IEQ answers suffer from a systematic underestimation of the personal income position. The phrasing of the corresponding survey question, in which hospitality workers are asked about *total after-tax earnings in the present job position*, is likely to be one of the causes for this underestimation. Without specification, we expect that some employees will not have included all income components (e.g. holiday pay) when estimating current net earnings and responding to the IEQ. Empirical research by Kapteyn, Kooreman and Willemse (1988, pp. 232-233) does support this expectation. A possible second reason for the likely underestimation is remuneration below institutional levels. Empirical findings from a representative investigation into the acquaintance and compliance with the collective agreement in the Dutch hospitality industry (Dutch Board for the Hospitality and Catering Industry (1996a)) show that 44 per cent of all hospitality employees is taking the view that they are paid

50

Figure 3.1: The empirical WFI for some kitchen worker groups in the Dutch hospitality industry, September 2001
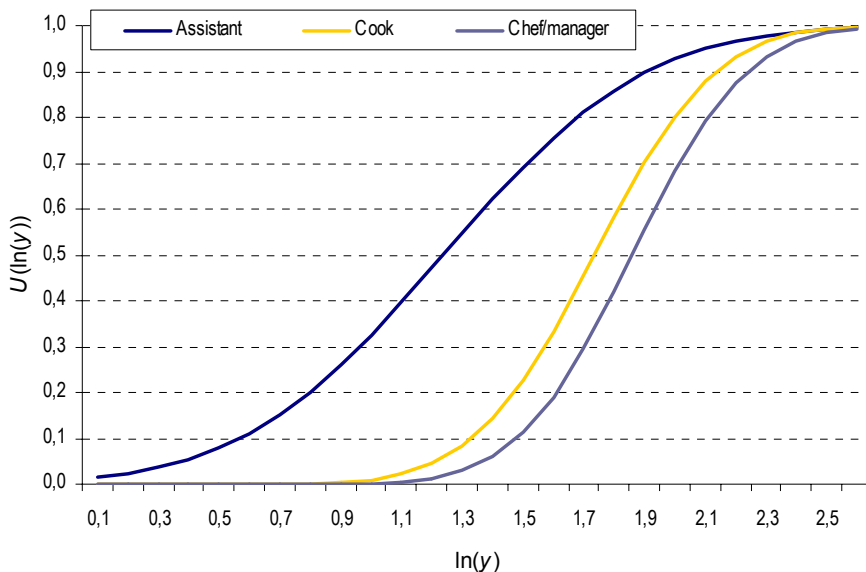
Conforming to expectations we generally observe higher income levels filled in the IEQ for workers positioned higher on the pay scale. This finding is illustrated by, for example, chefs and kitchen managers averagely requiring more after-tax earnings to attain the same welfare level than cooks and, obviously, assistants do. For the latter worker group the empirical WFI is relatively less steep, indicating that, compared to cooks, chefs and managers, given some level of well-being more additional earnings are needed for climbing the utility hill.

As is evident from many empirical poverty studies the variation in $\hat{\mu}_i$ between respondents can largely be explained from differences in income levels and personal/household

---

in accordance with institutional levels. Regarding remuneration above and below the minimum level this view holds for 29 per cent and 3 per cent of all workers respectively. Furthermore, approximately a quarter of all hospitality employees indicates not to know or are not willing to say if net earnings are below, above or equal to collective agreement levels and consequently, it is not possible to indicate exactly how many hospitality workers are paid below institutional entitlements. However, also based upon desk research, remuneration below institutional levels in the Dutch hospitality industry is not believed to be a phenomenon of minor importance.

characteristics (see, for example, Van Praag, Bispo and Stam (1993, p. 200)), in the present SLM exploration that of hospitality employees:

$$\hat{\mu}_i = \alpha + \beta_1 \ln(y_{ci}) + \beta_2 \ln(f\!s_i) + \beta_3 \ln(age_i) + \beta_4 \ln^2(age_i) + \varepsilon_i \quad i = 1,\ldots,n \qquad (3.4)$$

with y_{ci} the after-tax hourly wage of hospitality worker i, $f\!s_i$ family size, age_i worker's age and $\varepsilon \sim N(0, \sigma_\varepsilon^2 I_n)$ a classical error term. Given the assumption of lognormality of the WFI a rise in net earnings will at first be experienced as a situation, in which a higher level of well-being is reached[29]. Habituation will, as times go by, lead to workers adjusting their standards to the new income position. Consequently, the WFI shifts rightwards and so, generally more earnings are needed to reach the same valuation of well-being as before the income rise. In other words, a part of the new procured level of well-being finally ebbs away because of changing standards (and with that changing income evaluation). In the literature the parameter β_1 is known as the *preference drift*. In case $\beta_1 = 0$ a changing income level will not end in adjusted standards at all and the same position on the utility hill is maintained, also as times go by. On the other hand, full adaptation is observed if $\beta_1 = 1$, by which workers are finally descending the utility hill to such an extent that in the new work situation the same level of well-being is experienced as before the income change.

Also other characteristics of the hospitality worker and the corresponding household are expected to be of influence on the income evaluation. A rise in family size, for example, from single to couple or giving birth to a child, will generally end in *rising needs*, by which, on average, more income is needed for not sliding down the utility hill. Also the worker's age is expected to be important to explain needs variations. At an early age people are generally building up a life, usually to go hand in hand with the purchase of comparatively many (durable) consumer goods and services (*rising needs*). This positive relationship between age and the average income evaluation is likely to persist until, at a certain age, satiation is set in, whereupon the needs are expected to fall down. Therefore, in equation (3.4) a parabolic relationship is assumed between worker's age and the average income evaluation. Obviously, workers can be differentiated according to a wider range of characteristics (e.g. according to the educational level and the living region). Consequently, the possibility of adding more explanatory variables to the μ-equation could be considered. However, it is observed that this does not end in a significant improvement of the estimation results (see section 3.4.2). From the theoretical considerations stated above it is thus predicted: $0 \le \beta_1 \le 1$, $\beta_2 > 0$, $\beta_3 > 0$ and $\beta_4 < 0$.

A hospitality worker is now identified as being employed in the upper tier of the primary labour market, that is observed as a job wealthy worker, if current after-tax earnings are evaluated to be equal to or higher than a certain predetermined level of well-being ω on the utility hill – for example ω=65% (given the IEQ verbal labels to be described as *amply sufficient*) or ω=80% (*more than good*). Therefore, the demarcation line for hospitality

---

[29] Obviously, the degree to which the utility hill will be mounted is subject to the 'starting salary', the extent to which this income rises in the new work situation and to the particular shape of the WFI being empirically determined by the estimates of μ and σ^2.

worker i defining the border between the lower and upper tier of the primary segment follows from:

$$U_i(y) = N(\ln(y), \mu_i, \sigma_i^2) = \Phi(\frac{\ln(y) - \mu_i}{\sigma_i}) = \omega \qquad i=1,...,n \qquad (3.5)$$

with $\Phi(.)$ the standard normal distribution function. Substitution of the population regression equation (3.4) into the solution $\ln(y_\omega)$ of equation (3.5) for the entire hospitality industry results in (dropping the subscript i):

$$\ln(y_\omega) = \alpha + \beta_1 \ln(y_c) + \beta_2 \ln(fs) + \beta_3 \ln(age) + \beta_4 \ln^2(age) + \sigma\Phi^{-1}(\omega) \qquad (3.6)$$

Assuming ω to depict the utility threshold by which the upper tier is to be distinguished from the lower reaches of the primary labour market, then workers having a log-income falling below $\ln(y_\omega)$ will generally regard themselves as feeling not wealthy, more specifically not ω-job wealthy (given worker's age and family size), because actual earnings are observed to be lower than the personal threshold value. In the same way, workers will generally experience ω-job wealth if $\ln(y_{ci}) > \ln(y_\omega)$. Therefore, the *job wealth line* y_ω dividing the primary labour market into wealthy and non-wealthy job positions can be estimated from $\ln(y_c) = \ln(y_\omega)$ and the estimation results of the income evaluation equation:

$$\hat{y}_\omega(fs, age) = \exp\left\{\frac{\hat{\alpha} + \hat{\beta}_2 \ln(fs) + \hat{\beta}_3 \ln(age) + \hat{\beta}_4 \ln^2(age) + \overline{\sigma}\Phi^{-1}(\omega)}{1 - \hat{\beta}_1}\right\} \qquad (3.7)$$

In accordance with many empirical poverty studies personal characteristics appear not to have significant explanatory power for the variation of the estimated welfare sensitivity parameter and is therefore treated as an exogenous variable and equated with the average sample value $\overline{\sigma}$.

So, every primary hospitality worker has his own *job wealth line* depending on family size and worker's age. With the subjective income evaluation method workers themselves decide how much earnings have to change when some personal conditions alter in order to retain the same level of well-being. If all primary hospitality workers being single and 25 years of age are considered to make up the reference worker group, then the *equivalence factors* for other primary employees aged 25, but with *fs* family members can be computed as follows:

$$e(fs) = \frac{y_\omega(fs, 25)}{y_\omega(1, 25)} = fs^{\frac{\beta_2}{1-\beta_1}} \qquad (3.8)$$

These correction factors thus define an *equivalence scale,* particularly a household equivalence scale (Van Praag, Bispo and Stam (1993, p.17)), by which it is possible to make

the after-tax earnings of workers with different family size welfare equivalent. Generally, the equivalence scale is dependent on the level of well-being ω. However, in accordance with the traditional approach in the poverty literature we assume the plausibility of the *Independence of the Utility Base* assumption (Lewbel (1989)). The general (*fs*, *age*)-equivalence scale can be computed from $e(fs, age) = y_\omega(fs, age)/y_\omega(1,25)$. Of course, equivalence factors of any dimension can be constructed, depending on the range of predictor variables in the μ-equation.

3.4.2. Estimation results and job wealthy workers

In this section we describe, in brief, the empirical findings of the income evaluation method based upon the UWV sample of hospitality employees.

Stepwise regression on the average income evaluation $\hat{\mu}_i$ reveals that current individual earnings and worker's age are the two most important explanatory variables[30]. The inclusion of other predictor variables, including the level of education and living region, does not end in significant additional explanatory power. Also, the estimated family size parameter in equation (3.4) is not significant[31]. The estimated μ-equation runs as follows (with t-values within brackets)[32]:

---

[30] For the purpose of estimating the μ-equation, among other things, workers are selected who have completely and 'correctly' filled in the IEQ. For example, workers are excluded who, notwithstanding 'IEQ completion', do not meet the theoretical expectation $\{y_{i1} \leq y_{i2} \leq \ldots \leq y_{i6}\}$. Workers are also excluded from this particular analysis if they do not show any variation in the IEQ-answers $(\hat{\sigma}_i^2 = 0)$. Furthermore, a closer examination of current earnings compared to institutional expectations (Landelijke Bedrijfscommissie voor het Horecabedrijf (2000)) has also ended in leaving the response of some workers aside.

[31] The standard error of the estimated family size parameter is generally influenced by three factors, that is the extent of multicollinearity between the explanatory variables in equation (3.4), the estimated variance of the residuals and the variation in the *fs* variable (Maddala (1992, p. 272)). A regression of family size on current earnings and worker's age – inclusive of a quadratic term – shows a coefficient of determination of about 0.3. Therefore, the observed multicollinearity is by itself not definite in explaining the relatively wide confidence interval for the family size population parameter. This width is also influenced by the limited variation in the *fs* variable. If equation (3.4) is estimated exclusive of both age parameters, then the family size parameter is estimated to be significant:

$$\hat{\mu} = \underset{(2.41)}{0.526} + \underset{(28.18)}{0.910}\ln(y_c) + \underset{(2.79)}{0.065}\ln(fs) \qquad \overline{R}^2 = 0.76; \hat{\sigma}_\varepsilon = 0.17$$

The size of the estimated *fs* parameter matches that in earlier empirical poverty studies (see, for example, Van Praag, Bispo and Stam (1993, p. 198)) implying a household equivalence scale with exponent 0.72 (see equation (3.8)). Although the statistical performance is observed to be of comparable strength we have a slight preference for the empirical findings of regression equation (3.9).

[32] As for notation, it is, in view of equation (3.4), possibly better to circumflex μ in equation (3.9) not once, but twice. However, for reasons of readability this is left undone.

$$\hat{\mu} = -3.970 + \underset{(26.11)}{0.829} \ln(y_c) + \underset{(4.20)}{2.793} \ln(age) - \underset{(-3.81)}{0.376} \ln^2(age) \qquad \overline{R}^2 = 0.81; \hat{\sigma}_\varepsilon = 0.16 \qquad (3.9)$$
$$\underset{(-3.69)}{}$$

The estimated preference drift and age parameters are observed to be significant and having the expected signs. If after-tax earnings rise with, say, 1 per cent, then, on average, hospitality workers will adjust their standards, as times go by, with over 0.8 per cent. Therefore, a relatively large part of the experienced rise in well-being, because of the income rise, finally ebbs away. Furthermore, the saturation point, after which the positive relationship between worker's age and the average income evaluation becomes negative is reached at age 41.

In accordance with equation (3.7) the estimated job wealth lines $\hat{y}_\omega$ - for a given age group – shift rightwards as the welfare threshold is predetermined at a higher level (see table 3.3). For some level of well-being the demarcation lines also illustrate the parabolic link with worker's age. For example, starting from hospitality workers aged '20-24 years', then workers being one age group older generally need 56 per cent more net earnings to achieve the same utility level. For workers aged '40-44 years' this is over twice as much; thereafter the equivalence factors gradually decrease.

Table 3.3: Job wealth lines for primary employees in the Dutch hospitality industry at various welfare levels, September 2001

Age	ω=60%	ω=65%	ω=70%
	x1 Euro	*x1 Euro*	*x1 Euro*
15-19 years	390	490	630
20-24 years	870	1,100	1,400
25-29 years	1,350	1,700	2,170
30-34 years	1,700	2,150	2,740
35-39 years	1,890	2,380	3,030
40-44 years	1,910	2,410	3,080
45-49 years	1,830	2,310	2,950
50+ years	1,510	1,910	2,430

Source   : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks   : The job wealth lines marking the border between the upper and lower tier of the primary labour market are expressed as monthly after-tax earnings.

Obviously, the choice of the threshold value of well-being ω is subjective. Therefore, it seems meaningful to start from a few ω-variants to enlighten the sensitivity of our selections. According to the IEQ a welfare level of ω=75% corresponds to the verbal qualification *good* and therefore, possibly, a critical threshold value of approximately ω=70% or higher to identify job wealthy workers is theoretically the most obvious selection. Selecting ω=70% as the critical value already results in a small sized upper tier of the primary labour market and

applying ω=80% leads up to the Dutch hospitality industry, in September 2001, not having job wealthy workers at all. In the present SLM investigation three ω-variants are employed, that is 60%, 65% and 70%, all being situated between the IEQ verbal labels *sufficient* and *good*.

Table 3.4: Workers in the Dutch hospitality industry by labour market segment and business group at various welfare levels (%), IEQ-method, September 2001

Business group	Secondary workers	Primary zone: ω=60%		Primary zone: ω=65%		Primary zone: ω=70%		Total
%		Low	Up	Low	Up	Low	Up	
Cafe sector	61.3	29.4	9.2	34.5	4.2	37.2	1.7	100
Fast food sector	58.1	29.8	12.0	36.1	5.8	39.5	2.1	100
Restaurant sector	43.2	41.2	15.5	49.0	7.8	54.1	2.7	100
Hotel sector	28.7	51.5	19.8	64.1	7.2	69.5	1.8	100
Total	46.6	39.0	14.3	46.9	6.4	51.1	2.2	100
N	142,600	119,400	43,500	143,400	19,500	156,100	6,800	305,500

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population.

Of course, in the present SLM investigation the composition of the secondary labour market is independent of the critical level of well-being. In September 2001, the secondary segment in the Dutch hospitality industry is observed to be represented by 142,600 employees, i.e. almost half of all UWV employees (see table 3.4). Selecting ω=60%, 14.3 per cent of all hospitality workers is identified as being employed at the top of the IEQ-ladder. At the population level this percentage amounts to 43,500 job wealthy workers. Using ω=65% and ω=70% the share of job wealthy workers is estimated at 6.4 and 2.2 per cent respectively.

Comparatively, the secondary labour market is observed to be largest in the cafe sector and in the fast food industry: in both business groups approximately 60 per cent of all workers has a secondary appointment. On the other hand, the hotel business is typified by relatively many primary employees. In September 2001, over 70 per cent of all hotel employees is observed to be employed in the primary labour market. This classification of hospitality employees by labour market segment and business group is in harmony with the empirical findings in De Wit (1996), investigating the September 1994 employment situation in the Dutch hospitality industry (see section 2.5). At ω=60% approximately 20 per cent of all hotel employees is identified to be a job wealthy worker. In the restaurant sector this amounts to 16 per cent and below average in the cafe sector and in the fast food sector. In the lower tier primary segment a similar order applies. Moving the critical value of well-being upwards to ω=70%, the percentage of hospitality employees being occupied at the top

of the labour ladder decreases, as noted, to about 2 per cent and by which little business group variation is observed. Consequently, using this welfare level approximately 70 per cent of all employees in the hotel business is counted as being positioned in the lower tier primary labour market. In the restaurant sector this lower tier position also holds for a majority of the employees.

As for representation, service and the kitchen are observed to be the two most important departments in the Dutch hospitality industry, scoring 53 and 27 per cent of all employees respectively (see table 3.5). Comparatively, service offers more secondary positions and the kitchen accommodates more primary employees. For occupations in the reception and management the balance also tips relatively in favour of primary positions.

Conforming to expectations, in every department the empirical findings differentiated by occupation are more refined. In the kitchen the primary labour market is well represented by cooks, chefs and kitchen managers, while assistants can particularly be characterized as employees having an *Allemansfunctie*. However, it is observed that the balance practically never dips completely towards one of both submarkets (primary or secondary). For example, the IEQ-method also identifies production helpers to be positioned within the boundaries of the primary labour market, in both tiers amounting to approximately 4 per cent of the corresponding primary worker group. Only with chefs and kitchen managers the positions are never secondary in nature. Saliently however, all chefs and kitchen managers are observed to be employed in the lower tier primary segment. Only broadening the critical level of well-being towards $\omega=60\%$, to be described as *somewhat more than sufficient*, some chefs and kitchen managers are classified as job wealthy workers.

In service the secondary labour market can particularly be associated with the following occupational groups: the cafeteria worker (inclusive of cafe employees), the fast food restaurant worker and the bartender. Comparatively, the latter job position is also observed to be typical of the top of the IEQ primary ladder. Senior service workers and service heads are particularly qualified as primary employees. Again the balance does never completely tip towards a particular segment. Although actual earnings constitute the selection criterion, by which from table 3.5 the overall impression comes up of increasing job allure as one is practising a profession that is ranked higher on the institutional scale, the absolute income level is by itself not sufficient for identification purposes. Only combined with its *perceived sufficiency* the worker´s position on the labour ladder can be determined. Furthermore, we observe a rise in the percentage of job wealthy service workers as the critical level of well-being on the utility hill is set at a higher level. At $\omega=60\%$ over 70 per cent of total employment at the top of the primary labour market is represented by kitchen and service workers. Further mounting the utility hill towards $\omega=65\%$ and $\omega=70\%$ this percentage increases to approximately 80 and 90 per cent respectively. Obviously, this upward tendency at the top of the IEQ primary ladder is at the expense of other departments. For example, at $\omega=65\%$ still 4 per cent of total job wealth in the Dutch hospitality industry is ascribed to receptionists and other positions in this occupational group. However, at $\omega=70\%$ this percentage is narrowed down to zero. In housekeeping this zero setting is already attained at $\omega=65\%$.

Table 3.5: Workers in the Dutch hospitality industry by labour market segment at various welfare levels: department and occupation distribution (%), IEQ-method, September 2001

Department/ occupation	Secondary workers	Primary zone: ω=60%		Primary zone: ω=65%		Primary zone: ω=70%		Total
%		Low	Up	Low	Up	Low	Up	
Kitchen including:	19.3	33.3	33.3	33.3	32.9	33.2	40.0	26.7
- *Assistant*	*11.4*	*4.3*	*4.3*	*4.3*	*4.2*	*4.3*	*4.0*	*7.6*
- *Cook*	*4.4*	*15.6*	*22.7*	*17.2*	*19.4*	*17.3*	*24.0*	*11.3*
- *Chef*	*0.0*	*11.6*	*1.2*	*10.0*	*0.0*	*9.2*	*0.0*	*4.8*
Service including:	67.5	40.3	40.1	39.4	46.6	39.6	52.0	53.0
- *Cafeteria worker*	*34.3*	*17.3*	*15.3*	*16.8*	*15.3*	*16.6*	*20.0*	*25.0*
- *Fast food restaurant worker*	*10.6*	*6.6*	*4.3*	*6.2*	*4.2*	*5.9*	*8.0*	*8.1*
- *Bartender*	*11.2*	*5.0*	*9.2*	*5.3*	*12.5*	*5.7*	*16.0*	*8.5*
- *Senior service worker*	*2.7*	*2.7*	*3.1*	*2.5*	*5.6*	*2.6*	*4.0*	*2.7*
- *Service head*	*1.7*	*5.9*	*4.9*	*5.6*	*5.6*	*5.7*	*4.0*	*3.8*
Reception	1.3	6.3	6.8	6.8	4.1	6.7	0.0	4.1
Housekeeping	7.2	6.4	2.5	6.1	0.0	5.5	0.0	6.2
Management	0.9	9.5	11.7	9.8	12.3	10.2	8.0	5.8
Other departments	3.8	4.3	5.6	4.7	4.1	4.8	0.0	4.2
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source   : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks   : Kitchen = assistant (production helper), (un)qualified cook, (sous) chef, kitchen manager and other kitchen employees; service = cafeteria worker, cafe worker, fast food restaurant worker, bartender, senior service worker (inclusive of roomservice), service head, manager and other service employees; reception = (night) porter, receptionist, reception head, front office manager and other reception employees; housekeeping = dishwasher, cleaning person, chambermaid, head housekeeper, head general service, housekeeping manager and other housekeeping or general service employees; management = administrator, secretary, system manager, head accounting, manager and other management functions.

: Some occupations (or worker groups) in the Hospitality Employees Study are (further) grouped: cook = unqualified and qualified; chef = sous chef, chef and kitchenmanager; cafeteria worker = cafeteria plus cafe worker; service head = service head and manager.

As noted, the selection of the critical welfare level to identify the top of the primary labour market is up to the researcher(s). In this respect, a predetermined threshold value in the proximity of ω=70% theoretically seems most obvious. In view of the empirical SLM findings differentiated by business group, department and occupational group, in the remainder of this chapter we assume ω=65%, by which the upper tier of the primary labour market is operationalized by hospitality workers experiencing actual earnings as *amply sufficient or better*. This stratification of the primary segment is accompanied by a great extent of internal consistency: approximately 60 per cent of all job wealthy workers does acknowledge overall job satisfaction, while in the lower tier primary segment this observation holds for 49 per cent of the corresponding worker group (see also section 3.6.1). Using ω=70% as the critical level of well-being is probably a better choice to construct an internally consistent upper tier primary labour market, but this delineation does suffer from insufficient data for the purpose of reliably characterizing the composition of this top segment.

3.4.3. Sample selection bias, reliability and the EQA

Because of non-response to one or more variables of interest researchers are nearly always compelled to ignore a number of observations when performing an empirical analysis. In this framework it is usually assumed that the non-response is not selective having hopes that the findings of the subsample analysis are still an unbiased reflection of the corresponding population. Also selection decisions on the part of the researcher will result in empirical explorations based upon certain subsets of the original sample. In the present SLM investigation this observation, for example, holds when estimating the μ-equation: hospitality workers are selected for sample inclusion if they have completely and 'correctly' answered the IEQ (see fn. 30). This selection procedure, particularly regarding the endogenous variable in the μ-equation, has resulted in a censored sample. Because of this, the selected sample population regression function ($E(\hat{\mu}_i | y_{ci}, age_i, selection\ mechanism)$) is generally observed to be dependent not only on the exogenous variables of the average income evaluation $\hat{\mu}_i$, but also on the regressors determining the probability of workers' entrance into the subsample. In this context, Heckman (1979) shows that sample selection bias in the case of a censored sample can be considered as the traditional specification error that results from the omission of relevant explanatory variables in the classical least squares regression model. Therefore, if sample selectivity is estimated to be a statistical significant problem, then the estimation of the income evaluation equation using least squares results in biased parameter estimates. Below we briefly discuss the statistical way that is taken to test the null hypothesis of no selection bias.

First of all, we investigated the selection mechanism that defines a hospitality worker's μ-sample inclusion. This exploration matches the prediction of employees having completely and ´correctly´ answered the IEQ and with that are allowed to take part in deciding the position of the corresponding job wealth lines on the labour ladder. The logit model (Maddala (1983, p. 22)) is used to estimate the selection probabilities:

$$y_i^* = \beta' x_{1i} + u_i = z_i + u_i \qquad\qquad i=1,...,n \qquad (3.10)$$

with in this selection function x_{1i} a kx1 vector of explanatory variables, β a kx1 parameter vector and u_i a disturbance term assumed to have a logistic distribution. It is further assumed that y_i^*, in practice, is unobservable. We only observe the situation in which hospitality worker i is selected for the purpose of estimating the μ-equation or not. Stated otherwise, a dummy variable y_i is observed, defined as follows:

$$y_i = 1 \,(\mu\ selection)\ if\ y_i^* > 0\ and\ y_i = 0\ otherwise \qquad i=1,...,n \qquad (3.11)$$

Hence, the probability of worker's i entrance into the μ-sample equals:

$$\Pr(y_i = 1) = \Pr(y_i^* > 0) = \Pr(u_i > -z_i) = 1 - \Pr(u_i \le -z_i) = \frac{e^{zi}}{1 + e^{zi}} \qquad (3.12)$$

Figure 3.2: Some $\hat{\mu}_i$ selection probabilities for employees in the Dutch hospitality industry, September 2001

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : The presented selection probabilities for different worker's ages refer to hospitality employees enjoying net earnings equal to €1,500 per month, being single and having two family members and other than that having the characteristics of the reference group (see table 3.6).

The LPL methodology as a new approach to labour market segmentation

Contrary to the usual assumption concerning random experiments, the probability of sample inclusion, to be considered as the probability of success, is not constant, but experiment (case) dependent, particularly dependent on the values of the exogenous variables in x_{1i}. From equation (3.12) it is observed that the cumulative distribution function for u_i can be written down as a closed-form expression and as a consequence we do not have to compute some integral, only the evaluation of the S-shaped function for some value of z_i [33]. For the purpose of estimating the parameter vector β in the selection function the ML method is applied. When maximizing the corresponding likelihood function the first order conditions result in *k* nonlinear equations in the unknown parameters of interest to be solved using some iterative procedure such as the scoring method.

The resulting logit estimates of β show that different worker, job and firm characteristics have a significant effect on the probability of worker´s μ-sample inclusion (see table 3.6). For example, personal attributes such as family size, age and, to a lesser extent, gender are observed to be significant regressors[34]. The positive relationship with worker's age peaks at 23 years, after which the selection probabilities decline (ceteris paribus). In figure 3.2 this parabolic link is illustrated for hospitality employees enjoying net wages equal to €1,500 per month, being single ($fs = 1$) and having two family members ($fs = 2$) respectively (and other than that having the characteristics of the reference group). For single hospitality employees aged 39 or older the estimated probability of sample inclusion is falling below 50 per cent[35], with two family members this threshold value is reached at 42 years of age. Regarding job characteristics it is observed that executives have a higher selection probability than operatives. The same conclusion holds for management and service relative to the reference department. Furthermore, the selection probability is observed to be positively related to firm size. The odds on sample inclusion decreases most sharply in the smallest firms (1-9 employees)[36].

---

[33] For example, in the probit model it is assumed that the error term u_i in equation (3.10) has a normal distribution, mostly standard normal. Hence, $\Pr(y_i = 1) = \Phi(z_i)$ with $\Phi(.)$ the cumulative standard normal distribution function.

[34] So, notwithstanding the positive relationship between the family size and worker's age the partial effects of the corresponding explanatory variables on the selection probability are estimated to be significant.

[35] When the selection probability is estimated to be 50 per cent or higher it is usually assumed that the corresponding event, here being μ-sample inclusion, is likely to occur. For example, if the logit estimates are based upon the response of *n* representative hospitality employees, then it is possible to predict if worker *n+1* and the following may take part in drawing the borderline between the lower and upper tier of the primary labour market.

[36] The selection odds is defined as the ratio between the probability of selection into the μ-equation ('success') and the probability of μ-sample exclusion ('failure'): $Odds = \Pr(y_i = 1)/\Pr(y_i = 0) = \exp(z_i)$. Therefore, a positive (and significant) logit estimate does enlarge the selection odds if the particular attribute applies (e.g. 'from female to male'), while a negative partial effect reduces the odds. For the smallest firms, for example, this reduction equals about 50 per cent (=exp(-0.805)).

Table 3.6: Logit estimates of the $\hat{\mu}$ selection function for employees in the Dutch hospitality industry, September 2001

Explanatory variable	Logit estimates
Net hourly wages (logarithmic)	0.467 **
Family size (logarithmic)	0.411 **
Age (logarithmic)	23.210 **
Age^2 (logarithmic)	-3.726 **
Male (reference: female)	0.278 *
Permanent appointment (reference: temporary appointment)	0.194
Executive function (reference: operatives)	0.341 *
Business group (reference: fast food sector)	
Cafe sector	0.344
Restaurant sector	0.567 **
Hotel sector	0.303
Firm size (reference: 50+ employees)	
1-9 employees	-0.805 **
10-19 employees	-0.361 *
20-49 employees	-0.352 *
Department (reference: other departments)	
Kitchen	0.117
Service	0.755 *
Reception	0.831
Housekeeping	0.495
Management	0.994 **
Constant	-38.482 **
n	1,133
$\chi^2(18)$	140.57 **
Correct classified cases (%)	68.8

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks: : ** = Significantly at α=5%; * = significantly at α=10%.

Data to estimate the μ-equation are only available if $y_i = 1$ ($y_i^* > 0$) by which the population regression function based upon the selected sample is generally observed to be dependent on both the explanatory variables of the average income evaluation and the regressors explaining the probability of sample inclusion:

$$E(\hat{\mu}_i | x_{2i}, y_i^* > 0) = \gamma' x_{2i} + E(\varepsilon_i | y_i^* > 0) = \gamma' x_{2i} + E(\varepsilon_i | u_i > -\beta' x_{1i}) \qquad (3.13)$$

with x_{2i} a mx1 vector of explanatory variables of the average income evaluation, γ the corresponding parameter vector and $\varepsilon \sim N(0, \sigma_\varepsilon^2 I_n)$ a classical disturbance vector; x_{1i}, β and u_i respectively are similarly defined for the selection function. Only when u_i and ε_i are stochastically independent it holds that $E(\varepsilon_i | u_i > -\beta' x_{1i}) = 0$, that is the non-response

regarding $\hat{\mu}_i$ is missing randomly and by which applying OLS to estimate the structural μ-equation based upon the selected sample can be considered as an unbiased approach. The null hypothesis of no sample selectivity is equivalent to $\sigma_{\varepsilon u} = 0$. In order to test this hypothesis we follow the methodology as proposed in Heckman (1979), a paper in which it is argued that estimating the parameter vector γ in the μ-equation based upon a censored sample is tantamount to the omission of relevant explanatory variables of the average income evaluation, pointing to the final term in equation (3.13). Assuming u_i and ε_i to be normally distributed it holds that:

$$E(\varepsilon_i | u_i > -\beta' x_{1i}) = \sigma_{\varepsilon u} \lambda_i = \sigma_{\varepsilon u} \frac{\varphi(-\beta' x_{1i})}{\Phi(\beta' x_{1i})} \qquad i=1,...,n \qquad (3.14)$$

with $\varphi(.)$ and $\Phi(.)$ the standard normal density function and cumulative distribution function respectively. In contrast with Heckman (1979), to compute the conditional mean in equation (3.14) it is assumed that $\sigma_u = 1$ (following Maddala (1983, p. 23)). If λ_i is known, then this variable could be entered as an additional determinant of the average income evaluation, whereupon OLS can be applied to estimate the μ-equation. Of course, λ_i is not known. For consistently estimating λ_i and thereupon the parameter vector γ and the interequation covariance $\sigma_{\varepsilon u}$, in Heckman (1979, p. 157) the following estimation procedure is proposed. First of all, the parameter vector β in the selection function is estimated using probit analysis based upon the full sample. Next, from equation (3.14) consistent estimates of λ_i can be obtained. These estimated values of λ_i can then be used as an additional regressor in the income evaluation equation. Estimating this extended μ-equation based upon the selected observations does result in consistent parameter estimates of γ and $\sigma_{\varepsilon u}$. If sample selectivity presents a significant problem $(\sigma_{\varepsilon u} \neq 0)$, then it can be shown that the ordinary least squares estimator of σ_v^2 in the extended μ-equation[37] is biased downwardly. In this framework, the standard errors of the estimated parameters are underestimated and significance overrated. A consistent estimator of σ_v^2 is (reformulating Heckman (1979, p. 157)):

$$\hat{\sigma}_v^2 = \frac{1}{n_1} \sum_{i=1}^{n_1} \hat{v}_i^2 + \frac{\hat{\sigma}_{\varepsilon u}}{n_1} \sum_{i=1}^{n_1} (\hat{\lambda}_i \hat{\beta}' x_{1i} + \hat{\lambda}_i^2) \qquad (3.15)$$

with n_1 the number of observations in the income evaluation equation, $\hat{v}_i$ the OLS residuals and $\hat{\sigma}_{\varepsilon u}$ the estimated partial effect of λ_i. The estimated income evaluation equation inclusive of Heckman's $\hat{\lambda}$ reads as follows[38]:

$$\hat{\mu} = \underset{(-2.46)}{-4.166} + \underset{(20.67)}{0.843 \ln(y_c)} + \underset{(2.91)}{2.854 \ln(age)} - \underset{(-2.59)}{0.386 \ln^2(age)} + \underset{(0.26)}{0.012 \hat{\lambda}} \quad \overline{R}^2 = 0.81; \hat{\sigma}_v = 0.18 \quad (3.16)$$

---

[37] It is assumed that the disturbances in this extended income evaluation equation are denoted by v_i.

with the appropriate t-values, i.e. in accordance with equation (3.15), within brackets. Compared to the empirical findings of equation (3.9) it is observed that the estimates of the preference drift and the age parameters in equation (3.16) have not changed much. Furthermore, the hypothesis $\sigma_{\varepsilon u} = 0$ is not rejected, by which sample selectivity, notwithstanding the empirical findings in table 3.6, can be considered not to present a serious problem. Consequently, the estimation results of equation (3.9) continue to be the starting point for drawing the various job wealth lines.

In contrast with many other empirical SLM studies the IEQ methodology also enables us to get an impression of the reliability of the estimated job wealth lines. From equation (3.7) it follows that $\ln(\hat{y}_\omega)$ being dependent on the parameter estimators in the IEQ equation is also a random variable. The reliability of the estimated job wealth lines can be judged from the corresponding variance $\sigma^2(\ln(\hat{y}_\omega))$. We may approximate this variance using the δ-method (see Flik and Van Praag (1991, p. 318)):

$$\sigma^2(\ln(\hat{y}_\omega)) = \psi(\hat{\beta})' V(\hat{\beta}) \psi(\hat{\beta}) \tag{3.17}$$

with $\psi(\hat{\beta})$ the 4x1 vector of partial derivatives of $\ln(\hat{y}_\omega)$ with respect to the parameters in equation (3.9) and $V(\beta)$ the corresponding covariance matrix. Under the assumption of approximate normality of $\ln(\hat{y}_\omega)$ it holds that with 95 per cent probability the true and unknown segmentation line, depending on worker's age and the threshold value of well-being, is positioned in the following confidence interval:

$$\left\{ \ln(\hat{y}_\omega) - 2\sigma(\ln(\hat{y}_\omega)), \ln(\hat{y}_\omega) + 2\sigma(\ln(\hat{y}_\omega)) \right\} \tag{3.18}$$

The empirical findings of equation (3.9) show that, depending on the chosen level of well-being ω, three to four per cent of all hospitality employees in the primary labour market does enjoy after-tax earnings within this 2σ-probability interval. For this comparatively small group of primary employees it is not clear if they have to be defined as job wealthy workers or as lower tier primary employees (but nonetheless in the proximity of job wealth).

To conclude this section we consider the empirical plausibility of the *Equal Quantile Assumption* (EQA) in the Dutch hospitality industry (see table 3.7). In answering the IEQ, with the EQA it is generally assumed that the presented six verbal descriptors are similarly understood by different respondents, in such a way that these verbal labels are more or less placed, in thought, in the middle of the corresponding six intervals on a continuous [0,1]-scale, each with length 1/6. Under the assumption of lognormality of the WFI, the EQA will be validated to a greater extent when the welfare evaluation of the standardized (log-)income levels (i.e. $\Phi(\overline{u}_j)$ (j=1,...6)) is better matching the EQA predictions (2j - 1)/12 (see equation 3.3).

---

[38] In Heckman (1979) the disturbances are assumed to be normally distributed. Therefore, to compute $\hat{\lambda}_i$ all parameter estimates in table 3.6 are multiplied by a factor of 0.625 (Maddala (1983), p. 23).

Table 3.7: The empirical plausibility of the EQA in the Dutch hospitality industry, September 2001

j	IEQ verbal descriptors	$\bar{u}_j$	$\sigma(u_j)$	$\Phi(\bar{u}_j)$	EQA predictions
1	*Very bad*	-1.346	0.21	0.089	0.083
2	*Bad*	-0.752	0.15	0.226	0.250
3	*Insufficient*	-0.284	0.23	0.388	0.417
4	*Sufficient*	0.333	0.18	0.630	0.583
5	*Good*	0.769	0.13	0.779	0.750
6	*Very good*	1.281	0.19	0.900	0.917

Source   : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Using the findings of the Hospitality Employees Study, the 'mean square error' of $\Phi(\bar{u}_j)$ and the corresponding EQA predictions amounts to 0.0008. Therefore, the empirical validity of the EQA, in this case evaluating income levels, is likely to hold for workers being employed in the Dutch hospitality industry (at least in September 2001). The overall impression holds that this plausibility is standing out more clearly for hospitality employees practising a profession that is ranked higher on the institutional scale. For example, in the kitchen the 'mean square error' equals 0.0009; for assistants this amounts to 0.0012, for qualified cooks 0.0008 and for chefs 0.0005.

3.5. The primary labour market: professionals and craft workers

In this section we consider an alternative dichotomy of the primary labour market, that is a professional market containing all hospitality employees with completed initial vocational education at an intermediate or high level (e.g. MHS or HHS) and a craft market occupying all employees who declare that their job in the hospitality industry constitutes a main position, but not having completed any initial professional education (again at an intermediate or high level).

This operationalisation defines a primary labour market more or less consistent with earlier SLM writings (see, for example, Piore (1975), Edwards (1975) and Osterman (1975)), in which the top of the primary ladder is mainly determined by educational requirements and workers expected to have more command of pecuniary and non-pecuniary working conditions than their colleagues at the lower end of the primary spectrum. The identification of a primary segment, in which professional employees are well represented, constitutes a practice also frequently applied in later empirical SLM studies (see, for example, Anderson, Butler and Sloan (1987), Van Ophem (1987), Dekker, De Grip and Heijke (1995) and De Wit (1996)).

A closer examination reveals that the association of a professional market with the *upper* tier of the primary ladder is not that obvious taking into consideration the wide range of (perceived) working conditions. This intuitive feeling touches ground considering job characteristics such as the contract of employment, individual net earnings, the workload and overall job contentment (see table 3.11). Regarding these job attributes the 'competition between professionals and craft employees for the top of the primary ladder' seems undecided. However, other working conditions, including the freedom in work, additional training and career prospects, the outcome of this battle is observed to be more in harmony with the SLM expectations, i.e. professionals on the winning side. Overall, however, the characterization of all (intermediate and high level) professional employees in the Dutch hospitality industry as being positioned at the top of the primary ladder can be considered appropriate.

As opposed to the IEQ methodology the stratification of the hospitality labour market into a secondary segment of *Allemansfuncties* and a primary market of professionals and craft employees, henceforth also referred to as the PCS segmentation method, can be typified as the *employer's perspective* of a segmented labour force. In this framework, the stratification of labour can to a great extent be understood from the desired mix of labour supply qualities resulting from the employer's pursuit of an efficient and effective business undertaking. Consequently, the intensity of work experience in the hospitality industry and professional training can be considered to be two important dimensions in the segmentation process (De Wit (1996); see also section 3.3).

Table 3.8: Workers in the Dutch hospitality industry by labour market segment and business group (%), PCS method, September 2001

Business group	Secondary workers	Primary zone (PCS method)		Total
%		Craft workers	Professional workers	
Cafe sector	61.3	32.8	5.9	100
Fast food sector	58.1	31.4	10.5	100
Restaurant sector	43.2	35.0	21.7	100
Hotel sector	28.7	41.6	29.5	100
Total	46.6	36.3	17.0	100
N	142,600	110,100	51,900	305,500

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population.

Of course, regarding the secondary labour market the PCS and IEQ empirical findings are identical. Conforming to expectations, the professional market is relatively well represented

in the restaurant sector and the hotel sector (see table 3.8). For example, about 30 per cent of all hotel employees and 22 per cent of all restaurant employees have an initial professional qualification at an intermediate or high level. In the smaller-scaled cafes and cafeterias (and related firms), such a professional qualification holds for 6 and 11 per cent of the corresponding worker group respectively.

Approximately half of all professional employees in the Dutch hospitality industry is observed to be employed in the kitchen (see table 3.9). Conforming to expectations, this finding particularly points to cooks, (sous) chefs and kitchen managers. Production assistance in the kitchen is, above all, associated with secondary work.

Table 3.9: Workers in the Dutch hospitality industry by labour market segment: department and occupation distribution (%), PCS method, September 2001

Department/ occupation	Secondary workers	Primary zone (PCS method)		Total
%		Craft workers	Professional workers	
Kitchen	19.3	25.8	49.5	26.8
including:				
- *Assistant*	*11.4*	*5.3*	*2.1*	*7.6*
- *Cook*	*4.4*	*12.6*	*27.2*	*11.2*
- *Chef*	*0.0*	*4.4*	*18.3*	*4.8*
Service	67.5	43.1	34.4	53.0
including:				
- *Cafeteria worker*	*34.3*	*18.4*	*12.6*	*24.9*
- *Fast food restaurant worker*	*10.6*	*7.0*	*3.7*	*8.1*
- *Bartender*	*11.2*	*6.6*	*5.2*	*8.5*
- *Senior service worker*	*2.7*	*2.2*	*4.2*	*2.7*
- *Service head*	*1.7*	*6.1*	*5.2*	*3.9*
Reception	1.3	7.3	4.2	4.0
Housekeeping	7.2	7.3	1.0	6.2
Management	0.9	10.7	8.9	5.8
Other departments	3.8	2.1	5.8	4.2
Total	**100**	**100**	**100**	**100**

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : Kitchen = assistant (production helper), (un)qualified cook, (sous) chef, kitchen manager and other kitchen employees; service = cafeteria worker, cafe worker, fast food restaurant worker, bartender, senior service worker (inclusive of roomservice), service head, manager and other service employees; reception = (night) porter, receptionist, reception head, front office manager and

other reception employees; housekeeping = dishwasher, cleaning person, chambermaid, head housekeeper, head general service, housekeeping manager and other housekeeping or general service employees; management = administrator, secretary, system manager, head accounting, manager and other management functions.

: Some occupations (or worker groups) in the Hospitality Employees Study are (further) grouped: cook = unqualified and qualified; chef = sous chef, chef and kitchenmanager; cafeteria worker = cafeteria plus cafe worker; service head = service head and manager.

Again the balance never dips completely to either the primary or secondary segment. For example, it is eye-catching that some professional employees, thus having initial professional schooling at an intermediate or high level, are actually employed as a kitchen assistant. For these workers, at least on paper, underutilization of their professional human capital is likely to be present. In service primary employees are relatively underrepresented. Most professional service workers are observed to be employed as a cafeteria (or cafe) worker. Comparatively, however, this professional observation holds most for senior service workers and service heads (inclusive of managers). The latter occupational group is also relatively well represented in the lower tier primary labour market. The reception and management can, above all, be associated with primary positions. Housekeeping is particularly represented by secondary and craft employees.

Table 3.10: The allocation of employees in the Dutch hospitality industry: the IEQ and PCS segmentation method compared, September 2001

	Secondary workers	Primary zone (IEQ method)		Total
		Low	Up	
Secondary workers	529 (46.7%)	0	0	529 (46.7%)
Primary zone (PCS method)				
Craft workers	0	366 (32.3%)	45 (4.0%)	411 (36.3%)
Professional workers	0	166 (14.7%)	27 (2.4%)	193 (17.0%)
Total	529 (46.7%)	532 (47.0%)	72 (6.4%)	1,133 (100%)

Source   : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks   : Within brackets *total* percentages are presented.

To conclude this section we explore the extent of agreement between both approaches to labour market segmentation (see table 3.10). Taking into consideration the entire hospitality labour market this similarity is significant. This conclusion follows from the value of the κ

(kappa) measure of agreement: κ=0.69 having an asymptotic standard error of 0.017[39]. However, in view of the identical definition of the secondary labour market this significance is not surprising. Within the primary labour market the agreement is not significant. By selecting ω=65% as the critical welfare level, *by definition* many professional workers are rated among the IEQ lower tier primary market. If all job wealthy workers would be professionals, then this rating concerns 63 per cent (=(193-72)/193) of all professional workers and would be the highest attainable similarity in workers' allocation. Actually, more than half of all job wealthy workers is employed in the craft market, by which a larger part, i.e. 86 per cent (=(166/193)), of all professional employees is having a primary job, but not experiencing job wealth.

3.6. Some SLM hypotheses, a bivariate analysis

For the purpose of exploring the validity of the created labour market segments and the empirical plausibility of a segmented labour market in the Dutch hospitality industry in this section some hypotheses are formulated. By following the bivariate avenue the considerations are to be characterized as being descriptive in nature. In later chapters some hypotheses are tested in a multivariate setting.

3.6.1. Job characteristics

The theory of labour market segmentation does predict the existence of a limited number of distinct submarkets (Ryan (1980)), with at the bottom of the spectrum the less alluring job positions and at the top the more attractive jobs (Doeringer and Piore (1970), see also section 2.3):

> *Hypothesis 1: Primary employees, relative to their secondary fellow workers, enjoy better monetary and non-monetary working conditions, including (1a) higher earnings, (1b) job security, (1c) work stability and (1d) an alluring job content.*

Furthermore, given the SLM perspectives in this chapter ending in a tripartition of the hospitality labour market, it is also expected that job allure principally has more bearing on upper tier primary employees than it has at the lower end of the primary spectrum:

---

[39] The kappa statistic measures the extent to which the number of observations in the main diagonal (of the square matrix) differs from the expected number of observations under the null hypothesis of no agreement. The kappa statistic is computed as follows:

$$\kappa = \frac{p_o - p_e}{1 - p_e}$$

with p_o the sum of the observed total percentages in the main diagonal cells and p_e defined similarly under the null hypothesis. The maximum value of κ equals 1 (no observations off the main diagonal). A value of κ greater than 0.75 is usually considered to point to excellent agreement, a value below 0.40 to poor similarity and in between indicating the agreement to vary from fair to good.

Hypothesis 2: Primary workers employed at the top of the labour ladder principally enjoy better monetary and non-monetary working conditions than their lower tier primary colleagues, including (2a) higher earnings, (2b) job security, (2c) work stability and (2d) an alluring job content.

A comparison between some characteristics of the *Allemansfuncties* in the Dutch hospitality industry and that of jobs in the primary market reveals that the SLM expectations as expressed in hypothesis 1 for the most part are not rejected (see table 3.11). For example, regarding the net hourly wages, job security (permanent contract), 'work instability' on account of small part-time work and flexible working hours and some aspects pointing to the content of work, the conclusion holds that secondary positions are less alluring, at least conforming to SLM theory, than primary jobs in the hospitality industry. In this respect, with the exception of *mostly finding work to be absorbing*, the differentials between the segments are observed to be significant, regardless of the applied stratification procedure. In sum, using the IEQ or PCS perspective of a segmented labour force, hypotheses 1a, 1b, 1c and 1d are not rejected.

Despite less job allure in terms of, among other things, job security and wage classification, secondary workers more than averagely are taking the view to be *well* of with their present work (overall job satisfaction). In the secondary segment this finding likely has to do more with the accessibility to the labour market than with SLM appeal in the form of, for example, job security, full-time work and higher individual earnings. For certain worker groups small part-time work or flexible working hours offer opportunities to combine a job position in the labour market with, for example, attending school and/or the (motherly) care for children. Furthermore, the feasibility of this combination is also stimulated by secondary positions with minimal job requirements.

In Anderson, Butler and Sloan (1987) the upper tier of the primary labour market, in their SLM study strongly represented by professional workers and managers, is particularly associated with job positions having privately negotiated wages. In view of the minimum nature of the collective agreement this correlation is also observed to hold in the Dutch hospitality industry. Using the data from the Hospitality Employees Study this expectation can not be tested, but from a large-scale investigation among hospitality *employers* in September 1995 (Dutch Board for the Hospitality and Catering Industry (1996b, p. 64)), it appears that approximately 27 per cent of all hospitality workers on the payroll does earn wages more than the highest scale salary of the applied job group. For professionals having completed an initial professional education at an intermediate or high level this percentage is observed to be above average (e.g. 45 per cent for MHS). Consequently, a positive relationship is also observed between the share of workers paid above the highest scale salary and the job level. For example, approximately 22 per cent of all operatives, as opposed to 37 per cent of all independent workers and 45 per cent of the executive staff,

enjoys privately negotiated wages higher than the highest scale salary. These empirical findings also support hypothesis 1a[40].

Table 3.11: Some job characteristics in the Dutch hospitality industry by labour market segment, September 2001

	Secondary workers	Primary zone (IEQ method)		Primary zone (PCS method)		Total
		Low	Up	Craft workers	Professional workers	
Net hourly wage						
y_c	€ 5.1	€ 6,7	€ 6.8	€ 6.7	€ 6.6	€ 5.9
Salary consistent with work (%)	58.7	47.6	73.6	53.0	45.6	54.4
Contract of employment (%)						
Permanent appointment	36.5	78.9	65.3	77.9	76.0	58.2
Temporary appointment	63.5	21.1	34.7	22.1	24.0	41.8
Contractual working hours per week (%)						
Small part-time	86.6	15.0	30.6	18.2	14.0	49.4
Large part-time	10.4	31.8	37.5	38.6	19.7	22.2
Full-time	3.0	53.2	31.9	43.2	66.3	28.4
Flexible working hours	*56.8*	*8.6*	*16.7*	*10.5*	*7.8*	*31.6*
Actual working hours (hours)	*13.3*	*35.2*	*30.1*	*33.2*	*37.5*	*24.7*
	hours	hours	hours	hours	hours	hours
Job content (%)						
Sufficient variation in work	79.8	85.7	87.7	85.4	87.6	83.1
Mostly absorbing work	71.8	76.3	81.9	75.2	80.8	74.6
Too simple work	44.4	32.4	45.2	35.0	31.6	38.8
Job requires to learn new things	45.0	54.5	69.4	53.8	62.0	51.1
Overall job satisfaction (%)	55.1	48.8	60.3	51.2	47.9	52.5
N	142,600	143,400	19,500	111,000	51,900	305,500
n	598	498	75	388	185	1,171

Source   : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

---

[40] For the period 1992-1994 similar conclusions hold (Dutch Board for the Hospitality and Catering Industry (1996b)). As from 1996 the particular survey question regarding individual earnings above the highest scale salary is not presented anymore.

Remarks   : A permanent appointment is inclusive of temporary employment with the commitment of a permanent contract.

: Small part-time work = flexible working hours or contractually for at most 11 hours per week; large part-time work = 12-37 hours per week; full-time work = 38+ hours per week.

: Regarding the various work attitudes the exact wording is as follows: salary consistent with work = *Do you think your salary being in line with the work to be done?*; sufficient variation in work = *Do you experience sufficient variation in your work?*; mostly absorbing work = *Is your work mostly absorbing?*; too simple work = *Do you think your work being too simple?*; job requires to learn new things = *Does your job require to learn new things*; overall job satisfaction = *All in all, are you currently taking the view to be well, fairly well, moderately well or not well off in your work?* The percentages concerning these work attitudes point to the share of workers having answered the particular survey question affirmatively, except for the overall job satisfaction referring to all workers who are of the opinion to be *well* off with their present work.

: N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

Segmentation of the primary labour market based upon the *vox populi* aims at internal consistency (see section 3.4.1). The results in table 3.11 regarding the overall job satisfaction illustrate the presence of this consistency. At the top of the IEQ primary spectrum the score on overall job satisfaction amounts to 60 per cent, while at the lower end of the primary segment this percentage is observed to be significantly smaller. Furthermore, almost three-quarters of all job wealthy workers is of the opinion that the salary matches the work to be done, while in the lower tier segment this percentage equals 48 per cent. In this respect, the PCS segmentation method does not end in internally consistent labour market segments. Regarding the overall job satisfaction the scores between the different PCS worker groups do not differ significantly. Furthermore, compared to their professional colleagues, craft employees more frequently take the view that the salary is in line with the work to be done. In view of the extent of internal consistency in the primary labour market, i.e. considering the overall job satisfaction and assumed to measure both pecuniary and non-pecuniary working conditions, using the IEQ approach hypothesis 2 is not rejected, while the PCS perspective to labour market segmentation is not supportive of this hypothesis.

However, when considering the *individual* job characteristics in table 3.11 conclusions are observed to be mixed. Regarding the net hourly wages and the type of employment contract both SLM perspectives are not supportive of hypothesis 2 (2a/b). On the other hand, measuring the extent of an alluring job content both the IEQ and PCS classificatory schemes show empirical support for hypothesis 2d. This conclusion particularly emanates from the responses to the following work attitudes: *sufficient variation in work*, *mostly absorbing work* and *job requires to learn new things*. Viewing work stability both SLM perspectives show different results. Relative to the craft market, professionals score significantly higher on full-time positions and lower on flexible working hours (hypothesis 2c: not rejected). However, using the IEQ perspective, for job wealthy workers these observations are reversed (hypothesis 2c: rejected). More specifically, in September 2001, 76 per cent of all professional workers has a permanent contract and 66 per cent has a full-time appointment. For job wealthy workers these percentages are considerably smaller, that is 65 and 32 per

cent respectively. For professionals the actual number of working hours is averaging out at 38 hours per week and for job wealthy workers amounting to 30 hours per week.

Table 3.12: Some aspects of freedom in work in the Dutch hospitality industry by labour market segment, September 2001

	Secondary workers	**Primary zone (IEQ method)**		**Primary zone (PCS method)**		**Total**
		Low	Up	Craft workers	Professional workers	
Report mark *autonomy*	**5.4**	**6.6**	**6.6**	**6.2**	**7.4**	**6.1**
%						
Pausing in work	54.5	57.5	57.5	57.3	58.0	56.1
Adjusting speed of work	42.0	55.5	70.8	52.9	66.3	50.1
Moment carrying out work	40.5	66.5	58.9	59.1	79.3	53.9
Order of work	57.2	81.4	76.4	75.5	91.7	69.7
Influence work schedule	78.1	69.0	66.7	65.9	74.6	73.1
N	142,600	143,400	19,500	111,000	51,900	305,500
n	598	498	75	388	185	1,171

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : The exact wording is as follows: pausing in work = *If you think it is necessary, can you pause in your work?*; adjusting speed of work = *Are you able to adjust the speed of work?*; moment carrying out work = *Can you decide yourself when to perform a task?*; order of work = *Do you decide yourself the order of work?*; influence work schedule = *Do you have influence on the composition of the work schedule?* The percentages point to the share of workers having answered the particular survey question affirmatively. Every worker group is also awarded a report mark *autonomy* equal to the average positive scores (*yes* answers) on the above-mentioned aspects of freedom in work.

: N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

Freedom in work and more generally having control of life are conditions by many people likely to be considered for themselves (and for their children) as the summum bonum. In Osterman (1975, p. 512) primary employees who can be typified by having a high degree of autonomy in their work (and high personal participation in the work process) are considered as a separate worker group positioned at the top of the primary labour ladder. In this framework, with reference to Sennett and Cobb (1972, p. 40), particular attention is paid to the independence of professional workers:

"Since the power of professionals lies in their ability to give or withhold knowledge, they are in positions that by and large are not questioned by others; they are "authorities" themselves, "authorities" unto themselves. It is precisely the endowment of professionals with this inner self-sufficing power that gives them a higher

status than others with economic power. For their autonomy makes them seem market-proof in that they can perform their function no matter what is happening to others around them. Their nurturing power appears as an ability that they bring to people; others need them in a way that they do not need others. It is in this sense that the professional is the only truly independent person in a class society – needed more than he or she needs."

Occupations in Osterman (1975) that are considered to be representative of the upper tier primary labour market include, inter alia, accountants, actors, authors, college professors, scientists, lawyers, musicians and dancers; occupations in the hospitality industry are particularly associated with the secondary segment (p. 523). Nevertheless, within the boundaries of the Dutch hospitality industry we also expect that a more alluring ('better') job position generally goes hand in hand with more freedom in work. Freedom in work has to be 'earned' and as such is likely to be connected with the human capital stock of workers. In this respect, initial and additional professional training and work experience in the hospitality sector can be regarded as two important dimensions.

> *Hypothesis 3: (3a) Freedom in work is more characteristic of workers in the primary labour market than of workers being employed in the secondary segment. (3b) Furthermore, within the primary labour market, freedom of action particularly applies to workers at the top of the spectrum.*

The extent of freedom in work of secondary employees in the Dutch hospitality industry is lagging behind the other worker groups: the corresponding 'report mark' amounts to 5.4 as opposed to 6.1 for all UWV employees (see table 3.12). Except for the ability *to pause in work* the responses to the specific aspects of freedom in work differ significantly between the submarkets. This conclusion holds for both SLM perspectives. In view of the ability to adjust the speed, the moment and order of work secondary workers enjoy considerably less control of work than their primary colleagues. Only regarding the influence on the composition of the work schedule the opposite holds. Like flexible working hours and less exacting work (see table 3.11) this secondary staff involvement also supports the feasibility to combine a position in the labour market with private matters. Using the PCS segmentation method it is further observed that, within the primary segment, professional workers have the advantage of more freedom in work than their lower tier fellow workers: the corresponding report marks average out at 7.4 and 6.2 respectively. The IEQ methodology does not end in a dichotomy of the primary labour market with, on average, differential intensities in freedom in work. Summarizing, in the Dutch hospitality industry primary employees are observed to enjoy more autonomy in the work process than their secondary colleagues (hypothesis 3a not rejected), and within the primary field, the IEQ segmentation method is not supportive of hypothesis 3b, while the PCS perspective reveals empirical support: professionals have more freedom in the work process than craft employees[41].

---

[41] Of course, conclusions are based upon those aspects of freedom in work that can be considered using the findings of the Hospitality Employees Study (a comment holding for most explorations). In addition to the work process freedom in work can also be associated with 'creative latitude' regarding, for example, the preparation of meals, the garnishing of a dish and service and entertainment in the front performance.

Table 3.13: Some aspects of the physical workload in the Dutch hospitality industry by labour market segment, September 2001

	Secondary workers	Primary zone (IEQ method)		Primary zone (PCS method)		Total
%		Low	Up	Craft workers	Professional workers	
Under work *frequently* have to:						
- stand uninterruptedly	90.2	83.1	79.2	80.0	87.6	86.1
- walk uninterruptedly	82.6	75.8	70.8	73.1	79.3	78.6
Under work *frequently* have to:						
- lift weights over 5 kilograms	49.6	58.2	50.0	51.7	68.9	53.7
- bear weights over 5 kilograms	44.2	50.7	44.4	46.5	57.5	47.3
Under work *frequently* have to:						
- lift weights over 25 kilograms	6.6	17.3	15.3	15.3	21.2	12.3
- bear weights over 25 kilograms	4.9	14.7	13.7	13.6	17.1	10.1
Under work *frequently* have to:						
- reach far with hands or arms	53.4	50.5	44.4	52.2	44.6	51.5
- work in uncomfortable positions	21.6	27.3	21.9	27.2	25.9	24.4
- work in a narrow workroom	15.7	22.2	17.8	21.6	21.9	18.9
- work above one's head	8.1	18.2	4.1	17.7	14.1	12.6
N	142,600	143,400	19,500	111,000	51,900	305,500
n	598	498	75	388	185	1,171

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : The exact wording is as follows: under work frequently have to stand/walk uninterruptedly = *During work do you often have to stand/walk uninterruptedly?*; under work frequently have to lift/bear weights over… = *During work do you often have to lift/bear (very) heavy weights over 5 (25) kilograms?*; under work frequently have to reach/work in/… = *During work do you often have to reach/work in/...?* The percentages refer to all workers having answered the particular survey question affirmatively.

: N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

Considering that secondary employees occupy the lower echelons, expectations are that less alluring working conditions will, among other things, manifest itself in comparatively more work-related discomforts and (with that) more risk of, for example, occupational illness and injuries (Graham and Shakow (1990)).

Hypothesis 4: Secondary employees more frequently experience job discomforts than their primary colleagues.

Characteristic of working in the hospitality industry is the extent to which employees frequently have to stand and walk uninterruptedly. In September 2001, this work situation is observed to hold for approximately 86 and 79 per cent of all hospitality employees respectively (see table 3.13). Regarding both these aspects of the physical workload secondary workers experience significantly more discomfort than their primary colleagues. These empirical findings are supportive of hypothesis 4 and are correlated with the comparatively strong representation of waiters (also counter) and production helpers in the secondary labour market (see table 3.5). However, considering some other aspects of the physical workload secondary employees show significantly less disamenities than their primary fellow workers. Findings not being in line with hypothesis 4 include working conditions such as frequently have to lift or bear (very) heavy weights during work and often having limited working space.

On the primary ladder it is noticeable that, above all, professional employees in the hospitality industry experience certain physical job disutilies. Nearly 70 per cent of all professional employees indicates during work frequently have to lift weights over 5 kilograms and over 20 per cent packs weighting more than 25 kilograms. For both craft employees and job wealthy workers these discomfort percentages amount to approximately 50 and 15 per cent respectively. Regarding bearing weights similar conclusions hold. On the other hand, regarding some other job related risk variables, including *working above one's head* and *under work frequently have to reach far with hands or arms*, job discomfort particularly applies to workers in the craft market and workers positioned in the lower tier IEQ primary market.

Also considering aspects of the mental workload we perceive mixed results. All in all, at the bottom of the labour ladder approximately 30 per cent of all secondary workers in the hospitality industry regularly finds work to be very exacting. In the primary market this percentage nearly doubles. These findings are not in harmony with hypothesis 4. However, like flexible working hours and, for example, having influence on the work schedule, also secondary work not regularly being experienced as very exacting will stimulate the possibility to combine a formal labour market position with private matters.

According to neoclassical economics employees at the lower end of the labour market can improve on their job position by enriching their human capital stock, by which their productivity and with that individual earnings are generally put on a higher level (see section 2.1). Consequently, income differentials between secondary and primary workers are likely to be reduced (ceteris paribus). Furthermore, this process of equalizing differences (Rosen (1986) and Graham and Shakow (1990)) is also stimulated by the neoclassical expectation that workers at the lower end of the labour ladder enjoy a wage premium for their greater job discomforts and work-related hazards. By contrast, the SLM theory predicts the wage-setting process in the secondary market being independent of the human capital stock of

workers and a wage premium for job disutilities only for primary employees. These SLM hypotheses are tested in chapter 5. Notwithstanding the presence of a collective agreement in the Dutch hospitality industry, in which job discomforts form an official part of the job evaluation (Landelijke Bedrijfscommissie voor het Horecabedrijf (1993)), from a SLM perspective it is likely that hospitality employers are more inclined to uphold a stable and 'solicitous' work relationship with their primary (key) employees than with the secondary worker group.

3.6.2. Worker characteristics

In addition to expectations concerning typical job attributes in the different labour market segments, from the SLM literature also regarding the supply of labour (worker characteristics) some hypotheses can be formulated (Dekker, De Grip and Heijke (1995)).

Because of a closer bond with the labour market expectations are that the primary segment, occupying the more alluring positions, is particularly open to men. Employers are likely to be more solicitous about stable (and predictable) workers having less risk of switching employers or turning one's back to the labour market, by which, among other things, the employers' investments in the human capital of their employees are retained for the benefit of the business undertaking for a long(er) time period. On account of the above-mentioned bond it is also more inviting for men themselves (being workers) to invest in their human capital stock, since the received education and training can yield over a longer active life.

Hypothesis 5: (5a) Male employees are overrepresented in the primary labour market (likewise women in the secondary segment), (5b) particularly at the top of the labour ladder.

The *Allemansfuncties* in the Dutch hospitality industry are likely to hold attraction not only for task-combining women, but also for students and schoolgoing youngsters who are willing (or have to)[42] earn some money in the labour market. To a large majority of these youngsters the future is not likely to be within the hospitality industry. However, for some young employees in the secondary segment who are currently receiving substantial initial professional hospitality training (e.g. through the apprentice system) this perspective is likely to hold. It is also conceivable that some young workers having completed some initial education at an intermediate or high level (by definition not being hospitality oriented) consider their secondary position in the hospitality industry as a temporary solution in their quest for a 'real' job that will do more justice to the procured proficiency.

In the professional market the expected age distribution is less clear-cut. After completing initial vocational training at an intermediate or high level, (young) workers are by definition counted as professionals in the hospitality industry. Furthermore, when not turning one's back to the hospitality industry these workers, using the PCS segmentation method, will remain in the professional segment for the rest of their active life. Professional employees

---

[42] In the Netherlands students grants have been sobered down, a development that has ended in more flexible labour supply (see also Dunnewijk and Lammertsma (1999)).

are educated to have a career (jobs) in the hospitality industry, by which it is expected that at first a close sectoral bond is present (see also hypothesis 10). The professional endowments are likely to be interchangeable between a comparatively large number of hospitality employers. Of course, it is also conceivable that professionals in the longer run, for various reasons, are inclined to employ their primary (partly general) proficiency outside the domain of the traditional hospitality industry. By virtue of these arguments it is not expected certain age groups in the professional segment to be overrepresented.

Table 3.14: Some worker characteristics in the Dutch hospitality industry by labour market segment, September 2001

	Secondary workers	Primary zone (IEQ method)		Primary zone (PCS method)		Total
		Low	Up	Craft workers	Professional workers	
Age (%)						
Under 23 years	71.0	15.4	71.2	20.4	25.9	45.0
23-29 years	12.7	26.3	21.9	20.2	37.3	19.6
30-39 years	7.0	30.2	2.7	27.3	25.9	17.6
40-49 years	6.3	17.6	-	18.5	9.3	11.2
50+ years	3.0	10.5	4.1	13.6	1.6	6.6
Average workers' age	*23.1 years*	*33.9 years*	*21.5 years*	*34.3 years*	*28.2 years*	*28.0 years*
Gender (%)						
Female	58.4	46.7	40.3	52.8	31.1	51.7
Educational level (%)						
Low	41.0	41.4	32.9	59.2	-	40.7
Intermediate	42.9	48.1	58.9	28.6	93.8	46.4
High	16.1	10.5	8.2	12.1	6.2	13.0
N	142,600	143,400	19,500	111,000	51,900	305,500
n	598	498	75	388	185	1,171

Source	: "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).
Remarks	: Educational level: low = LBO, VMBO and MAVO; intermediate = HAVO, VWO, MHS, apprentice system and other professional education at an intermediate level; high = HHS, university and other high level professional education.
	: - = Insufficient cell count or combination by definition not occurring.
	: N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

By definition, craft workers in the hospitality industry do not command some initial professional qualification at an intermediate or high level, but their human capital stock may cover initial low level professional education as well as additional training tuned to the hospitality practice (see table 3.15). Compared to the other worker groups, craft employees having a main job in the hospitality industry are likely to have a closer bond with the present organization (and with that the industry). We expect that the older age groups are relatively well represented in the craft market.

> *Hypothesis 6: (6a) Young employees are overrepresented in the secondary labour market and (6b) likewise the older employees in the craft market.*

Approximately 70 per cent of all professional employees in the Dutch hospitality industry is a man and almost 60 per cent of all secondary employees is of the female sex (see table 3.14). Furthermore, somewhat more than 50 per cent of all craft employees is a woman. Using the IEQ segmentation method, at the lower end of the primary spectrum and particularly at its top a majority of all hospitality employees is a man. Using both SLM perspectives, the gender distributions are observed to differ significantly between the segments. Hypotheses 5a and 5b are not rejected.

In the secondary labour market 71 per cent of all employees is observed to be under 23 years of age as opposed to 45 per cent at the industry level. A closer examination shows that over 40 per cent of all secondary employees has completed some low level education and about an equal percentage some initial education at an intermediate level (by definition not hospitality oriented). These findings confirm the overall impression of relatively many secondary workers earning some money in the hospitality industry, at the same time being a student or still schoolgoing. In this context, there will, of course, be workers not attending some continuation course. For example, low level initial education as the terminal point is likely to hold particularly for the older age groups. Furthermore, it is eye-catching that 16 per cent of all secondary employees has completed an initial education at a high level (once again not being hospitality training). This observation may partly be explained by the 'temporary hospitality solution', while searching for 'the real job' mentioned before. Secondly, it is also conceivable that some (young and) highly educated workers are occupying a main position outside the hospitality industry and in this sector having a secondary appointment, for example, at weekends and/or during evenings. This combination is known to hold for workers being employed with the same hospitality employer as they were while attending school and with whom a particular relation is built up. Obviously, a third explanation is reading the particular survey question glancingly[43]. In the Hospitality

---

[43] Of course, incomplete and inaccurate data are frequently encountered in empirical (economic) studies. In an econometrics setting, Griliches (1986) expresses the problems often encountered in applied studies as follows: "There are at least three interrelated and overlapping causes of our difficulties: (1) the theory (model) is incomplete or incorrect; (2) the units are wrong, either at too high a level of aggregation or with no way of allowing for the heterogeneity of responses; and, (3) the data are inaccurate on their own terms, incorrect relative to what they purport to measure. The average applied study has to struggle with all three possibilities (pp. 1468-1469)".

Employees Study respondents are explicitly asked about all completed initial schooling. On account of the multiple response nature of the corresponding survey question it is imaginable that some respondents will not only have marked education rounded off with a certificate, but also the current (high level) continuation course.

Craft employees are observed to be well represented in the older age groups. In September 2001, approximately one-third of all craft workers is 40 years or older. In both the secondary and professional segment this amounts to about 10 per cent. For craft workers the age averages out at 34 years as opposed to 23 years and 28 years for secondary employees and professionals respectively. Hypothesis 6b is not rejected. Using the IEQ methodology it is observed that job wealth is typified by youthfulness: over 90 per cent is under 30 years of age.

3.6.3. Additional training

Additional training constitutes an important instrument for employers to (further) stimulate the functional flexibility of their staff (see chapter 6). In this respect effort is made to harmonize the quality of labour supply with the required competencies. These requirements are dynamic and are nourished by, among other things, (the ever) changing market conditions, dictated by, for example, altering consumer demands and innovations in the organization (see, for example, Pine and Gilmore (1999) and Dialogic (2005)). Examples include experience nowadays being emphatically on the consumers' hospitality agenda and the Internet to an increasing extent an important business and marketing tool in the hospitality industry. Expectations are that the quest for functional labour flexibility, e.g. multiskilling (being an input measure) and job rotation (output), has more bearing on primary employees than on workers being employed in the secondary segment. For the *Allemansfuncties* in the Dutch hospitality industry the necessary qualifications are rather simple, hardly requiring a training period. Secondary labour in the hospitality industry is, above all, associated with 'extra helping hands' to enlarge the numerical flexibility of the organization. As noted, employers are rather likely to uphold a stable work relationship with their key employees by offering, among other things, job security, alluring working conditions (hypothesis 1) and additional training opportunities. Initially, professionals are likely to have a close bond with the industry and craft workers with the present employer. Obviously, professionals are likely to feel more closely with the present organization as the perceived allure of the current position rises, for instance, by having more freedom in work or privately negotiated wages. The likelihood of additional training mostly being financed by the employer and considering the risk of free-riding, expectations are that additional training averagely has more bearing on craft employees than on professional workers.

> *Hypothesis 7: (7a) Primary employees enjoy more additional training than their secondary colleagues and, (7b) within the primary segment post schooling has more bearing on craft employees than on workers in the professional market.*

It is observed that primary employees in the Dutch hospitality industry, in September 2001, have completed more additional hospitality training than their secondary colleagues (see

table 3.15). Using both SLM perspectives the observed training percentages differ significantly between the submarkets. For example, approximately 28 per cent of all hospitality employees has completed safety training (EHBO, social hygiene and the like). In the professional market this holds for 51 per cent of the corresponding worker group, for craft employees the score is 38 per cent and in the secondary segment 13 per cent. Using the PCS segmentation method this order applies to all forms of completed additional hospitality training (as being distinguished in the Hospitality Employees Study).

Table 3.15: Completed additional training in the Dutch hospitality industry by labour market segment, September 2001

	Secondary workers	Primary zone (IEQ method)		Primary zone (PCS method)		Total
		Low	Up	Craft workers	Professional workers	
Completed additional training (%)						
Entrepreneurial skills	5.3	24.2	20.8	23.1	25.5	15.2
Vocational training	9.5	33.5	24.7	25.3	47.4	21.6
Safety training	12.5	43.7	32.9	38.4	50.8	28.4
Master course	1.1	12.0	5.6	6.8	20.8	6.5
Management training	2.5	10.4	9.6	9.5	11.9	6.6
(Enterprise) internal training	2.3	11.5	9.7	10.9	12.0	7.1
Administrative courses (hospitality oriented)	1.9	6.4	9.7	5.8	9.3	4.6
With completed additional training (%)	25.3	64.5	52.8	58.0	74.1	45.5
Intensity of additional training (#)	1.8	2.5	2.3	2.4	2.6	2.3
N	142,600	143,400	19,500	111,000	51,900	305,500
n	598	498	75	388	185	1,171

Source   : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks   : Entrepreneurial skills: general entrepreneurial skills, cafe sector, restaurant business and the like; vocational training: additional training addressed to aspects such as cooking, serving and hygiene (HACCP); safety training: BHV, EHBO, social hygiene and the like. Obviously, workers may have completed more than one hospitality course. This observation also follows from the sum of the relevant percentages.

: The intensity of additional training is measured by the average number of completed training courses tuned to the hospitality practice (by workers *with completed additional training*).

: N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

Obviously, using the IEQ segmentation method comparatively many professionals move to the lower end of the IEQ primary ladder (see section 3.5). Consequently, the training percentages in the latter segment are mostly observed to be larger than for the 'wealthy worker group'. For secondary employees, relative to their primary colleagues, also the intensity of additional training is lagging behind. Hypothesis 7a is not rejected. Furthermore, approximately three-quarters of all professional workers (also) has completed additional hospitality training, on average 2.6 training courses. For craft employees this amounts to 58 per cent and 2.4 courses respectively. Hypothesis 7b is rejected.

Practically, additional training can usually be typified as being both generic and specific in nature, by which an accurate distinction can not be made (Theeuwes (1995)). Consequently, for both configurations, that is training particularly labeled as general or firm specific, employers are likely to pay (a large part of) the direct training costs (Dekker, De Grip and Heijke (1995) and De Feyter, Smulders and De Vroome (2001)). This expectation also holds for the Dutch hospitality industry (Landelijke Bedrijfscommissie voor het Horecabedrijf (2000, p. 44)). In this context, investments in additional training are stimulated to a greater extent as the time period, in which the new procured human capital can be employed, is expected to be longer. Therefore, we expect that, at a certain moment, younger employees enjoy more additional training than their older colleagues[44]. A similar argument holds for workers having a full-time appointment compared to part-time employees: in a full-time setting the working hours, in which the additional human capital yields, are observed to be longer (ceteris paribus).

If an employer in the Dutch hospitality industry obliges an employee to attend additional training, then, in accordance with the collective agreement, the worker concerned must be allowed taking the course during working hours (Landelijke Bedrijfscommissie voor het Horecabedrijf (2000, p. 44)). Insofar older employees enjoy higher earnings, then, in addition to a shorter return period, also the opportunity costs are likely to play an important part to decide whether to invest or not in additional training (see also Mincer (1974)).

> *Hypothesis 8: (8a) The participation in additional training decreases as worker's age rises (irrespective of the labour market segment). (8b) Likewise, full-time employees enjoy more additional training than their part-time fellow workers.*

---

[44] Mincer (1974, pp. 13-14) writes: "Rational allocation requires that most of the investment be undertaken at younger ages. Thus schooling, a largely full-time activity, precedes job-training, a largely part-time activity, and the latter diminishes with age, terminating years before retirement. According to Becker (1964 and 1967) this tendency is due to the following incentives for shifting from learning to earning activities as soon as possible: (1) With finite lifetimes, later investments produce returns over a shorter period; so total benefits are smaller. (2) To the extent that investments in human capital are profitable, their postponement reduces the present value of net gains. (3) A person's time is an important input in his investment, but the consequence of human capital accumulation is an increase in the value of his time; thus investments at later periods are more costly, because forgone earnings (per hour) increase. However, these incentives would be overridden in the special or temporary cases where productivity in learning grows as fast or faster than productivity in earning.".

Approximately 16 per cent of all employees in the Dutch hospitality industry is currently (September 2001) participating in one or more training courses tuned to the hospitality practice (see table 3.16). At the moment of surveying, almost a quarter of all full-time employees is following additional training, while for part-time employees this percentage amounts to half of it. This order applies to all submarkets and is observed to be independent of the SLM perspective. Therefore, both SLM classifications are supportive of hypothesis 8b. On the other hand, regarding hypothesis 8a empirical support is only perceived in the primary labour market. For example, approximately 20 per cent of all professional employees in the Dutch hospitality industry is currently attending additional training. Compared to the older age groups this participation particularly applies to professionals under 23 years. A similar conclusion holds for the craft market and when using the IEQ methodology.

Table 3.16: Current additional training in the Dutch hospitality industry by worker´s age, contractual working hours per week and labour market segment, September 2001

	Secondary workers	Primary zone (IEQ method)		Primary zone (PCS method)		Total
		Low	Up	Craft workers	Professional workers	
Age (%)						
Under 23 years	11.7	24.7	36.5	26.2	34.0	16.3
23-29 years	5.9	17.3	-	20.5	15.3	14.3
30+ years	11.5	17.4	-	18.0	14.1	15.9
Contractual working hours per week (%)						
Part-time	10.7	12.9	26.0	18.8	14.1	12.3
Full-time	18.8	23.3	43.5	20.3	28.1	24.5
Total (%)	10.9	18.5	31.5	20.1	19.7	15.8
N	142,600	143,400	19,500	111,000	51,900	305,500
n	598	498	75	388	185	1,171

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : Part-time = flexible working hours or contractually for at most 37 hours per week; full-time = 38+ working hours per week.

: - = Insufficient cell count or combination by definition not occurring.

: N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

The screening theory of Thurow (1975) is particularly associated with the concept of the internal labour market (see section 2.2). For entrance into the internal market,

accommodating the more alluring job positions, employees are figuratively put into a waiting room and every applicant is given a number of preference according to the expected potential productivity. As soon as an internal vacancy is present the most preferred employee in the waiting room is selected first. The position in the waiting room is supposed to be determined by relevant background variables such as the work history and the human capital stock of workers. In this framework, employers are likely to use the worker's accumulated human capital as a screening device to estimate, among other things, the flexibility, motivation and trainability of the candidates and the training costs to be borne. New employees in the internal labour market are assumed to be primarily selected for a career in the organization and not so much hired for the particular entry position. For the purpose of mounting the internal ladder additional training is usually regarded as a necessary condition. In addition to general training this particularly comes to the acquisition of firm specific skills. Therefore, the job competition theory predicts a positive relationship between the initial level of education and additional training activities of internal employees (see also Dekker, De Grip and Heijke (1995)).

Table 3.17: Completed additional training in the Dutch hospitality industry by worker's degree of initial schooling and labour market segment, September 2001

	Secondary workers	Primary zone (IEQ method)		Primary zone (PCS method)		Total
		Low	Up	Craft workers	Professional workers	
Educational level (%)						
Low	20.3	52.7	33.3	50.8	-	36.4
Intermediate	24.3	72.7	58.1	64.4	74.4	50.7
High	41.2	73.2	-	77.6	72.7	55.5
N	142,600	143,400	19,500	111,000	51,900	305,500
n	598	498	75	388	185	1,171

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : Educational level: low = LBO, VMBO and MAVO; intermediate = HAVO, VWO, MHS, apprentice system and other professional education at an intermediate level; high = HHS, university and other high level professional education.

: - = Insufficient cell count or combination by definition not occurring.

: N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

By contrast, in a neoclassical setting, the process of equalizing differences assumes the existence of opportunities for substitution between the initial education and additional training.

Hypothesis 9: Employees having completed a higher level of initial education enjoy more additional training than their 'lower level' colleagues (irrespective of the labour market segment).

In the Dutch hospitality industry a significantly positive correlation is observed between the workers' level of initial schooling and the completion of additional training (see table 3.17). In September 2001, nearly 46 per cent of all hospitality employees has completed one or more (clusters of) training courses tuned to the hospitality practice (see table 3.15). For the low level educated employees this amounts to 36 per cent and at a high level to approximately 56 per cent. In accordance with the presumed nature of the internal labour market in the Dutch hospitality industry (see section 3.3), this positive relationship also holds for secondary employees. Therefore, also *within* the secondary labour market (and other submarkets) less and more alluring job positions can be identified (justifying the expression labour ladder). Overall, hypothesis 9 is not rejected.

However, in addition to complementarity the empirical findings also seem to indicate that, at the same time, there is scope for substitution between initial and additional training. For example, nearly 78 per cent of the high level educated craft employees (by definition not being HHS (hotel management school)) has completed additional hospitality training. Depending on the intensity of this additional training it can be expected that some of these craft employees have climbed the labour ladder and are, so to speak, knocking on the professional door (despite not having the initial professional papers). For the other worker groups similar overtaking manoeuvres may be present. For example, by way of additional training some intermediate level professionals can have enlarged the quality of their human capital stock to such an extent that they are able to fill in a high level position in the hospitality industry.

3.6.4. Job mobility

On account of a less stable work relationship between employers and their staff, SLM expectations are that external labour mobility in the secondary labour market will relatively be larger than in the primary segment. Secondary employees are not likely to have a close bond with their present work, the firm and the industry in which they are employed. Compared to the lower tier of the primary labour market, a considerable amount of external labour mobility is also expected to be observed at the higher reaches of the primary spectrum (see section 2.3). Contrary to the secondary segment, at the top of the primary ladder, there is likely to be more vertical mobility, particularly promotion to 'a more comfortable chair'. In view of the higher industry commitment, relative to the bond with the present employer, professional employees, in a certain time period, are expected to show relatively more through-flow within the hospitality industry than entrance into this sector[45]. For secondary employees opposite expectations hold. Furthermore, as noted earlier, craft employees are expected to have, above all, a close bond with the present employer.

---

[45] A similar expectation holds when compared to the outflow out of the hospitality industry. However, with all hospitality employees being employed in September 2001 as the starting point for the present analysis, in this chapter outflow is not taken into consideration.

Hypothesis 10: (10a) Primary employees have a closer bond with their work, the present employer and the industry than their secondary colleagues. (10b) At the lower end of the primary ladder, above all, the relation with the present employer is tight and (10c) at its top the bond with the industry.

Hypothesis 11: (11a) External labour mobility has more bearing on secondary employees than on their primary fellow workers and zooming in, (11b) within the secondary segment the inflow is larger than the through-flow. Furthermore, (11c) professionals also show considerable external labour mobility, particularly switching employers within the industry.

Secondary employees in the Dutch hospitality industry show a significantly less tight bond with their present work than employees holding a primary position. Regarding the proposition *My work means a lot to me* 56 per cent of all secondary employees does respond affirmatively (see table 3.18). In the primary labour market this amounts to 85 per cent or more, irrespective of the SLM perspective.

The bond with the present employer is observed to be particularly strong for hospitality employees at the lower end of the primary ladder, regardless of the SLM approach. For example, approximately a fifth of all craft employees, in the previous year not having switched employers, is employed in the present firm for more than 10 years and 38 per cent over 5 years. For professional employees these percentages amount to 14 per cent and 26 per cent respectively. For craft employees (being immobile) the job tenure averages out at 6.7 years and for professionals at 4.9 years. Job tenure can also be regarded as a proxy for the intensity of firm specific training likely to increase the worker's attachment to a firm (Anderson, Butler and Sloan (1987, p. 584)). Using the IEQ segmentation method more or less similar observations hold. Comparing the different labour market segments, job tenure (for stayers) is observed to be smallest in the secondary segment, averaging out at 4.0 years.

The bond with the hospitality industry is particularly tight for employees being positioned at the top of the primary ladder. Again this observation applies to both SLM perspectives. For example, over 80 per cent of all professionals expects to be working in the hospitality industry 5 years or longer from now on. At the top of the IEQ primary ladder this expectation holds for 79 per cent of all job wealthy workers. In the lower tier primary labour market and, above all, in the secondary segment the corresponding percentages are significantly smaller. Furthermore, 53 per cent of all secondary employees is taking the view still to be employed in the hospitality industry for less than two years. In the primary market this amounts to 18 per cent for craft employees (IEQ low: 16 per cent) and 12 per cent for professionals (IEQ up: 12 per cent). These findings illustrate the insignificant bond of secondary employees with the hospitality industry. Summarizing, hypotheses 10a, 10b and 10c are not rejected, regardless of the SLM perspective.

Table 3.18: Some indicators of job mobility in the Dutch hospitality industry by labour market segment, September 2001

	Secondary workers	Primary zone (IEQ method)		Primary zone (PCS method)		Total
		Low	Up	Craft workers	Professional workers	
External mobility (%)	**58.7**	**50.1**	**56.9**	**51.5**	**49.7**	**54.5**
Inflow	42.3	21.5	27.8	27.7	10.4	31.5
Through-flow	16.4	28.6	29.2	23.8	39.3	23.0
Immobility (%)	**41.3**	**49.9**	**43.1**	**48.5**	**50.3**	**45.5**
Job tenure:						
≤ 2 years	43.6	29.3	45.2	31.2	30.9	36.4
3 - 5 years	41.7	33.8	41.9	30.7	43.3	37.7
6 - 10 years	7.8	15.8	3.2	16.1	11.3	11.7
11+ years	6.9	21.1	9.7	22.1	14.4	14.2
Average job tenure	*4.0 years*	*6.3 years*	*4.8 years*	*6.7 years*	*4.9 years*	*5.2 years*
Internal mobility (%)	8.1	19.0	22.2	19.2	19.8	14.1
Expected number of years employed in the hospitality industry from now on (%)						
Less than one year	22.4	9.8	8.8	11.5	6.8	15.8
1 to 2 years	31.0	6.0	2.9	6.0	4.9	17.5
2 to 5 years	29.9	18.9	8.8	23.0	6.8	23.5
5+ years	16.7	65.3	79.4	59.4	81.6	43.3
Work means a lot to me (%)	56	88	85	87	89	73
N	142,600	143,400	19,500	111,000	51,900	305,500
n	598	498	75	388	185	1,171

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : External mobility = all employees in September 2001 who in the previous year have entered the hospitality industry (inflow) or switched employers within this sector (through-flow). In this chapter the outflow out of the hospitality industry is not taken into account.

: Immobility = all employees who in the period September 2000 – September 2001 remained with the present employer.

: Internal mobility is defined as the situation in which the employee is employed at the present employer for a longer time period than in the present job position.

: The exact wording is as follows: Expected number of years employed in the hospitality industry from now on = *If you are currently working in the hospitality industry, how many years do you think still to be working in this branch of industry?*; work means a lot to me = *My work means a lot to me (yes/no).*

: N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

A high degree of external labour mobility is known to be characteristic of the Dutch hospitality industry. In September 2001, 55 per cent of all hospitality employees can be considered 'new blood' to the employer concerned. More specifically, 32 per cent of all employees in the previous year has entered the hospitality industry and 23 per cent switched employers within the industry. In the secondary labour market the external labour mobility is observed to be significantly larger than in the primary segment (hypothesis 11a: not rejected). Regarding the secondary external transitions the stress is observed to fall on entrance into the hospitality industry: 42 per cent of all secondary employees in the period September '2000-2001' has entered the hospitality industry as opposed to 16 per cent having switched hospitality employers (hypothesis 11b: not rejected). In the primary labour market, relative to the secondary segment, the inflow of workers is considerably smaller. Furthermore, almost 40 per cent of all professional employees has, in the previous year, switched employers within the hospitality industry. In comparison with the 'professional inflow' and the other submarkets this observation is supportive of hypothesis 11c.

In the Hospitality Employees Study, employees who in the previous year switched employers within the hospitality industry are also inquired after the three most important stimuli for this external transition. In this respect, 29 per cent of the professionals concerned does mention, among other things, the (expected) career prospects in the new job position. For craft employees and secondary workers this amounts to 18 and 9 per cent respectively. These empirical findings are in accordance with the SLM expectations, i.e. in the professional market, relative to the other segments, external labour mobility more frequently goes hand in hand with (expected) job advancement.

Another manifestation of labour mobility points to function mobility within the organization. Also in an internal setting, horizontal and vertical transitions can be distinguished. Horizontally the emphasis is on another position within the same organization pointing to a new chair of comparable height and vertically to promotion to a better chair. Comparatively, descending a few steps on the labour ladder is of less frequent occurrence (Hofman, Steijn and Van der Laan (1997)). Substantial additional training is usually considered to be a predictor of internal mobility (De Wolff, Luijkx and Kerkhofs (2002)). Therefore, we expect that intraorganizational mobility has more bearing on primary employees than on secondary workers.

Hypothesis 12: Primary employees show more internal job transitions than their secondary colleagues.

In September 2001, 14 per cent of all hospitality employees has in the present organization moved, at least once, to another job position (see table 3.18). In harmony with hypothesis 12

these internal transitions particularly apply to primary employees. Referencing upward internal mobility, 22 per cent of all hospitality employees expects to get promotion in the next two years. This form of expected job advancement particularly applies to the professional market (see chapter 8 for the necessary differentiations).

3.6.5. Underutilization

A fundamental point of difference between the neoclassical body of thought and SLM theory concerns the allocation process of workers on the labour ladder. In this context, human capital theory emphasizes differences in workers' proficiency as being the allocation basis. The accumulated human capital of workers, partly produced by way of education and work experience and partly determined by parenting and inherent talents, to a great extent determines the position being occupied on the labour ladder. On the other hand, SLM theory stresses the demand side of the labour market as the allocative source, i.e. employers and their selection mechanisms are decisive for the allocation of labour (see chapter 2). In a segmented labour market the distribution of workers over the different submarkets is considered to be independent of the human capital stock of workers (see, for example, Taubman and Wachter (1986, p. 1185) and Brouwer et al. (1992, p. 1)). SLM theory particularly assumes the existence of non-economic barriers to primary entry, by which some (groups of) workers having sufficient human capital (*able...*) and with the ambition (*...and willing*) to get a better job position are not given the opportunity to mount the labour ladder. This inefficient use of workers' capacities, also referred to as underemployment or underutilization, is traditionally associated with the dual labour market theory, by which some secondary employees, on account of these entry barriers, can not employ their primary skills in the appropriate labour market segment (Dickens and Lang (1985, p. 792)). In the job competition theory the situation of underutilization is particularly linked to the concept of the internal labour market. Employees having the highest number of preference in the waiting-room are selected first for a career within the organization and not so much for the particular entry position in the internal labour market (see section 2.2). In this framework, the initial level of education is, above all, associated with the necessary proficiency in the follow-up positions in the internal labour market (Dekker, De Grip and Heijke (1995, p. 24)). Consequently, at the lower end of the internal ladder underemployment is likely to be observed. If an internal worker, by means of additional training, is getting promotion, then this manifestation of underutilization is a temporary one.

Expectations are that at every step of the labour ladder and, therefore, in every labour market segment underutilization can be observed. By taking away certain non-economic barriers a hospitality worker, being able and willing, can possibly ascend a few steps. In this context, however, using the PCS classificatory scheme a worker will always remain in the initial segment (ceteris paribus), while following the IEQ methodology a lower-tier primary employee may cross over to the job wealthy top. In the SLM literature underemployment, due to the existence of social barriers to entry, is frequently associated with (statistical) discrimination on the part of the employer, the executive staff or more generally by those who control the points of entrance.

On account of the more direct relationship between the initial professional qualification (at an intermediate or high level) and the position held in the hospitality industry, expectations are that, compared to the other segments, professional employees to a lesser degree experience an inefficient use of their qualifications.

Hypothesis 13: (13a) Professional employees, relative to the other worker groups, to a lesser degree experience underutilization of their qualifications. (13b) Nevertheless, in all segments underemployment is present.

In September 2001, 55 per cent of all UWV employees in the Dutch hospitality industry is taking the view that one is having the right education for the present job position (see table 3.19). Conforming to hypothesis 13a this score turns out to be highest in the professional market (75 per cent). Approximately one third of all hospitality employees judges to have too high an education for the present job. In accordance with hypothesis 13b in all segments of the hospitality labour market underemployment is observed, irrespective of the SLM perspective. For example, 21 per cent of all professional employees is experiencing underutilization. At the top of the IEQ primary ladder this perception holds for 26 per cent of all job wealthy workers and can possibly, in part, be explained by their youthfulness (see section 3.6.2). Some job wealthy employees are likely to have the required productive skills to occupy a position (even) higher at the top of the primary ladder, but as yet are not given the opportunity to mount due to their relatively young age and, consequently, modest work experience. Indeed, underutilization of the initial level of education is observed to be negatively correlated with worker's age: 40 per cent of all hospitality employees under 23 years is taking the view to have too high an education for the current position, within the age group '23-29 years' this amounts to 34 per cent and 20 per cent for all workers being 30 years or older. These findings are possibly related to the traditional situation of underutilization at the lower reaches of the internal labour market. Therefore, in addition to, for example, discrimination owing to gender or complexion also other, in part economic, considerations on the part of the employer may end in (temporary) underemployment.

However, from the results of the Hospitality Employees Study it can not be deduced if discrimination is significant to hospitality employees who are experiencing underemployment. In the questionnaire employees are inquired after the occurrence of aggravating circumstances in their work, including the survey questions *At work, are people discriminated against because of their complexion* (idem *gender*)*?* At the industry level 3 per cent of all hospitality employees is taking the view that at work people are discriminated against on account of their colour and 4 per cent due to their gender. However, the phrasing of the corresponding survey questions leaves unanswered if the particular working condition is applying to the respondent. It is also not clear who the 'offender' is.

As noted, in addition to (statistical) discrimination on the part of the employer also other arguments for the presence of underemployment can be put forward. In addition to the considerations already mentioned it may also be possible that the allocation process is neoclassically oriented, but by which employers are not sufficiently recognizing the proficiency of some employees barred out of the appropriate segment. In this framework,

incomplete information can, among other things, be the result of workers insufficiently exhibiting their qualifications or employers making insufficient effort to uncover the real capacities of some of their employees. Still another possible source of underutilization constitutes the expected scarcity of alluring job positions in the primary labour market (Dickens and Lang (1985, p. 793)) and, if present, can be an indication of a bad link between education and the labour market, by which too many people have been educated for a position (high) on the primary ladder.

Table 3.19: Underutilization in the Dutch hospitality industry by labour market segment, September 2001

	Secondary workers	Primary zone (IEQ method)		Primary zone (PCS method)		Total
		Low	Up	Craft workers	Professional workers	
Education fitting in with work (%)						
Too high an education	44.8	19.4	26.4	20.0	21.2	31.8
Too low an education	11.9	15.8	11.1	20.4	4.1	13.7
The right education	43.3	64.8	62.5	59.6	74.6	54.5
N	142,600	143,400	19,500	111,000	51,900	305,500
n	598	498	75	388	185	1,171

Source	: "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).
Remarks	: The exact wording is as follows: education fitting in with work = *Within the scope of your work, do you have too high, too low or the right education?*
	: N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

Because of workers' social or financial lack of freedom underemployment can also be centred in certain parts of the Netherlands, notwithstanding a possible good connection between education and the labour market nationwide. Also the business cycle may have a significant effect on the extent of underutilization. For example, during an expansion period of the labour market downward displacement can result in underemployment of some higher level worker groups. Finally, we mention the occurrence of a 'personality clash' as a possible source for underutilization. In this context not so much discrimination on account of gender or complexion constitutes the prevailing cause of underemployment, but more the actual practice of two human beings, in the present context being the employee and the gatekeeper, in the work situation (not) getting along with each other.

The empirical findings in table 3.19 also show a relatively high percentage of secondary hospitality employees experiencing underemployment. In view of the nature of the

Allemansfuncties and the relative overrepresentation of students and schoolgoing youngsters holding a secondary position (see table 3.14) this perception of underutilization is not surprising and has little to do with the underemployment issue as discussed in SLM theory.

Table 3.20: Underutilization and some work attitudes in the Dutch hospitality industry by labour market segment, September 2001

	Secondary workers	Primary zone (IEQ method)		Primary zone (PCS method)		Total
		Low	Up	Craft workers	Professional workers	
Report mark *job content*	**7.5**	**8.0**	**7.7**	**7.9**	**8.2**	**7.7**
Too high an education	6.9	6.6	8.0	6.9	6.7	6.9
Report mark *autonomy*	**5.4**	**6.6**	**6.6**	**6.2**	**7.4**	**6.1**
Too high an education	5.3	6.4	5.7	5.9	7.1	5.6
Report mark *colleagues and management*	**7.7**	**6.9**	**7.1**	**6.9**	**6.9**	**7.3**
Too high an education	7.3	6.2	6.5	6.3	6.1	6.9
Report mark *work commitment*	**8.3**	**9.4**	**9.2**	**9.4**	**9.4**	**8.9**
Too high an education	7.9	9.0	9.1	9.0	8.9	8.3
Direct management is 'all ears' (%)	**77.7**	**69.5**	**68.1**	**68.5**	**71.1**	**73.2**
Too high an education	74.3	62.5	57.9	59.8	65.9	69.9
Overall job satisfaction (%)	**55.1**	**48.8**	**60.3**	**51.2**	**47.9**	**52.5**
Too high an education	51.7	33.0	57.9	40.2	29.3	46.8
N	142,600	143,400	19,500	111,000	51,900	305,500
n	598	498	75	388	185	1,171

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : The report mark regarding *job content* is computed as the average positive score − first per employee, then averaged out over the corresponding worker group – of the responses to the following survey questions: (1) *Do you experience sufficient variation in your work?*, (2) *Is your work mostly absorbing?*, (3) *Do you mostly take pleasure in your work?* and (4) *Do you think your work being too simple?* It is assumed that affirmative answers on the first three questions contribute to a positive work attitude, while for question (4) this conclusion holds in the event of a negative answer. In a similar way the other report marks are computed. Report mark *autonomy*: (1) *If you think it is necessary, can you pause in your work?*, (2) *Are you able to adjust the speed of work?*,

(3) *Can you decide yourself when to perform a task?* (4) *Do you decide yourself the order of work?* and (5) *Do you have influence on the composition of the work schedule?*; report mark *colleagues and management*: (1) *Do you experience good direct leadership?*, (2) *Does management have a correct impression of you in your work?*, (3) *Does direct management sufficiently take into consideration what you are saying?* (4) *Is management doing sufficiently within the scope of your career?* (5) *Do you think the atmosphere at work being well?* and (6) *Do you at work frequently get annoyed about others?*; report mark *work commitment*: (1) *I find it important work passing of well*, (2) *My work means a lot to me* and (3) *It is worth the effort trying to do my work as good as possible*.

: The variable *Direct management is 'all ears'* is part of the report mark *colleagues and management* and points to the percentage of employees scoring affirmatively on the survey question *Does management sufficiently take into consideration what you are saying?*

: Overall job satisfaction refers to the percentage of employees taking the view to be *well* off with their present work.

: N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

In the dual labour market theory also particular attention is paid to the endogeneity of work attitudes, particularly because of occupying a less alluring position at the lower reaches of the labour ladder (see section 2.3). By way of developing an antiwork attitude, for some secondary employees who are initially having sufficient primary proficiency, the probability of entrance into the primary labour market is, as times go by, likely to become increasingly smaller. In this way the persistent confinement to the secondary segment can partly be ascribed to altered worker's behaviour and not to, for example, particular social barriers to entry; or as expressed in section 2.3:

"Especially for the willing *and* able one sustained confinement to 'bad' jobs may be called an 'ugly' employment situation. As times go by this bond with the secondary segment may be referred to as an employment situation of 'the good, the bad and the ugly', in which the allocation of labour is inefficient".

In all identified submarkets we observe underutilization and expectations are that this work situation generally has a negative effect on work attitudes, particularly in the primary labour market.

Hypothesis 14: (14a) Underutilization is negatively correlated with work attitudes. (14b) This link particularly holds for primary employees.

With respect to certain working conditions such as the job content, freedom in work and the relation with direct management, hospitality employees who experience underutilization are scoring significantly below average (see table 3.20). This empirical finding applies to all submarkets, regardless of the SLM perspective (not counting exceptions). Also conforming to expectations, in case of underemployment less positive work attitudes generally have more bearing on hospitality employees in the primary market than on secondary workers. This observation is likely to be linked with the nature of secondary work in the hospitality industry being, above all, temporary appointments held by youngsters for the purpose of

earning some money. Using both SLM perspectives, hypotheses 14a and 14b are not rejected.

In case of underemployment it is observed that the commitment to work is scoring less favourably. This observation holds for all identified segments and both SLM methodologies. In SLM theory underemployment is particularly associated with social barriers to entry. In this context, from the gatekeeper's perspective, barred employees are more likely to be looked upon as a replaceable number than being an esteemed member. For this likelihood several reasons can be put forward, including, as mentioned, discrimination and a personality clash. In view of the answers to the proposition *Does direct management sufficiently take into consideration what you are saying?* this SLM expectation is empirically validated and particularly holding for primary employees.

Not surprisingly, overall job contentment is observed to be negatively correlated with experienced underutilization. For example, 52 per cent of all hospitality employees is taking the view to be well off with their present work, scoring 47 per cent in case of underemployment. This negative correlation particularly applies to professional and craft employees. For example, 47 per cent of all professional employees does acknowledge overall job satisfaction, but given underemployment this percentage falls down to 29 per cent. It is eye-catching that at the top of the IEQ primary ladder underemployment is barely taking away from overall job satisfaction. Conforming to expectations, underutilization is positively correlated with hospitality employees searching for another job position 'beyond the walls of the present organization'. In the previous year, 29 per cent of all (September 2001) hospitality employees has been in search for another position not with the present employer. Subject to underemployment this amounts to 35 per cent. A positive relationship between underutilization and job search particularly applies to professional employees. In the previous year, 63 per cent of all professionals experiencing underemployment has applied for a job position not with the present employer and 31 per cent is, at this moment, searching for other work. Some of these professional employees aspire to a job outside the domain of the traditional hospitality industry. Therefore, allocation inefficiency may possibly end in a serious loss of proficiency to the present employer and the hospitality industry. The extent to which underutilization presents a significant predictor of overall job satisfaction, job search and employer mobility in a multivariate setting is investigated in chapter 8.

3.7. Summary, conclusions and discussion

The first step in empirical SLM studies traditionally involves the identification of relevant labour market segments (see chapter 1, step 1 in figure 1.1). Using the UWV data set (see section 3.2), this chapter elaborates on two classificatory schemes for the Dutch hospitality industry. These are two different SLM approaches to the allocation of hospitality employees on the primary labour market. The starting point for the SLM investigation is formed in each approach by the *equal* defining of the secondary labour market. In particular, the secondary segment in the Dutch hospitality industry is identified with all employees who in September 2001 indicate that their job status within this branch of industry is a secondary job and

furthermore that they have not completed any initial professional education at an intermediate or high level. This definition is in line with the traditional view of the secondary labour market where jobs are offered for which job requirements are minimal and for which hardly any training period is involved (see also Dekker, De Grip and Heijke (1995)). In the SLM literature these secondary jobs are frequently referred to as *Jedermanns Qualifikation* (Lutz and Sengenberger (1974)); a typification in Dutch is *Allemansfunctie*.

Every hospitality establishment in the Netherlands may be considered as an internal labour market. Given the general binding nature of the Hospitality Industry CAO ("Horeca CAO", collective labour agreement, Landelijke Bedrijfscommissie voor het Horecabedrijf (2000)), the secondary labour market in the Dutch hospitality industry may be regarded as a 'secondary' internal labour market (Doeringer and Piore (1971), see also chapter 2), since all employees (and employers) in this branch of industry, primary and secondary, are tied to the same institutional rules as set out in the Hospitality Industry CAO.

The IEQ segmentation method – The first and as far as we are aware new segmentation technique can be interpreted as *the SLM perspective of the employee* on the labour market. This approach heavily focuses on the perception of employees regarding their position on the labour ladder. Employees are themselves presumed to be the best qualified to judge the various aspects of their work, rather than the employer, researcher or policy maker; i.e. job wealth or job poverty is not a state of being, but a state of mind. This work perception is determined by both monetary and non-monetary working conditions. Non-economic aspects of work include, for example, the work pace, working hours, physical workload, freedom in work, management style, unwritten house rules and onerous situations (discrimination, aggressive guests, etc.). For the identification of the labour market position of primary employees in the Dutch hospitality industry, we use a *labour market variant* of the Income Evaluation Question (IEQ, Van Praag (1971)), which can be traced back to the LPL methodology in the poverty literature (see section 3.4). The LPL approach belongs in the class of subjective poverty concepts, by which the poverty issue identified in a country or region is also to a large degree a reflection of the poverty experienced by people in society (see, for example, Flik and Van Praag (1991) and Van Praag, Bispo and Stam (1993)). The labour market variant of the IEQ in the Hospitality Employees Study comprises a total of six attitude questions that illuminate the way in which each hospitality worker values different net monthly wages and consequently also his own earnings. In particular, the IEQ answers from each employee result in six different net monthly wages that correspond with six verbal qualifications ranging from *very bad, bad, insufficient, sufficient* and *good* to *very good*. The IEQ answers form the basis for estimating individual income thresholds serving as segmentation lines in the labour market and generally depend on the personal characteristics and circumstances of the hospitality employee concerned. These critical income levels are used here especially to distinguish the *job wealthy workers* within the primary labour market (upper tier) from the lower tier primary employees.

The SLM theory presumes that the level of earnings is positively correlated with the quality of the non-monetary working conditions (see chapter 2). It is clear that the attractiveness of the total job package *experienced* by employees need not match this SLM prediction. With

regard to earnings, employees may be quite high up the labour ladder and yet still experience significant non-monetary restrictions in their work – for example, insufficient freedom in work or irregular working hours that prevent a good combination between work and private matters – so that one can talk of lack of job wealth (and possibly job poverty). Although not always satisfactory, it is assumed with the one-dimensional LPL methodology that the level of net individual earnings and their perceived sufficiency reflect the total work experience. If overall job satisfaction is taken into consideration, then this assumption is observed to have empirical validity. The LPL methodology as a segmentation approach to distinguish the top from the bottom of the primary labour market in the Dutch hospitality industry involves a high degree of internal consistency: approximately 60 per cent of all job wealthy workers is, all things considered, content with their present work compared to 49 per cent in the lower tier primary labour market (see table 3.11).

In particular, the position of the IEQ segmentation lines in the primary labour market is determined by three factors. One can regard the choice of the welfare threshold ω on the utility hill (Van Praag (1991)) as the first sphere of influence. To shed light on the sensitivity of this choice, this chapter develops different ω variants. Given the empirical findings differentiated according to business group, department and occupation in the Dutch hospitality industry (see tables 3.4 and 3.5) and data availability, a figure of $\omega=65\%$ is assumed for the further analysis. In this way the top end of the primary labour market is operationalised by all primary employees who experience their net monthly wage on the welfare ladder as amply sufficient or better. For primary employees in the 20-24 years age group, this means, for example, that the *job wealth line* $\hat{y}_\omega$ in September 2001 is estimated at €1,100 net per month: employees with a net monthly wage of €1,100 or more are identified as job wealthy workers and those below that earnings threshold as workers at the lower end of the primary spectrum. Other income thresholds apply to different primary age groups (see table 3.3).

The starting point for making the welfare ladder operational is the Equal Quantile Assumption (EQA), referencing the assumption that different respondents ascribe more or less the same meaning to the row of verbal labels in the IEQ (Van Praag (1991)). The empirical findings in section 3.4.3 show that the EQA also has empirical validity for employees in the Dutch hospitality industry.

The delineation of both primary submarkets is secondly determined by the estimation results of the income evaluation equation. In this regression model the average income evaluation $\hat{\mu}_i$ (referencing the mean logarithmic IEQ answers of employee i) is explained by individual earnings and personal characteristics and circumstances (see equation (3.4)). The welfare parameter $\hat{\mu}_i$ is known in the literature as the *need parameter*, whereby $\exp(\hat{\mu}_i)$ in this SLM investigation represents the net wages that a hospitality employee considers necessary to attain a welfare position exactly half-way up the utility hill (=0.5). A higher value for $\hat{\mu}_i$ means that an employee needs higher wages to maintain the same position on the welfare ladder. The estimated Individual Welfare Function of Income (WFI, Van Praag (1968, 1971) and Van Praag and Kapteyn (1973)) for certain occupational groups in the kitchen reveals, for example, in line with expectations, that the average income evaluation is

positioned at a higher level in line with the higher classification of the relevant occupation on the institutional income ladder (see figure 3.1). Kitchen managers and (sous) chefs require a higher net monthly wage than, for example, cooks to reach the same welfare level. In the poverty literature empirical studies reveal that individual characteristics and circumstances also weigh heavily in explaining the average income evaluation (see, for example, Van Praag, Bispo and Stam (1993)). This explanatory power also applies within the context of the labour market in the Dutch hospitality industry. Linear regression shows that current net earnings and the age of the hospitality employee are the two most significant factors to explain the average income evaluation. Other predictors such as family size, the employee's educational level and the region the employee lives in (as an indicator of, for example, differences in sales prices) do not result in additional explanatory power. The *preference drift* is significantly estimated at 0.83 (see equation (3.9)): hospitality employees will initially experience an improvement in income position as a climb up the utility hill (given the personal WFI), but over time the experience of this welfare improvement will be nullified to a significant degree since employees will adjust their standards to their improved income situation (WFI shifts to the right, ceteris paribus).

Given the various life phases that people traditionally pass through then, as regards the age of the respondent, a positive link with the average income evaluation is expected up to a certain age, beyond which living requirements will gradually decrease and less income is needed to achieve a particular welfare level. This process of rising and falling needs is also empirically validated for employees in the Dutch hospitality industry (ceteris paribus). The turning point is estimated to be the age of 41. In Van Praag, Bispo and Stam (1993, p. 201) the saturation point in 1991 for the Dutch society as a whole is estimated at 54 years. An age of around 40 years can be generally associated with a stage of life in which a combination of tasks plays a prominent role in daily life. An example of this would be the combination of care for one's own job in the labour market (working and learning) with the care for still relatively young children in the family and caring for the home. This image of the modern logistical household in which the often full days of the various household members have to be continually coordinated with each other appears also to apply to employees in the Dutch hospitality industry. The Hospitality Employees Study includes several indirect references to this. Of all hospitality employees in the 40-44 years age group, for example, 74 per cent cohabits or is married. Of these pairs, 48 per cent has children living at home in the 5-12 years age group and 54 per cent has children living at home older than 12 years (partial overlap with children in the 5-12 years age group). Furthermore, 61 per cent of all employees in the 40-44 years age group is not primarily responsible for the household income and are therefore probably secondary earners. Given, inter alia, the cost of children living at home and attending school, household expenses and the costs related to free time and mobility, it is interesting to observe that hospitality employees in the primary labour market themselves have the view that already from the age of 41 their needs begin to decrease. This decrease, however, can be described as gradual, since the net monthly wage of primary hospitality employees in the 40-44 years age group has to average at least €2,410 in order to be identified as job wealthy workers, whilst for employees in the 45-49 years age group, this income threshold is (only) €100 lower (see table 3.3). Only from age 50 onwards significantly less income is required to maintain the same position on the welfare ladder.

The third determining factor for demarcating both primary segments is the dispersion in the logarithmic IEQ answers. This parameter is known in the literature as the *welfare sensitivity parameter* $\hat{\sigma}_i^2$ and in this research indicates the degree to which individual earnings of a hospitality employee need to increase to rise one step further up the welfare ladder. A higher value of $\hat{\sigma}_i^2$ means greater IEQ dispersion and thereby more probability mass at the end of the personal income distribution (WFI), by which relatively more additional earnings are needed to attain a higher position on the welfare ladder. For example, figure 3.1 shows that the empirical WFI of kitchen assistants in the Dutch hospitality industry is comparatively less steep than the estimated personal income distribution of cooks, chefs and kitchen managers. In line with many empirical poverty studies, personal characteristics and circumstances of the hospitality employee are not significant predictors of this welfare parameter and accordingly for the estimation of the different job wealth lines this parameter is exogenously equated to the sample mean (see equation (3.7)).

Due to the dependence of the parameter estimators in the income evaluation equation, the IEQ method leads to stochastic segmentation lines. This makes it possible to calculate a corresponding confidence interval for the population segmentation lines. The empirical findings in section 3.4.3 show that between three and four per cent of all hospitality employees on the primary labour ladder receives a net monthly income within the relevant 95% confidence interval. For this relatively small group of primary employees it is unclear whether they should be regarded as job wealthy workers or as workers in the lower tier primary labour market, but close to experiencing job wealth.

The PCS segmentation method – In the second and more traditional dichotomization of the primary labour market in the Dutch hospitality industry the upper tier is identified with all employees having completed an initial professional education at an intermediate or high level. The lower tier of the primary spectrum is occupied by all employees who in September 2001 state that their job in the hospitality industry is a main job and who do not have any initial professional qualification (again at an intermediate or high level). The identification of a primary submarket in which professional employees are strongly represented is a practice that is often applied to empirical SLM investigations (see, for example, Osterman (1975), Anderson, Butler and Sloan (1987), Van Ophem (1987), Dekker, De Grip and Heijke (1995) and De Wit (1996)). A tripartition of the hospitality labour market into a secondary segment of *Allemansfuncties* and a primary segment with the professional market at the top and the craft market at the bottom in this book is referred to as the PCS segmentation method and may be considered as *the SLM perspective of the employer* towards the labour market. Within this vision, segmentation of labour may be understood from the desired optimum mix of labour supply qualities stemming from the efforts of the employer to create an efficient, effective and sustained business undertaking. Consequently, the wealth in human capital of employees, in terms of professional training and industry experience, can be regarded as two important dimensions in the segmentation process (see also De Wit (1996)). Despite the assumed limited significance of the said human capital indicators for an adequate filling of jobs, secondary jobs in the Dutch hospitality industry do require a certain feel for the work involved, as well as

communications skills, especially in the front performance. The designation of these jobs as *Jedermanns Qualifikation* or *Allemansfunctie* therefore perhaps requires some nuancing.

The composition of the IEQ and PCS segments – In either SLM approach, the secondary labour market in the Dutch hospitality industry is identically defined and in September 2001 being occupied by 142,600 employees, equivalent to 47 per cent of all hospitality employees on the payroll (see table 3.4). Secondary jobs are perceived to be above average in number in the cafe sector (61 per cent) and the fast food sector (58 per cent), but below average in number in the hotel sector (29 per cent); the restaurant sector lies in between (43 per cent). In line with these differences between the business groups, jobs in the secondary labour market are relatively prevalent in service and less prevalent in reception and management (see table 3.5). The kitchen is above average associated with the primary labour market; housekeeping (including general service) with the secondary segment.

Given ω=65% as our choice for the welfare threshold, 6 per cent of all UWV employees in the Dutch hospitality industry is identified as a job wealthy worker (19,500 employees) and consequently 47 per cent being employed in the IEQ lower tier primary labour market, virtually as many as in the secondary segment. Job wealth is identified as above average in the restaurant sector (8 per cent) and the hotel sector (7 per cent) and below average in the cafe sector (4 per cent). Job wealthy employees are more than averagely employed in the kitchen and in management. When the results per department are differentiated according to occupation, then the image of the various submarkets is more nuanced. For (sous) chefs and kitchen managers as well as in housekeeping and general service no job wealth is identified at all. However, for most occupations there is no element of exclusivity. Despite the emphasis on secondary jobs, the IEQ method also identifies kitchen assistants at the top end of the primary labour market: 4 per cent of all job wealthy employees are kitchen assistants. In service, bartenders are above average associated with the secondary labour market as well as with the experience of job wealth. These examples illustrate that in order to establish job wealth, net earnings alone are not enough. The experienced sufficiency of these earnings is also an important criterion here. The findings therefore support the empirical plausibility of the dual labour market perspective, by which the fortunes of hospitality work are job related and not only determined by, for example, the business group in which a person is employed. Not all cooks in the restaurant sector or, for example, receptionists in the hotel sector experience the same monetary and non-monetary working conditions. As indicated, the IEQ segmentation method is coupled with a large degree of internal consistency: the position on the primary labour ladder is positively correlated with overall job satisfaction.

The PCS segmentation method identifies within the primary labour market 51,900 professional employees and 110,100 craft employees (see table 3.8). Given ω=65% as the welfare threshold, then a significant part of all professional employees belongs by definition to the IEQ lower tier primary labour market. In September 2001 only 14 per cent of all professionals is also a job wealthy worker (see table 3.10). An initial professional certification at an intermediate or high level is positively correlated with firm size. Approximately 30 per cent of all hotel employees is employed in the professional market. In the fast food sector and the cafe sector this is significantly smaller (see table 3.8).

Approximately half of all professional employees is engaged in the kitchen as opposed to 26 per cent of all craft workers and 19 per cent of all secondary employees. In service this order is reversed. As noted, for reception and management the emphasis is on jobs in the primary labour market. Cooks, (sous) chefs and kitchen managers are examples of occupations that are strongly represented in the professional market. As noted, for none of these more than 9,000 professionals is job wealth established. This also applies to the relatively small group of professionals in household and general service. However, using the PCS segmentation method, as with the IEQ method, there is mostly no element of exclusivity. For example, applying the PCS method too, there are kitchen assistants who are identified at the top end of the primary labour market. In contrast to the experienced element of job wealth using the IEQ method, this working situation here points possibly to underutilization of the qualification level: employees with an initial professional education at an intermediate or high level being employed as kitchen assistants.

14 hypotheses – In general, the allocation picture of hospitality employees across the different labour market segments, differentiated according to business group, department and occupation, is in the case of both segmentation methods to a great extent consistent with the SLM predictions. To research, inter alia, the validity (appropriateness, quality) of the created segments further (see chapter 1, step 2 in figure 1.1), in section 3.6 some hypotheses are formulated and explored using the bivariate approach. In later chapters some of these (and other) hypotheses are tested in a multivariate setting.

Hypothesis 1 – Considering job characteristics such as hourly wages, job security, the number and flexibility of working hours and some aspects concerning job content, it can be concluded that the *Allemansfuncties* in the Dutch hospitality industry are less SLM attractive than primary jobs (see table 3.11). Hypotheses 1a, 1b, 1c and 1d are not rejected (in either segmentation approach). Notwithstanding less SLM allure for these job aspects, secondary employees are distinguished by higher than average overall job satisfaction. It is expected that job contentment in the secondary labour market is especially due to the opportunities for these employees to be able to adequately combine a job in the labour market with tasks in the private sphere, such as attending school and childcare. The emphasis on small part-time jobs and flexible working hours are examples of secondary working conditions that stimulate these opportunities to combine the two. This also applies to the minimal job requirements in the secondary segment. The mental workload in the secondary labour market is relatively low: approximately 30 per cent of all secondary employees has the view that the work to be done is very exacting mentally compared to 55 to 60 per cent of workers in the primary labour market. It is also noteworthy that secondary employees have a greater than average influence on the composition of the work schedule (see table 3.12). This influence also creates room to combine tasks and possibly contributes positively to overall job satisfaction.

Hypothesis 2 – As noted, the IEQ segmentation method leads to an internally consistent division of the primary labour market. There is no internal consistency identified within the primary labour market applying the PCS segmentation method (see table 3.11). On the assumption that a view of overall job contentment includes a valuation of both monetary and

non-monetary working conditions, one can conclude that hypothesis 2 is not rejected using the IEQ method, but is rejected using the PCS method. However, when a number of individual job characteristics are considered, then the conclusions are not unequivocal. With regard to hourly wages and the type of contract of employment, a position at the top of the primary labour market is not linked with greater job allure compared to employment in the lower tier primary market. Using both segmentation methods, hypotheses 2a and 2b are rejected. Both approaches do find empirical support for hypothesis 2d concerning some aspects relating to job content: a (somewhat) higher proportion of hospitality workers at the top end of the primary segment than their colleagues at the bottom end is of the opinion that their work offers sufficient variation, is mostly absorbing and more often requires that they learn new things in their work. As regards working hours the two segmentation methods lead to different conclusions. Professional employees have in significantly greater proportions a full-time job than craft workers and have less than average the experience of flexible working hours: the PCS method does not reject hypothesis 2c. For job wealthy workers is this picture of working hours the reverse, with relatively greater emphasis on part-time work and flexible working hours: the IEQ method results in the rejection of hypothesis 2c. Professional employees actually work an average of 38 hours per week compared to 30 hours worked by job wealthy workers.

Hypothesis 3 – In line with the segmentation theory, freedom in work in the Dutch hospitality industry is positively correlated with the initial professional qualification of workers. In the context of the work process, professionals have more freedoms than craft employees, whilst the latter worker group has greater freedoms in work than secondary employees (see table 3.12). Using the PCS segmentation method, hypotheses 3a and 3b are not rejected. Conversely, the IEQ method does not lead to a division of the primary labour market with averagely significant differences in freedoms in work. Using the IEQ method hypothesis 3a is not rejected, hypothesis 3b is. Naturally, the empirical findings are more nuanced when the freedoms in specific aspects of the work process are scrutinized. For example, of all hospitality employees 73 per cent is able to influence the composition of the work schedule. In contrast to SLM expectations, this percentage is above average in the secondary segment (78 per cent).

Hypothesis 4 – Characteristic of working in the hospitality industry is the degree to which employees must remain on their feet for long periods at a time. Consistent with the SLM predictions, this work situation applies to an above average degree to secondary employees (see table 3.13) and has a positive relationship with the relatively strong representation of serving staff and kitchen assistants in the secondary segment. However, considering other aspects of the physical workload secondary employees score more positively than their primary colleagues. This conclusion applies, for example, to the frequent requirement to lift or carry (very) heavy loads during work and to working in often uncomfortable working positions or in narrow workrooms. Furthermore, regarding mental workload, secondary workers score more positively than primary employees. As noted, this applies to experienced mental workload in general and to, for example, the experience of pressure at work in particular. There is no overwhelming empirical support for hypothesis 4. Of note is the degree to which professional employees are involved with specific aspects of physical

workload: almost 70 per cent of all professionals has the view that they are often required to lift heavy loads of over 5 kilos compared to approximately 50 per cent for both craft and job wealthy workers. In this comparison, professional employees must also be significantly more often on their feet uninterruptedly and handle weights over 25 kilos. Using the IEQ segmentation method, we observe job wealthy workers experiencing less physical workload than their lower tier primary colleagues.

Hypothesis 5 – Consistent with the SLM expectations, men are relatively strongly represented in the primary labour market and female workers in the secondary segment. Applying either segmentation method, the proportion of males is largest at the top of the primary spectrum. Almost 70 per cent of all professional employees is a man and amongst job wealthy workers this figure is approximately 60 per cent (see table 3.14). In the secondary segment almost 60 per cent is a female worker. Both SLM perspectives support the empirical validity of hypotheses 5a and 5b. These findings are likely to be connected, inter alia, with the allure of the secondary labour market for females in order that they can combine a flexible job with household tasks. For men, we expect that this allure applies mainly to a job on the primary labour ladder where investments in human capital can be converted into a better job position. In this way, in the case of males, alongside personal development a relatively strong bond with the labour market also provides better for fulfilling the responsibilities relating to household income. Due to the differences in binding with the labour market the employer's side can also be expected to hold proportionately more primary jobs open for men than for women. Alongside economic considerations, the SLM literature often also points out the underrepresentation of females on the primary labour ladder as a consequence of discrimination.

Hypothesis 6 – In line with the segmentation theory, the secondary labour market in the Dutch hospitality industry also has a relatively strong allure for young people. In the secondary segment, 71 per cent of all employees is under 23 years compared to 45 per cent at the industry level (see table 3.14). Hypothesis 6a is not rejected. Considering the completed initial educational level in September 2001, the expected picture is supported by the relatively many young people in the secondary labour market who, in addition to their current educational studies wish or feel the need to earn money in the labour market. Over 30 per cent of all craft employees is aged 40+ compared to approximately 10 per cent in both the professional and secondary segment. The age of secondary employees in the Dutch hospitality industry averages 23 years, for professionals 28 years and for craft employees 34 years. Hypothesis 6b is not rejected. For professional services in the Dutch hospitality industry the relative underrepresentation of professionals aged 40+ years possibly is a policy point to focus on. A lack of 'counter-balance' here may put pressure on the continuity of the business undertaking. A counter-balance could be the completed additional schooling of craft employees, the contracting out of professional services and the contribution of the professional proficiency of the employer. Using the IEQ segmentation method it is striking how job wealth ties in with youthfulness: as in the secondary segment, 71 per cent of all job wealthy workers is under 23 years. The age of job wealthy workers averages 22 years.

Hypothesis 7 – In adapting the quality of labour supply to the constantly changing market conditions, we expect that especially primary employees are offered additional training. Secondary labour is particularly deployed to stimulate the numerical flexibility of the organization. We further expect that the primary bond of professional employees with the hospitality industry and the relatively strong organizational commitment of craft employees are linked with a greater amount of additional training for the latter worker group. Consistent with the SLM predictions, secondary employees in the Dutch hospitality industry score below average for all distinguished forms of completed additional training tuned to the hospitality practice (see table 3.15). Summarizing, 25 per cent of all secondary employees has completed one or more training courses (averaging 1.8 (clusters of) courses). For craft employees this is 58 per cent (2.4 courses) and for professionals 74 per cent (2.6 courses). Hypothesis 7a is not rejected, hypothesis 7b is.

Hypothesis 8 – Since additional training often teaches general and specific skills, expectations are that employers will themselves pay a large part of the direct costs of most courses. In view of a shorter return period, we therefore expect that less additional training is undertaken by workers in the older age groups. Larger opportunity costs are also likely to play a role here. In September 2001, approximately 20 per cent of all professionals is following additional hospitality training (see table 3.16). This participation is above average for professional employees under 23 years of age and below average for the older age groups. The same conclusion applies to craft employees and to both IEQ primary segments. Summarizing, we find empirical support for hypothesis 8a in the primary market, but not in the secondary segment. In the case of all submarkets (IEQ and PCS), full-time employees currently enjoy additional training more often than part-time workers. This finding, too, is associated with a longer return period, in the context here of longer working hours per week. Neither segmentation method rejects hypothesis 8b. It is noteworthy that current additional training is especially linked to job wealth and possibly forms one of the sources of the observed internal consistency.

Hypothesis 9 – In accordance with the screening theory, additional training in the Dutch hospitality industry is positively correlated with the initial educational level of workers. In September 2001, 46 per cent of all hospitality employees has completed one or more training courses tuned to the hospitality practice. For employees with an initial low educational level reached this is 36 per cent, with an intermediate level 51 per cent and with a high level 56 per cent (see table 3.17). This order applies to most labour market segments. Both segmentation methods provide empirical support for hypothesis 9. However, in accordance with the neoclassical theory there exists at the same time the impression that there is also room within the Dutch hospitality industry for substitution between initial and additional schooling. For example, of all craft employees 58 per cent has completed one or more hospitality courses, a figure being as much as 78 per cent for craft workers with an initial high level of education (by definition not hospitality oriented). Depending on the additional human capital acquired, it is conceivable that some of these lower tier primary employees are, so to speak, on the verge of professional status. Such inroads may also be imagined within the professional market where workers with an initial intermediate

professional certification via substantial additional training are perhaps able over time to fill a high-level position.

Hypothesis 10 – Compared with their primary colleagues, secondary employees in the Dutch hospitality industry have significantly fewer ties to their work, the organization and the industry in which they work (see table 3.18). Also consistent with the SLM predictions is the observation that organizational commitment is strong especially amongst lower tier primary employees. This finding applies to both segmentation methods. The bond with the hospitality industry is the strongest for upper tier primary employees. This finding too is in harmony with the segmentation theory and applies to both SLM approaches. Hypotheses 10a, 10b and 10c are not rejected.

Hypothesis 11 – External labour mobility is a characteristic of the Dutch hospitality industry. Consistent with the SLM expectations, external mobility applies relatively more to secondary employees than to the more stable primary worker group (see table 3.18). The emphasis here lies on the inflow into the hospitality industry. Through-flow within this branch of industry is above all observed in the professional market. These observations support the empirical validity of hypotheses 11a, 11b and 11c.

Hypothesis 12 – Conforming to SLM predictions, internal job transitions in the Dutch hospitality industry apply relatively more to primary employees than to employees in the secondary segment (see table 3.18). Hypothesis 12 is not rejected.

Hypothesis 13 – In September 2001, 55 per cent of all hospitality employees has the view that they have just the right education for their present work (see table 3.19). In line with the direct relationship between the initial professional qualification and the corresponding job requirements, this percentage is by far the highest (75 per cent) in the professional market: hypothesis 13a is not rejected. Over 30 per cent of all hospitality employees has the view that they are too highly educated for the present job. Supporting hypothesis 13b, underutilization is identified in all submarkets (IEQ and PCS). Within the primary market it is notable that underutilization is comparatively prevalent in the case of job wealth: 26 per cent of all job wealthy workers does experience underutilization compared to 21 per cent in the professional market. The UWV data set does not enable us to identify the reasons for the underutilization perceived. Theoretically, several arguments could be put forward as an explanation. In addition to discrimination on the part of the employer, which is often emphasised in the SLM literature, other factors include, for example, the scarcity of better jobs in the primary labour market and as an extension to that a possible poor connection between education and the labour market. Underutilization can also be caused by employees being socially or financially tied to a particular region. Employees may also themselves consciously choose a job whose requirements fall below their educational level, since not all workers have the same level of ambition. Lastly, we mention the business cycle as a possible source for underutilization. An expansion period of the labour market can lead to the situation whereby employers for certain jobs prefer higher educated employees, whereas the job requirements are at a lower level. This process of downward displacement then leads to some employees underutilizing their qualification level.

Hypothesis 14 – In line with the dual labour market theory, underutilization of the qualification level in the Dutch hospitality industry is generally coupled with a less positive work attitude (see table 3.20). In general, this finding applies to all submarkets (IEQ and PCS). Hypothesis 14a is not rejected. Expectations are that secondary employees are less sensitive to underutilization in the work situation than primary employees with an anticipated longer future in the Dutch hospitality industry. Using the UWV data this prediction also receives empirical support: hypothesis 14b is not rejected. Almost half of all professional employees in the Dutch hospitality industry enjoys overall job contentment. This is less than 30 per cent in the case of underutilization. It is notable that underutilization in the case of job wealth has little effect on overall job satisfaction.

Overall impression – The empirical findings in this chapter demonstrate that the concept of labour market segmentation is a fruitful approach for studying the labour market in the Dutch hospitality industry. Despite mixed results, the characteristics of hospitality jobs and the employees that fill these jobs in the identified labour market segments (IEQ and PCS) are to a large extent in harmony with the SLM predictions supporting the empirical validity of the created segments.

The next chapter – Using the IEQ and PCS tripartitions of the labour market in the Dutch hospitality industry as a starting point, it is implicitly assumed that there is relative homogeneity within the separate segments, i.e. groups of workers with very similar job characteristics. Where there is relative homogeneity the steps of the labour ladder are, so to speak, close together to such an extent that within the separate submarkets one cannot identify any smaller groups of workers with significantly different job characteristics. To test this hypothesis of homogeneity, also referencing step 2 in figure 1.1 (chapter 1), a number of cluster analyses are worked through in chapter 4.

CHAPTER 4

Some notes on the number of labour market segments

An investigation into the Dutch hospitality industry

4.1. Introduction

In chapter 3, the number of identified submarkets is in line with what appears to be the most common divisions in empirical SLM research, namely a tripartition of the labour market with at the bottom end a secondary segment of jobs with *Jedermanns Qualifikation* and at the top end a primary segment that is further divided into an upper tier and a lower tier. Osterman (1975, p. 508) refers here to a "refined version of the dual labor market theory" and Graham and Shakow (1990, p. 309) to a "post-dual segmentation theory". Dekker, De Grip and Heijke (1995, p. 3) also feel that there is a definite preference in the SLM literature for a tripartition of the labour market. The operational delineation of the labour market segments, however, is different for each piece of research.

In our search for pointers to the existence of labour market segmentation in the Dutch hospitality industry a tripartition of the labour market seems to be an appropriate choice. This conclusion follows from the empirical findings in chapter 3. At the same time, no impression is given that the demarcation lines used are unique (see also Mayhew and Rosewell (1972, p. 107)), since both views of a segmented labour market, that of the employee (IEQ) and of the employer (PCS), support the appropriateness of a presumed tripartition of the hospitality labour market. Furthermore, in regard to either SLM perspective, within the separate labour market segments one can identify jobs with greater or lesser SLM allure. The hypothesis of a (kind of) labour ladder appears to be closer to reality, i.e. a succession of individual jobs that can be ordered according to degree of allure. In general it can be supposed that two 'identical' workers will never be valued exactly the same by their employer. For workers, the same applies to 'identical' jobs. If one looks hard enough, discriminating factors can always be identified. For example, by using the appropriate equivalence factors then, following the LPL methodology, we can visualise the labour ladder by ranking all hospitality workers in the primary segment on the basis of their welfare equivalent earnings. The SLM perspective of the employee therefore offers not only the opportunity to determine the segment with which an employee is identified, but also enables us to calculate the distance to the next higher (and lower) submarket[46]. Taking the hypothesis of a tripartition of the hospitality labour market as a starting point, we implicitly

---

[46] See, for example, Van Praag, Bispo and Stam (1993) for the related concept of the poverty gap in the poverty literature.

assume that within the relevant submarkets there are relatively homogeneous entities, with reference here to hospitality employees with highly similar job characteristics. Formulated differently, it is hypothesised that within the different labour market segments the steps of the labour ladder are, so to speak, so relatively close to each other that it is not possible to identify smaller groups of employees with significantly different job characteristics ('there are no steps on the labour ladder missing'). To test this hypothesis of homogeneity and thereby exploring the validity (quality) of the created labour market segments (see chapter 1, step 2 in figure 1.1), a number of cluster analyses (CA) have been developed.

This chapter is laid out as follows. Section 4.2 contains a short discussion of a number of methodological steps in cluster analysis and explains specific choices in relation to the present SLM investigation. The empirical findings of the various cluster analyses are presented in section 4.3. Section 4.4 ends this chapter with a summary and concluding observations.

4.2. Methodological issues in cluster analysis

An important goal of cluster analysis is to arrive at a classification of entities (also known as cases or objects) in relatively homogeneous groups (see, for example, Sneath and Sokal (1973), Aldenderfer and Blashfield (1984), Romesburg (1984) and Everitt (1993)). In this search process into clusters of very similar entities, a number of sequential steps can be identified (see, for example, Aldenderfer and Blashfield (1984, p. 12)):

1. The choice of a sample as a basis for the cluster analysis.
2. The selection of variables forming the basis for determining the degree of (dis)similarity between the entities in the sample.
3. The calculation of the degree of (dis)similarity between the entities using a similarity measure.
4. The classification of the entities in relatively homogeneous groups with the aid of a cluster method.
5. The validation of the resulting cluster solution.

Before discussing the empirical findings of the different cluster analyses, we first briefly explain these five basic steps and the specific choices in the light of the present SLM investigation. With regard to the choice of the sample, it can be noted that cluster analysis is used in this chapter as an instrument for determining whether the submarkets in the Dutch hospitality industry identified in chapter 3 can be further subdivided into smaller, relatively homogeneous worker groups. The employee data for the separate IEQ and PCS submarkets therefore serve as a basis for the different cluster analyses.

As regards the choice of variables for determining the degree of similarity between hospitality jobs in the different submarkets, we are guided by the segmentation theory. To avoid 'naive empiricism', Aldenderfer and Blashfield (1984) emphasise the importance of theory as a guide to choosing the CA variables: "Ideally, variables should be chosen within the context of an explicitly stated theory that is used to support the classification. The theory is the basis for the rational choice of the variables to be used in the study (p. 19)". As the basis for calculating the degree of similarity between hospitality jobs therefore several job

characteristics are applied traditionally regarded in the SLM literature as distinctive for determining the degree of job allure. In particular, some job characteristics are selected that served in section 3.6 as the basis for testing the first three SLM hypotheses. Set out below is a summary of the chosen CA variables with, between brackets, the dimension or response options and also including, for the nominal work attitudes, the corresponding survey question:

    a.   Net hourly wage (€).
    b.   Contract of employment (permanent/temporary).
    c.   Contractual working hours per week (small part-time/large part-time/full-time).
    d.   Sufficient variation in work (*Do you experience sufficient variation in your work?* (yes/no)).
    e.   Mostly absorbing work (*Is your work mostly absorbing?* (yes/no)).
    f.   Job requires to learn new things (*Does your job require to learn new things?* (yes/no)).
    g.   Adjusting speed of work (*Are you able to adjust the speed of work?* (yes/no)).
    h.   Moment carrying out work (*Can you decide yourself when to perform a task?* (yes/no)).
    i.   Order of work (*Do you decide yourself the order of work?* (yes/no)).
    j.   Very strenuous work (*Do you experience very strenuous work?* (yes/no)).
    k.   Very exacting work (*Do you experience very exacting work?* (yes/no)).

The following step consists of the choice of a similarity measure to be able to determine the degree of similarity between hospitality employees, which then naturally means the degree of similarity between employees with regard to the selected CA variables. The CA literature distinguishes between different types of similarity measures, of which correlation coefficients, association measures and distance measures are important exponents (see Aldenderfer and Blashfield (1984, pp. 22-33)). Traditionally, the Pearson correlation coefficient is used to calculate the degree of linear relation between variables. This coefficient is used in cluster analysis to determine the correlation between cases[47]. For SLM research, however, the correlation coefficient has an unwanted characteristic: two employees *i* and *j* are strongly correlated as long as the values of the CA variables for employee *i* are largely in a linear relationship with the corresponding values of employee *j*. If, for example, the results of all CA variables in a SLM setting are valued in Euros and the score of employee *i* is twice that of employee *j* for (most of) these variables, then the correlation coefficient indicts a strong similarity between the two employees, even though employee *i* is

---

[47] In cluster analysis the Pearson correlation coefficient is defined as follows:

$$r_{ij} = \frac{\sum_{k=1}^{n}(x_{ki} - \bar{x}_i)(x_{kj} - \bar{x}_j)}{\sqrt{\sum_{k=1}^{n}(x_{ki} - \bar{x}_i)^2}\sqrt{\sum_{k=1}^{n}(x_{kj} - \bar{x}_j)^2}}$$

where x_{ki} is the value of CA variable k for case i, $\bar{x}_i$ is the mean of all CA variables for case i and n the number of CA variables. The same definitions apply to case j. The correlation coefficient can allow values between -1 and 1, including the margins. A value of the correlation coefficient of or around 0 reveals a very limited similarity between two cases, at least with regard to the chosen CA variables.

probably positioned significantly higher up the labour ladder. It does not seem correct, therefore, to regard the two employees as very similar. A more technical reason why our investigation does not use the correlation coefficient is the observation that the measurement levels of the CA variables vary between nominal, ordinal and ratio, whereas the correlation coefficient is primarily intended for quantitative variables. Finally, it is mentioned that the literature often refers to the unclear meaning of the mean of the CA variables in the calculation of the correlation coefficient. In cluster analysis this mean relates to various sorts of variables and not, as in a classical setting, to the mean of a specific variable across different cases.

If all CA variables are scaled dichotomously nominally, then frequent use is made in cluster analysis of an association coefficient as a similarity measure. The literature distinguishes several association coefficients, of which the simple matching coefficient and Jaccard's coefficient are valued examples (see, for example, Sneath and Sokal (1973) and Everitt (1993)). In a SLM setting these coefficients are used to determine the degree of similarity between employees through the number of equally regarded scores in the selected binary job characteristics[48]. Although in the literature association coefficients are also developed, enabling the degree of similarity between cases to be calculated on the basis of variables of different measurement levels (see, for example, Gower (1971)), in this chapter a distance measure is applied. In contrast to correlation and association coefficients, distance measures can be described as a measurement for the *dis*similarity between the entities in a sample. Applying correlation and association coefficients, a strong similarity between cases is reflected by a relatively high value within the relevant range. The reverse is true for distance coefficients. If two hospitality employees score equally on all CA variables, then the

---

[48] The work attitudes in the Hospitality Employees Study are examples of dichotomous nominal variables: there are two possible responses – 'yes' or 'no'. Depending on the question an affirmative answer may indicate either a positive fact about work (for example *Can you decide yourself when to perform a task?*) or a less alluring work situation (for example *Do you experience very strenuous work?).* If in a SLM setting two employees *i* and *j* are compared with regard to *n* binary work attitudes then the simple matching coefficient (*S*) and Jaccard's coefficient (*J*) are defined as follows:

$$S_{ij} = \frac{a+d}{a+b+c+d} \quad \text{and} \quad J_{ij} = \frac{a}{a+b+c}$$

where *a* is the number of job characteristics for which both employees score positively, *b* and *c* the number of non-equally rated responses – employee *i* affirming and employee *j* rejecting or vice versa – and *d* the number of work aspects regarded negatively by both employees. So, *n=a+b+c+d*, where the combination of *i* and *j* determines the specific values of *a*, *b*, *c* and *d*. Both coefficients can allow values from 0 to 1, including the margins. For very similar employees on the lower tier of the labour ladder we expect the numerator in S to be dominated by *d* and for similar employees on the upper tier of the labour ladder by *a*. Given the above definition of the parameters in *S* and *J* it is therefore not obvious for a SLM investigation to disregard the equally-rated negative scores (*d*). In other types of research, however, Jaccard's coefficient may perhaps be preferred to the simple matching coefficient, for example in the classification of objects where the requirement is for the degree of similarity to be determined primarily by the (physical) presence of certain characteristics and not influenced by the simultaneous absence of certain characteristics for the two objects.

distance between the two is equal to zero. In general, distance coefficients have no upper limit. The Euclidean distance, whether or not squared, and the Manhattan distance are metric distance functions often used in cluster analysis[49]. Since with these and other distance coefficients the result is heavily influenced by variables with relatively large differences in value and variance, it is usual to standardize the CA variables. In this chapter we have opted for the squared Euclidean distance, whereby the variables are standardised to Z-scores[50]. A

---

[49] The Euclidean distance and the Manhattan distance between two cases i and j are defined as follows (see Aldenderfer and Blashfield (1984, p. 25)):

$$d_{ij}^{E} = \sqrt{\sum_{k=1}^{n}(x_{ki} - x_{kj})^2} \quad \text{and} \quad d_{ij}^{M} = \sum_{k=1}^{n}|x_{ki} - x_{kj}| \text{ respectively}$$

where x_{ki} and x_{kj} are the values of CA variable k for cases i and j and n is the number of CA variables. Both distance coefficients can be regarded as special cases of the general Minkowski distance function:

$$d_{ij} = \left(\sum_{k=1}^{n}|x_{ki} - x_{kj}|^r\right)^{\frac{1}{r}}.$$

The squared Euclidean distance is equal to $(d_{ij}^{E})^2$. Distances calculated have no absolute significance. In cluster analysis it is primarily the ranking of the distances that is important.

[50] By way of illustration, three professional workers have been selected from the Hospitality Employees Study, hereinafter named employee *I*, *II* and *III*. These employees score on the CA variables (a…k) as follows:

	a	b	c	d	e	f	g	h	i	j	k
I	€ 6.20	1	1	1	1	1	1	1	1	2	2
II	€ 9.60	1	3	1	1	2	1	1	1	2	1
III	€ 11.50	1	3	1	1	1	1	1	1	2	1

A description of the CA variables is contained in the main text. The following observations can be made on the different categories to the variables. The contract of employment (b) can allow two values: 0 (temporary) and 1 (permanent), the contractual working hours (c) three values: 1 (variable/1-11 hours per week), 2 (12-37 hours) and 3 (38+ hours) and the responses to the work attitudes (d…k) are either affirmative (1) or negative (2). Professional worker *III*, for example, enjoys a permanent appointment, works fulltime and earns €11.50 net per hour. Excluding mental workload (k) this employee scores positively for all work attitudes. From the SLM perspective of the employer, employee *III* can justifiably be regarded as positioned on the primary ladder. With assistance from the squared Euclidean distance measure, the following distances between the three professional workers can be calculated:

Non-standardised

	I	II	III
I		18.1	33.7
II	66.9%		4.5
III	85.2%	77.9%	

Standardised (Z-scores)

	I	II	III
I		19.3	19.8
II	17.5%		5.0
III	40.1%	19.5%	

The distances between the professional workers are shown in the upper diagonal of each matrix, on the left based on non-standardised CA variables and on the right after standardisation of the variables into Z-scores. This

similarity matrix can now be calculated for each of the distinct submarkets in the Dutch hospitality industry, in which all metric distances are presented pairwise. The dimension of this square matrix, also referred to as the proximity matrix when applying a distance coefficient, is naturally determined by the number of employees in the relevant submarket.

The fourth step in cluster analysis consists of the choice of a cluster method to be able to group strongly similar cases in a sample. The literature proposes many kinds of clustering methods. Here we discuss two techniques frequently used in the social sciences, namely the hierarchical agglomerative clustering method and the iterative partitioning clustering method. In relation to the present SLM investigation a number of characteristics of the hierarchical agglomerative clustering method can be summarised as follows. At the start of the clustering process all hospitality employees are regarded as separate groups. The proximity matrix is then repeatedly searched and with each search the most similar employees are linked until at the end of the last search all the employees are clustered into one large group. This clustering can be visually represented using a tree diagram, also known in the literature as the dendrogram. The dendrogram illustrates which employees at which level, here referring to the squared Euclidean distance, are linked to form a new cluster. The application of a hierarchical agglomerative clustering method does not, by definition, create overlapping groups although the clusters are nested. There is a hierarchical structure: each cluster is a part of a larger group that is created later in the clustering process. To bring together all employees there are exactly *p-1* steps necessary, where *p* represents the number of employees in the relevant sample. Variants of the hierarchical clustering method differ in the way in which the calculated similarity matrix is searched in order to link the most similar employees. The literature distinguishes various linkage rules, each of which leads to a unique CA solution (dendrogram). Frequently applied rules include single linkage, complete linkage and Ward's method (1963). When applying single linkage, a new employee must have a certain similarity to *at least one* employee in an existing cluster, whilst for complete linkage the candidate must have a certain degree of similarity with *all* the members of an existing group. Ward's method clusters groups or cases that lead to the smallest increase of the variance within the new worker group.

---

standardisation is based on the CA variables of *all* professional workers in the sample. The share of net hourly pay in the calculation of the relevant distance is presented in the lower diagonal of the matrices. Given the possible values of the CA variables it is clear that the distance between workers is largely determined by differences in hourly eanings. The shortest non-standardised distance is measured between employees *II* and *III* and 77.9 per cent of this distance is determined by hourly pay. The effect of the other CA variables is thereby subordinated. This conclusion applies also to the other non-standardised distances. After standardisation into Z-scores, by which all CA variables are distributed with mean zero and unit variance, the effect of the net hourly pay in the calculation of distances is significantly reduced. In this example, the ranking of the distances after standardisation remains unchanged. Generally, however, this ranking can change through standardisation, thereby influencing the final CA solution. This is also true when applying another similarity measure. On the basis of the squared Euclidean distance, employees *I* and *III* are considered least alike, applying either non-standardised or standardised CA variables. However, if the Pearson correlation coefficient is applied as a similarity measure, then in either situation professionals *I* and *II* show the least similarity.

Some notes on the number of labour market segments

The iterative partitioning clustering method has an entirely different approach to creating relatively homogeneous groups. In the context of this SLM investigation, the general working of these iterative methods can be summarised as follows. The basis of the clustering process is formed by an initial partition of all hospitality employees in a predetermined number of clusters. The centroid of these initial worker groups is calculated, being the multivariate mean of the CA variables across all employees in a group. Each employee is then allocated to the cluster with the shortest distance to the centroid. Once all employees have been allocated to a (new) group in this way, the new centroids are calculated and the allocation process is repeated until no more movement occurs. Variants of the iterative partitioning method differ according, for example, to the selection of the initial partition of the sample and the moment at which new centroids are calculated. In addition to a first random allocation of employees amongst the groups, an initial partition may, for example, also be based on the CA solution of a hierarchical agglomerative clustering method. Although the centroids of clusters are traditionally recalculated once all employees have been allocated to a (new) group, there is also the variant in which a new centroid is calculated after each movement.

Compared to the hierarchical methods, the iterative approach has a number of important advantages. Depending on the number of cases, hierarchical methods require the storage and repeated search through a possibly large *pxp* similarity matrix with *½p(p-1)* pairwise distances. By contrast, using the iterative methods the distances are immediately calculated with the aid of the original data, whether or not transformed, so that iterative methods are better able to cluster relatively large samples. Another advantage concerns the clustering process: iterative methods go through the data more than once and can thereby correct for a possibly less suitable grouping of cases in a previous iteration. By contrast, using hierarchical methods a less successful allocation can not be revised later in the clustering process. Despite these advantages, given the aims of our SLM research, we have nevertheless chosen the hierarchical approach, since a significant disadvantage of the iterative methods is that a suitable number of clusters must be specified *in advance*, while it is the empirical calculation of this number per SLM submarket which is the very purpose of the investigation in this chapter.

The primary goal of cluster analysis is to discover structure in a sample. The empirical processing of a cluster analysis, however, not uncommonly has the character of the partial imposing of structure on data (see Aldenderfer and Blashfield (1984, p. 16)). Within the hierarchical clustering methods the linkage rules according to Ward's method are liable, for example, to create spherical clusters of more or less the same size (equal variance) and to contain about an equal number of cases (equal sample size). By contrast, single linkage is liable to create more elongated clusters of unequal variance and sample size. The relatively strict rules for complete linkage lead mainly to compact, spherical groups of very similar cases. These groups are generally of unequal variance and sample size. The SLM theory predicts the presence of a limited number of clearly distinguishable job groups that are rankable according to degree of allure. The segmentation theory does not presume that the different labour market segments are more or less the same size. If the three hierarchical methods were compared as to their liability to group according to specific characteristics,

then for an empirical SLM investigation one could have, in advance, a relative preference for complete linkage. Labour market segments with a more or less equal number of employees per group do not, however, contradict the segmentation theory. If a particular sample contains this equality, then the inclination for complete linkage to create job groups of unequal size undermines this natural quality. It seems sound practice to test various CA configurations[51] for their suitability, with help, for example, from an external validation procedure.

Validation of a CA solution is the final, and possibly most important, step in cluster analysis. All three distinct hierarchical clustering methods are developed in this chapter and a number of significance tests on external variables are carried out afterwards to investigate the suitability of the created worker groups. It is not obvious to select variables for these tests that are also used for the classification of employees, since clustering methods lead by definition to relatively homogeneous groups in regard to the selected CA (internal) variables, by which multivariate variance analyses are usually significant for testing the reality of the clusters. Regarding the validation of a CA solution using internal variables, Aldenderfer and Blashfield (1984) conclude as follows: "Since these tests are positive, regardless of whether clusters exist in the data or not, the performance of these tests is useless at best and misleading at worst (p. 65)". Just as with the choice of CA variables, it seems rational to adopt the segmentation theory as the basis for the selection of external variables. The discussion in chapter 3 has demonstrated that the segmentation theory takes a certain position with regard to a diversity of aspects of the labour market. To test the significance of the (possibly) created worker groups, the following external variables are considered: gender (hypothesis 5 in chapter 3), additional training (hypothesis 7), commitment to work (hypothesis 10) and intraorganizational mobility (hypothesis 12). As with a classical tripartition of the total labour market, there is the expectation that through a further division of one or more of these submarkets greater SLM job allure will be linked to relatively more male employees, more additional training, greater commitment to work and more internal job transitions.

4.3. Hierarchical clustering of employees in the Dutch hospitality industry

As already indicated, the application of the hierarchical approach to relatively large samples leads to the repeated search through a sizeable similarity matrix. For example, for the 598 secondary employees in the net UWV sample (see section 3.2), this matrix contains almost 180,000 pairwise distances. Further investigation reveals that samples of around 300

---

[51] 'Configuration' means the specific input into the separate CA steps, especially: (1) the choice of CA variables, (2) any transformation of these variables, (3) the choice of a similarity measure and (4) the chosen clustering method. Each configuration results in a unique CA solution applied to the same sample. This chapter looks at three CA configurations, determined by the choice of various linkage rules: (a) single linkage, (b) complete linkage and (c) Ward's method. Each of these hierarchical methods is based on the same CA variables, standardisation of these variables into Z-scores and the squared Euclidean distance as the similarity measure.

employees (or more) involve serious processing difficulties. For that reason, a random sample of 300 employees is used to work through the different cluster analyses for both SLM approaches (IEQ and PCS) for the equally treated secondary labour market and the lower tier of the primary labour market.

Each of the hierarchical clustering methods leads to a unique solution. In determining the optimum number of employee groups the question naturally arises as to the level at which the relevant dendrogram must, so to speak, be sliced. To answer this question, two approaches are usually followed, namely a visual inspection of the CA solution and the application of more formal tests. For both approaches the literature often employs the concept of the fusion coefficient (Aldenderfer and Blashfield (1984, p. 54)), pointing here to the numerical value at which various employees (groups) are added to a new worker group. These values are determined by the chosen CA configuration and correspond to the y-axis in the relevant dendrogram. During the first steps in the clustering process the fusion coefficients are relatively small and as the procedure progresses and more dissimilar employees (groups) are added, the distances, and thereby the fusion coefficients, will increase. A relatively strong jump in this parameter therefore means that two relatively heterogeneous groups are being combined. The number of clusters before this link is accordingly the most likely solution.

By way of illustration, figure 4.1 shows the fusion coefficients for the PCS submarkets on the basis of the linkage rules for single linkage, in particular for the final 25 steps of the clustering process. For the professional market in the Dutch hospitality industry a visual inspection of these fusion coefficients points to the existence of two relatively homogeneous submarkets within the professional segment. For the lower tier of the primary labour market and the secondary segment these are four and three worker groups respectively[52]. Although a subjective assessment of the progress of the fusion coefficients is often applied to detect a suitable number of relatively homogeneous groups on the basis of a hierarchical clustering method, being analogously to the usual inspection of the scree plot in factor analysis (see also chapter 5), it seems sensible to further objectify the concept of a significant jump in the fusion coefficients. For this purpose, we follow Mojena's approach (1977): choose k clusters once $f_{k+1} > \bar{f} + \varphi s_f$ for a certain φ, where f_{k+1} is the value of the fusion coefficient in step $k+1$, $\bar{f}$ is the mean of the fusion coefficients and s_f the corresponding standard deviation. If this inequality in the successive $p-1$ steps in the clustering process is not attained, then the existence of exactly one cluster in the relevant sample is the most probable solution.

---

[52] Comparable observations apply to the other linkage rules: based on the PCS submarkets, the different hierarchical clustering methods in a visual inspection of the corresponding fusion coefficients point to the ability to segment the entire labour market in the Dutch hospitality industry in autumn 2001 into between eight and ten employee groups with very similar job characteristics. Based on the IEQ submarkets there would be between six and eight labour market segments. In the two SLM approaches different random CA samples lead to closely comparable results.

Figure 4.1: Fusion coefficients from a single linkage hierarchical clustering of workers in the Dutch hospitality industry per labour market segment, PCS method, September 2001
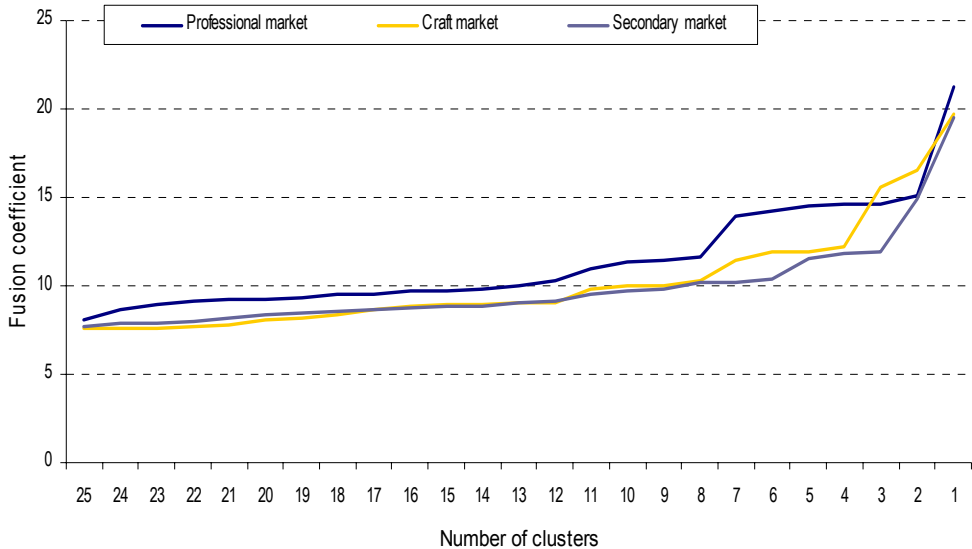
Mojena's stopping rule leads generally to a sparser cluster picture than a subjective assessment of the fusion coefficients. In both SLM approaches (IEQ and PCS) the results of Ward's method using Mojena's approach do not indicate the existence of smaller relatively homogeneous employee groups within the relevant submarkets (see table 4.1). By contrast, single linkage leads to the conclusion that the equally treated secondary labour market can be further subdivided into two clusters. From the SLM perspective of the employer this empirical finding also applies to the lower tier of the primary labour market (craft employees). For both submarkets, however, the distribution of the number of employees between the two clusters is extreme. There is no certain naturalness of the CA solution. The question arises whether in the 'single worker groups' there is not instead an eccentric finding (case). However, various random samples do not indicate this[53].

---

[53] To investigate the stability of the number of employees per cluster there is a first round involving both submarkets consisting of ten random samples with 300 jobs in each. For the secondary labour market, for example, single linkage creates in eight resulting divisions a group with precisely one employee. In the other two samples cluster II consists of precisely two and three employees. The 'single worker groups', however, do not all consist of the same employee. In a number of samples, the hospitality worker with ID number 43 belongs to this group, whilst in another sample this is employee number 1041, whilst number 43 is also included in the relevant

116

Table 4.1: The optimal number of labour market segments in the Dutch hospitality industry using different hierarchical clustering methods and Mojena's stopping rule, September 2001

SLM perspective/ linkage rule		Samples		Optimal number of clusters	Cluster sizes		
	Segment	Net sample	CA sample	Mojena's stopping rule	Cluster I	Cluster II	Cluster III
PCS/	Professional	185	185	1	X	X	X
Ward's method	Craft	388	300	1	X	X	X
	Secondary	598	300	1	X	X	X
PCS/	Professional	185	185	1	X	X	X
single linkage	Craft	388	300	2	299	1	X
	Secondary	598	300	2	299	1	X
PCS/	Professional	185	185	2	181	4	X
complete linkage	Craft	388	300	3	246	53	1
	Secondary	598	300	3	267	24	9
IEQ/	Up	75	75	1	X	X	X
Ward's method	Low	498	300	1	X	X	X
	Secondary	598	300	1	X	X	X
IEQ/	Up	75	75	1	X	X	X
single linkage	Low	498	300	1	X	X	X
	Secondary	598	300	2	299	1	X
IEQ/	Up	75	75	2	71	4	X
complete linkage	Low	498	300	3	199	99	2
	Secondary	598	300	3	267	24	9

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Although this cannot be regarded as a natural solution, there is stability in the CA results from various samples. An external validation of the CA solution has little point in this division of the cluster sizes. Just as with Ward's method, single linkage in both SLM

---

sample. After removing all employees from the various single worker groups there are ten new random samples in a second round, each containing 300 secondary workers. Again we see the stability of the CA solution with again not the same employees each time in the single worker group. Comparable results are recorded for the PCS lower tier of the primary labour market.

approaches indicates a relatively homogeneous top of the primary labour market. With complete linkage, Mojena's stopping rule leads to the finding that each of the separate submarkets can be further split into a limited number of worker groups. Moreover, the division of the optimum number of employee groups amongst the three original submarkets is identical for both SLM approaches. Just as with single linkage, the finding of a very limited size of one of the created worker groups also arises here. This applies at the top of the primary labour market to cluster II and within the other submarkets to cluster III. These empirical findings apply to both SLM approaches and appear stable for various random samples.

Table 4.2: External validation of the significance of the hierarchical CA solution using complete linkage for the secondary labour market in the Dutch hospitality industry, September 2001

	Secondary labour market		
SELECTION OF INTERNAL VARIABLES	Cluster I	Cluster II	Cluster III
Net hourly wage	€4.8	€5.4	€3.4
Contract of employment (%)			
Permanent appointment	34.9	50.0	62.5
Temporary appointment	65.1	50.0	37.5
Contractual working hours per week (%)			
Small part-time	96.9	0.0	77.8
Large part-time	3.1	70.4	22.2
Full-time	0.0	29.6	0.0
Job content (%)			
Sufficient variation in work	81.6	73.1	0.0
Mostly absorbing work	69.7	80.8	25.0
SELECTION OF EXTERNAL VARIABLES			
Female (%)	58.3	53.8	62.5
With completed additional training (%)	21.9	37.0	22.2
Intraorganizational mobility (%)	6.1	19.2	25.0
Work means a lot to me (%)	56.8	57.7	25.0
Cluster size (CA sample: n = 300)	267	24	9

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

If using complete linkage we compare the two largest employee groups within the equally treated secondary labour market, i.e. clusters I and II, then various internal variables suggest

that cluster II contains comparatively the better secondary hospitality jobs, at least according to SLM predictions (see table 4.2). Compared with cluster I there are, for example, relatively more employees in the second group with a permanent appointment. Job size and the net hourly wage also indicate that employees in cluster II are positioned somewhat higher up the secondary labour ladder than their colleagues in cluster I. This conclusion is also supported if a number of external variables are taken into account. Cluster II, for example, includes significantly more employees with completed additional hospitality training and, in relation to this, there is also relatively more intraorganizational mobility than in cluster I. Also in line with the SLM expectations, women in cluster II are somewhat less well represented than in cluster I. With regard to the connection with work, the differences between the two groups are not significant. In general it can be concluded that the application of complete linkage for the two largest worker groups created within the secondary labour market leads to a (SLM) natural CA solution[54]. This conclusion loses force, however, if the characteristics of cluster III are also taken into account. Given the selected CA variables in table 4.2 it is not clear, for example, where cluster III should be positioned within the secondary segment. The net earnings point to a backline position of cluster III, the type of contract of employment to a forward line position and the size of the job to a position between the two largest secondary worker groups. The size of cluster III, however, is modest. Although a certain stability amongst various CA samples can be observed in terms of the relative sizes of the three secondary employee groups, the position of the smallest group in particular, and therefore the SLM ranking of the three clusters, is often less easy to identify.

4.4. Summary, conclusions and discussion

To summarise, one can conclude that if Ward's method and Mojena's stopping rule are applied then the identified PCS and IEQ submarkets in the Dutch hospitality industry cannot be further subdivided into smaller, relatively homogeneous and natural employee groups. After consideration of the size and composition of the groups created with various random samples, this empirical finding also applies to single linkage as a clustering method. A similar consideration with complete linkage leads to the conclusion that the professional market (PCS upper tier) and the group of job wealthy workers (IEQ upper tier) both also represent a segment of employees with very similar job characteristics, at least via the chosen CA variables. However, the lower tier of the primary labour market and the equally treated secondary labour market may via this hierarchical clustering method be further divided into two relatively homogeneous and SLM natural worker groups.

The results of the different cluster analyses may perhaps create the impression that the concept of a (sort of) labour ladder in the Dutch hospitality industry is less applicable than one might initially think. Cluster analysis, however, involves the relative homogeneity with the chosen CA configuration. As indicated in the introduction to this chapter, within the different worker groups with very similar job characteristics there is also a greater or lesser

---

[54] This general finding also applies in both SLM approaches to the two largest worker groups in the lower tier of the primary labour market.

degree of job allure. The stronger the magnifier, the sharper the labour ladder comes into focus.

To conclude, it is emphasised that the primary purpose of the CA expedition in this chapter involved the investigation of the relative homogeneity of the PCS and IEQ labour market segments. Naturally, cluster analysis can also be used to arrive at a classification of hospitality employees using the entire labour market as a starting point. In addition to the SLM perspective of the employee (IEQ) and that of the employer (PCS) we could describe the application of cluster analysis in this context as the SLM perspective of the researcher, in line with segmentation method C in section 2.5, and although this perspective is not the focus of this chapter, it is perhaps interesting to add it to the SLM agenda for future research.

CHAPTER 5

Earnings, human capital and working conditions

An investigation into the Dutch hospitality industry

5.1. Introduction

The literature on segmentation regards different wage-setting processes, dependent on the labour market segment to which a worker belongs, as one piece of evidence for the existence of a segmented labour market (see chapter 2). In particular, in the Anglo-Saxon SLM literature it is usually assumed that the extent of human capital amongst workers in the secondary segment has little if any influence on individual earnings, whereas in the primary labour market this is assumed to have a significant effect on the earnings position. The SLM theory also challenges the neoclassical expectation that secondary workers generally receive bonuses for being exposed to various forms of job discomfort and work-related risks of sickness and injury, in some sectors with an increased risk of fatal consequences. According to the segmentation theory this compensation only applies to workers in the primary labour market (see, for example, Graham and Shakow (1990)).

Formulated differently, the SLM theory rejects the neoclassical hypothesis of equalizing differences in the labour market (see, for example, Brown (1980) and Rosen (1986)). Part of this neoclassical assumption is that, all other things being equal, workers with less alluring jobs on the secondary labour ladder are able to make up ground vis-à-vis their better paid primary colleagues by increasing their human capital and through earnings compensation for the more significant job discomforts and work-related risks. By contrast, however, the theory espoused by many SLM economists assumes the existence of the concept of widening differences[55].

The primary objective of this chapter is to test the empirical plausibility of the above SLM expectations as they apply to the Dutch hospitality industry. For this purpose we estimate various earnings functions by which, from a multivariate perspective, numerical insight is obtained into the explanatory powers behind the actual earnings profiles of workers in the hospitality industry. The earnings literature in this context distinguishes between a diversity of influencing factors, such as worker characteristics, working conditions, firm

---

[55] As expressed by Vietorisz and Harrison (1973, p. 367): "…labour market segmentation is an instance of divergent development rather than of convergence to equilibrium". These divergent processes particularly refer to employees being employed in different submarkets, while similar processes within a segment lead more to a situation of homogeneity: "Segmentation implies internal cohesion within the segments as much as divergence between them.", (Vietorisz and Harrison (1973, p. 371)).

characteristics, market conditions and institutional factors[56]. The working-out of the various earnings equations begins with the estimation of a traditional earnings function in accordance with the human capital approach (see, for example, Becker (1967), Mincer (1974) and Willis (1986)) and is then gradually expanded through the inclusion of additional determinants of individual earnings. An SLM investigation of the actual earnings of workers in the Dutch hospitality industry as worked through in this chapter provides a part of the answer to the central question addressed by this thesis (see chapter 1) and can, we believe, be regarded as filling a gap in the literature on the hospitality industry.

As a starting point for the present study we use a representative sample of hospitality employees from the administration of insured workers of the Implementing Body of Social Insurances ("Uitvoeringsorgaan Werknemers Verzekeringen (UWV)"), with reference to the employment situation in September 2001[57]. For delineating the various labour market segments in the Dutch hospitality industry we apply the PCS segmentation method as introduced in chapter 3, with reference to the SLM perspective of the employer[58].

The structure of this chapter is as follows. Section 5.2 explains in more detail several determinants of individual earnings. In addition to a theoretical analysis, we also discuss specific choices in the light of the present investigation into the Dutch hospitality industry. We thereby focus, for example, on the way in which the many individual work attitudes identified in the Hospitality Employees Study – which refer to types of physical and mental workload – are summarised for inclusion as regressors in the different earnings functions. The estimation results of the earnings functions are discussed in section 5.3. Section 5.4 concludes the chapter with a summary, conclusions and discussion.

5.2. Determinants of individual earnings

5.2.1. Supply factors: worker characteristics

In the neoclassical literature the schooling of workers is regarded as one of the most significant explanations of perceived labour market status and for the position on the income

---

[56] See, for example, Teulings, Webbink and Kalwij (1992) for a detailed overview of various theories on wage determination in the international literature.

[57] See chapter 3 for a description of the UWV data.

[58] The LPL methodology as a segmentation approach (see section 3.4) is largely led by net earnings and, therefore, from the point of view of selectivity for estimating an earnings function (with earnings as the regressand) methodologically less suitable. See also Brouwer, Groot, Muizelaar and Teulings (1992, pp. 6-7) and Dekker, De Grip and Heijke (1995, p. 1).

ladder in particular[59]. It is not just the initial education of workers that a significant number of people traditionally undertake before entering the labour market, but especially[60] additional schooling investments during working life which are assumed to be primarily determinant of perceived earnings differences between workers. Mincer (1974) is widely regarded as one of the first researchers to have examined the earnings-schooling relationship in model form from a theoretical framework and empirically tested it in different variants on the basis of micro data[61]. These model variants relate to various specifications of a classical linear regression model with individual earnings being the predictand and various schooling indicators the determinants. Mincer introduced the general term *Human Capital Earnings Function* (HCEF) for these regression models and it has been adopted in subsequent literature. Clearly Mincer recognises that the accumulated human capital of workers cannot provide a full explanation for the perceived personal income distribution[62]. The HCEF may be regarded as a successful basic model on which to then arrive at a more refined and detailed explanation for the perceived earnings inequality between workers[63].

---

[59] Although not the focus of attention, we can expect that the influence of education is not limited to the position in the labour market in terms of job opportunities, function level, income position, job security, etc., but that it also affects attitudes, behaviour and accordingly positions and developments in daily life (see Haveman and Wolfe (1984)).

[60] Progressing through working life, we can assume that the relative significance of the initial schooling for current earnings decreases as relevant work experience increases, partly as an indicator for the amount of additional training investments. Various empirical investigations support this assumption. See, for example, Mincer (1974, pp. 57-58): "As measured by simple coefficients of determination, the effects of schooling on earnings decay continuously in successive three-year experience groups after the first decade of experience. […]. The decay of the coefficient of determination (R^2) reflects the growing importance of accumulated experience in the determination of earnings."

[61] Mincer (1974, p. 43) writes: "There is as yet no evidence of quantitative explanatory power of the human capital model to match the promise indicated by the qualitative or comparative analyses. As yet, no serious attempts have been made at a full quantitative accounting of the effects of the distribution of investment in human capital on observed earnings inequality."

[62] In this context Victor Fuchs in the foreword to Mincer's (1974) book writes: "The subject is earnings inequality, but the reader will look in vain for references to unions, monopsonists, minimum wage laws, discrimination, luck, and the numerous other institutional factors that are frequently introduced in such studies. Instead, Mincer fashions a simple but powerful theoretical model in which human capital is the central explanatory variable. Mincer does not deny that other factors may influence earnings. His position is, "Let's see how far the human capital model can take us." And in his hands it takes us very far indeed."

[63] As summarized by Card (1999, p. 1809): "This brief overview suggests that the human capital earnings function is alive and well. A simple regression model with a linear schooling term and a low-order polynomial in potential experience explains 20-35% of the variation in observed earnings data, with predictable and precisely-estimated coefficients in almost all applications. Close examination reveals that the model is too parsimonious to fully characterize the joint distribution of earnings, age and schooling. Nevertheless, it provides a natural starting point for building more complex models of earnings determination and for investigating the effects of other covariates such as race, gender and firm characteristics.". See also Willis (1986, p. 526): "As an empirical tool, the Mincer earnings function has been one of the great success stories of modern labour economics. It has been

For estimation purposes, in a HCEF setting specific choices need to be made with regard to the earnings variable (regressand), the schooling indicators (regressors) and the model specification. In addition to theoretical considerations, selections are also obviously determined by aspects such as availability of data, context and relative preference from competing empirical investigations[64].

Theoretically, the earnings variable can be measured in various units of time. Given the use of questionnaires, empirical studies mostly use an annual, weekly or hourly unit of time. The hourly wage can be regarded as an indicator of the quality of work being offered. In adopting a weekly or annual basis, there is actually an overlap of two explanatory processes, that of the quality of labour offered and that of the amount of labour supply; for example, annual earnings = hourly wage x (hours per week) x (weeks per year), see also Card (1999, p. 1808). The expectation is that these explanatory processes have a different character. In addition to market conditions (demand for labour) personal factors such as the health of the worker (or of a family member) and whether or not there are small children in the household are often seen as important determinants of the amount of labour supply, rather than its quality[65]. In a neoclassical setting the quality of the labour supply is assumed to be primarily determined by the richness of the schooling investments. However, in this context schooling is traditionally regarded as a common determinant, i.e. schooling is not only a determinant of quality, but better-trained people also offer, on average, more labour. In this chapter we are primarily interested in the actual earnings profile of hospitality workers as a measure of productive skills, so that for the accuracy of the analysis in an earnings function preference is theoretically given to the hourly wage as the predictand. On account of the influence of insurance contributions and taxes on net earnings a preference with that is given for the gross earnings concept (see also Berkhout, De Graaf, Heyma and Theeuwes (2001, p. 30)). In addition the regressand is usually expressed in an earnings function as a (natural) logarithmic transformation $\ln(y_c)$ and sometimes in monetary terms y_c. The choice for one of the two dimensions is to begin with dependent on the objective of the research. Where relative income differences between workers are central, then the logarithmic variant is suitable; where absolute income differentials are being researched, then the monetary

---

used in hundreds of studies using data from virtually every historical period and country for which suitable data exist."

[64] See, for example, the ten commandments of applied econometrics in Kennedy (2003, pp. 390-397).

[65] Nevertheless, we can assume that, for example, the condition of a worker can also affect the quality of the work performed. Consider, for example, problems with concentration or other mental difficulties. In case of a temporary health problem (and in view of the collective agreement) a reduction in productive skills is not expected to have an effect on individual earnings. In this context increasing age is also perhaps a point to focus on: "The life-cycle earnings profile partly reflects biopsychological development: of maturation at young ages and decline at older ages. This development is systematic and largely independent of (exogenous to) the individual's will. To the extent that this development creates a concave earnings profile, the investment interpretation must be modified.", (Mincer (1974, p. 76)).

specification is appropriate. According to Mincer (1974), the absolute earnings concept is only suitable if the schooling indicators also are available as investment sums[66]. However, in micro data files the schooling of workers is usually measured in terms of the number of years of schooling and the level or direction of the education. Apart from making a choice in advance for the absolute or relative earnings concept, there is also the possibility to determine this 'endogenous contest' empirically. To this end, Heckman and Polachek (1974) formulate the earnings variable as a Box-Cox transformation $(y_c^\lambda - 1)/\lambda$. If $\lambda = 1$ then the linear specification results as the predictand and in the limit as $\lambda \to 0$, by virtue of L'Hôpital's rule, the logarithmic variant. In an earnings function λ can be considered as an extra parameter which according to classical assumptions can be estimated with the method of maximum likelihood. Thereafter, by applying for example a LR test, one can express the relative preference for one of the two formulations. As well as a selection criterion, it is obviously also possible for empirical analysis to apply the ML point estimate of λ as such. A fractional estimate of λ, however, complicates the interpretation of the estimation results of an earnings function.

Given the above theoretical considerations and the availability of relevant data in the Hospitality Employees Study, in this chapter we apply the net hourly wage of hospitality workers and for estimation purposes formulated logarithmically in the various earnings functions. An analysis of the literature reveals that the logarithm of the hourly wage fits particularly well the classical assumption of normality (Card (1999, p. 1808)). As explained in chapter 3, we can assume certain measurement errors in the earnings variable. In contrast to measurement errors in one or more explanatory variables, measurement errors in the regressand do not result in biases in the parameter estimators and can be assumed to form part of the classical error term (see, for example, Kennedy (2003, p. 3)).

Influenced by the education system in the United States, the number of years of completed schooling S is traditionally applied as an indicator for the initial schooling of workers in a US earnings function. For the Netherlands and other countries with various learning paths this tradition is perhaps less informative than, for example, training streams[67]. Due to lack of specific information about additional schooling investments in the labour market the approach used in the literature is usually the number of years of formal work experience E. If there is also a lack of immediate data concerning E, then this experience, following Mincer (1974), is mostly measured by the potential variant, based on the number of years that a worker at a current age of X years could have worked as a maximum if, after completing schooling at the age of $S + 6$ years, he immediately entered the labour market. So: $E \equiv X - (S + 6)$. A classical formulation of the HCEF can now be written down as

---

[66] Mincer (1974, p. 130) writes: "If dollar values are used, the investment variables (schooling and experience) must also be expressed in dollars. If log earnings are used, then the investment variables can be expressed in units of time – years of schooling and years of experience."

[67] As worded by Card (1999, p. 1806): "Years of schooling has substantial face validity in the US education system, but is less natural in countries with multiple education streams (e.g., Germany or France) where high school graduation may entail different years of schooling depending on whether a student plans to go to university, vocational college, or start work right away."

follows (see, for example, Mincer (1974, p. 91), Willis (1986, p. 526) and Card (1999, p. 1804)):

$$\ln(y_{ci}) = \alpha + \beta_1 S_i + \beta_2 E_i + \beta_3 E_i^2 + \varepsilon_i \qquad i = 1,\dots,n \tag{5.1}$$

where (β_1, β_2 and β_3) are constant schooling parameters and ε_i is a classical error term for worker i. The quadratic experience term in equation (5.1) results from the neoclassical (rational) assumption of a linear declining trend in the time spent on additional schooling, i.e. "the time path of investment" (Willis (1986, p. 543)), during working life: "The logarithmic concavity of the earnings profiles is actually strongly implied by the analysis of optimal distribution of human capital investments over the life cycle.", (Mincer (1974, p. 75))[68]. Neoclassical theory thus predicts $\beta_1 > 0$, $\beta_2 > 0$ and $\beta_3 < 0$. According to the segmentation theory these schooling effects mainly apply to workers in the primary labour market, whereas the human capital model in the secondary labour market segment has less, if any, explanatory power (see chapter 2).

Alongside the hypothesis of a linear decline in schooling investments in the labour market, in his theoretical analysis Mincer (1974) also distinguishes the variant of an exponentially declining investment profile, which leads approximately to a Gompertz specification of the HCEF: $\ln(y_{ci}) = \alpha + \beta_1 S_i + \beta_2 x_i + \beta_3 x_i^2 + \varepsilon_i$ with $x_i = \exp(-\gamma E_i)$. On comparison the parabolic experience term as in equation (5.1) is by far the most used: "The quadratic in experience, for all practical purposes, has been universally accepted.", (Murphy and Welch (1990, p. 203)).

In an empirical investigation of 24 consecutive years of the US Current Population Survey (CPS, 1964-1987) Murphy and Welch (1990) conclude however that the quadratic specification of E is weighed down by significant biases which, both over time and for all differentiated schooling groups (on the basis of S) in a year appear to be strikingly stable: "The quadratic overstates initial earnings for all schooling groups and understates earnings at 10 years of experience for all groups. The quadratic also overstates earnings at mid-career and understates actual earnings at retirement.", (p. 208). Consequently, the positive earnings growth at the beginning of the career is systematically underestimated, whilst overestimated in the middle of the career and the projected decline in earnings at the end of the working life clearly exaggerated. The observed earnings-experience relationship in this CPS setting is significantly better estimated by including in equation (5.1) higher powers for the experience term as additional determinants. In this way a cubic addition (E^3) appears to remove a significant part of the perceived biases in the quadratic specification whilst a fourth power

---

[68] For the original derivation of equation (5.1) see Mincer (1974, pp. 85-91). As summarized by Willis (1986, p. 544): "Theories of optimal human capital accumulation suggest that workers will continue to invest in on-the-job training after leaving school, but that amount of investment will tend to decline over time. The parabolic earnings function in (12) corresponds (approximately) to the assumption that the fraction of earnings capacity which is invested declines linearly during working life from an initial value of $k(0)$ at the beginning of the work career to a value of zero at the end of the career.". See also Ben-Porath (1967) and fn. 44 in chapter 3 quoting Mincer (1974) with reference to Becker (1964, 1967).

removes almost all systematic biases. In fact these higher powers assume an alternative investment function with regard to additional training in the labour market, such that the positive earnings growth during the career is not characterised by a linear downward trend ($\partial \ln(y_{ci}) / \partial E_i = \beta_2 + 2\beta_3 E_i$, see equation (5.1)), but whereby a more flexible declining growth pattern is recognised: "It is not the assumption that earnings growth declines over the career that is rejected by the data; rather, the assumption of a constant rate of decrease is what is at odds with the evidence. Since the human capital investment process predicts only a declining rate of earnings growth, the quartic and other specifications are consistent with the basic components of Mincer's analysis.", (p. 227). Making use of more recent CPS data (1994-1996) and a somewhat differing selection of variables, including other schooling groups, Card (1999, p. 1805) also concludes that a traditional Mincer formulation supplemented by a cubic specification of the experience term leads to a considerable explanatory power of the model.

In some empirical earnings studies also the variants of a quadratic specification of the initial schooling term (S^2) and an interaction term between schooling and experience (SE) are put forward as additional determinants (see, for example, Mincer (1974) and Heckman and Polachek (1974)). Traditionally, a negative effect on individual earnings is expected for both influencing factors, i.e. on average lower returns in the case of more years of schooling and somewhat converging earnings-experience profiles respectively (see also Willis (1986, p. 546)). According to the methodology in Heckman and Polachek (1974) we can also propose empirically determining the 'correct' HCEF by specifying not only the regressand, but also the individual determinants as a Box-Cox transformation, where, of course, this is useful and, having regard to collinearity, possibly with certain restrictions upon the parameters: "Generalizations permit all (non-dummy) variables to be transformed via the same λ value, or each variable to be transformed with a different λ value.", (Kennedy (2003, p. 120)). Heckman and Polachek (1974) use this Box-Cox generalisation – with the possibility of differing, but subject to the limitation of whole λ values – to compare the ML performance of a number of traditional HCEF formulations contained in the literature with each other, including the Mincer specification in equation (5.1) and the Thurow model (1969) based on the assumption that human capital is produced by the input factors S and E following a Cobb-Douglas process: $\ln(y_{ci}) = \alpha + \beta_1 \ln(S_i) + \beta_2 \ln(E_i) + \varepsilon_i$. In total, Heckman and Polachek investigated ten human capital models having the specific form $\ln(y_{ci}) = \alpha + \beta_1 f(S_i) + \beta_2 g(E_i) + \beta_3 h(W_i) + \varepsilon_i$ where W is the number of weeks worked in a year and the same variants with the absolute earnings concept y_{ci} being the regressand. In particular, the explanatory variables included in the various HCEF formulations are logarithmic ($\lambda = 0$), linear ($\lambda = 1$) or quadratic ($\lambda = 2$); or ignored ($\lambda = -\infty$). Although not within the scope of this earlier study by Heckman and Polachek, it is clear that the model of Murphy and Welch (1990) can also be placed in a Box-Cox setting. Using the 1967 US Survey of Economic Opportunity data (SEO) and 1970 Census data, Heckman and Polachek consider in their empirical analysis both hourly wage and annual salary as the predictand, whereby the standardisation for W applies, naturally, only to the annual basis. The authors conclude that for both dimensions, hour and year, the logarithmic specification of the earnings variable in all the different human capital models is clearly preferred above the absolute earnings concept. A second conclusion is that with the hour basis a classical Mincer

HCEF such as in equation (5.1) performs significantly better than the Thurow formulation and a Mincer specification with only a linear experience term. This finding applies to both the relative and absolute earnings concept as the regressand. However, there is no significant difference between a Mincer formulation with both a linear and quadratic experience term and a model in which the experience variable is included logarithmically.

For estimating the economic return of initial schooling, the literature also looks at the possibility that the schooling effects differ according to the educational level. Goodman (1979) here distinguishes, for example, the level-specific model and the credentialist model. Anticipating that the quality of schooling is different per level, the level-specific model assumes that the completion of, for example, one year of secondary school averagely results in different private returns than a year of primary or higher education. The level-specific model can be formulated as follows: $\ln(y_{ci}) = \alpha + \beta_1 S_{Ei} + \beta_2 S_{Si} + \beta_3 S_{Ci} + \ldots + \varepsilon_i$ where S_E, S_S and S_C are the number of years of primary, secondary and higher education completed, respectively, and where β_1, β_2 and β_3 represent the corresponding constant schooling parameters. For a worker with, for example, six years' primary and five years' secondary education, the total economic returns from the initial education in a level-specific model are estimated at $6\hat{\beta}_1 + 5\hat{\beta}_2$. In the credentialist model, by contrast, only the level of education attained is determinant for individual earnings: "Individual years of educational attainment are not important; completion of a major level of schooling (obtaining the necessary educational credentials) is what is important for the determination of earnings.", (Goodman (1979, p. 270)). In this context schooling is primarily regarded as a signal, whereby the formal attainment of a level of education is regarded as an assurance that a (potential) worker possesses, in addition to knowledge and skills, a number of desired (productive) qualities, such as perseverance, intelligence, motivation, trainability, loyalty and flexibility (see, for example, Arrow (1973) and De Grip (1985)). The credentialist model is formulated as follows: $\ln(y_{ci}) = \alpha + \beta_1 dS_{Ei} + \beta_2 dS_{Si} + \beta_3 dS_{Ci} + \ldots + \varepsilon_i$ where dS_E, dS_S and dS_C are dummy variables indicating what educational levels have formally been attained or not. Insofar as the aforesaid worker with five years' secondary education has completed the education, then in the credentialist model as formulated by Goodman (1979) the initial schooling effect is estimated by $\hat{\beta}_1 + \hat{\beta}_2$ and by $\hat{\beta}_1$ where this secondary education has not (yet) been completed, i.e. as large as for a worker who has only gone through and completed primary education (ceteris paribus). The classical Mincer HCEF with a constant return for each schooling year S such as in equation (5.1) is named the linear model by Goodman. On the basis of the different S specifications described above, in his empirical investigation Goodman also distinguishes the following combined models: the linear/credentialist model and the level-specific/credentialist model. Using the 1970 US Census data, relevant information about different schooling categories (elementary school, high school, college and postgraduate school) and a number of additional determinants such as the age of the worker, the author concludes on the basis of the OLS findings that of the five different model variants, the level-specific/credentialist model has the highest explanatory power. In this combination model the position on the income ladder from the initial schooling is thus determined by, on the one hand, economic returns from the number of completed schooling years which may differ according to level and, on the other hand, by premiums for formal attainment of the different educational levels. Earnings premiums for attaining a school

128

diploma or, for example, a university degree are referred to in the literature as both credential effects and sheepskin effects (to graduation) (see, for example, Hungerford and Solon (1987) and Belman and Heywood (1991)).

Based on the results of the Hospitality Employees Study various schooling indicators can be distinguished. With regard to initial education, the questionnaire asks about the award of diplomas, whereby the education categories vary in level from low to high, and a further distinction is made between hospitality industry training (including MHS/MHO and HHS) and other types of initial education (general and other professional training). Due to the multiple response nature of the question on education the answers are not only informative as regards the attained educational level and focus, but also with regard to the education path followed. A further investigation reveals, however, that the totality of schooling in general education cannot be reliably estimated for a significant proportion of hospitality workers. The impossibility of investigating with a degree of reliability the influence of the preliminary stage of the highest educational level attained on individual earnings may be regarded as a limitation. The empirical literature identifies mixed research findings here. Gelderblom (1995) finds, for example, in a multivariate investigation with the 1990 OSA panel of labour supply ("OSA-arbeidsaanbodpanel") that there is a significant effect on income position from the training path followed only in the case of MBO education: "Someone having followed an LBO-MBO course is, generally, less well paid than someone who has followed a different preliminary stage.", (p. 46). In research into different returns on the labour market of an MBO and HBO diploma based on 1985-1992 OSA data, Van den Berg, Blees-Booij, Van der Ploeg and Meesters (1996) find that in an OLS setting the preliminary stage has no significant influence on earnings at all, though in their empirical analysis these authors distinguish only preliminary stages in HBO education, whereas Gelderblom (1995) looks at a wide spectrum of educational paths. Another limitation to the schooling question in the Hospitality Employees Study is that it provides no insight into general education that is not completed nor into education that is ongoing at the time of the questionnaire. In Groot and Oosterbeek (1994), in line with the combined models of Goodman (1979), positive income effects are also observed in the case of non-completed schooling. Accordingly, as a measure of the amount of schooling of a hospitality worker in general education, we can assume certain measurement errors in the education variable. Overestimation of the amount of education at the measurement date (September 2001) is also, however, conceivable. Fed by the perception of a relatively high proportion of highly trained workers with a secondary job in the Dutch hospitality industry, in section 3.6.2, for example, the possibility is raised that some hospitality workers may perhaps already have stated their current schooling (in higher education) to have been completed. Compared with the number of completed schooling years S as a traditional determinant of the individual earnings, there is an expectation that information concerning the schooling level and direction formally attained – having regard, inter alia, to the possible training paths in the Dutch education system – better satisfies the "...desideratum, having an "output" measure of schooling" (Griliches (1977, p. 3)), i.e. being more informative in regard to the human capital produced. Nevertheless, other factors which we can assume also help determine the wealth of the human capital of an individual, remain unspecified. On account of expected differences in the quality of schooling (based, for example, on the quality tables

("Kwaliteitskaarten") of the education inspectors) and the differences, for example, in personal attributes such as intelligence and motivation that result in differences in performance level at school (in terms of, for example, school report grades) it is conceivable that the same school diploma or university degree from two potential workers will be valued differently.

With regard to the amount of additional schooling in the hospitality labour market (formal and informal) as indirect indicators use can be made of both the age of the worker and the number of years employed in the hospitality industry. Theoretically, preference is given to the experience variable. From a neoclassical and institutional perspective (see section 5.2.4) we can expect that in addition to initial schooling the relevant work experience is especially determinant for the earnings position in the Dutch hospitality industry. Although age and hospitality experience correlate positively, with increase in age, there is perceived to be an increasing spread in the years of experience (see table 5.1). So, for example, female workers in the Dutch hospitality industry have on average less experience in the industry than males, and the difference generally increases with increase in age. In line with hypothesis 10a in chapter 3, these empirical findings illustrate the greater connection that males have for the hospitality labour market. In general, we can assume that relevant work experience is a better predictor of the earnings position in the Dutch hospitality industry than the age of the worker. Given the relative youthfulness of the employment structure and especially the presence of a collective agreement, the age of the worker as "...a factor in the depreciation of human capital stock." (Mincer (1974, p. 47)) with a possibly negative effect on earnings seems to be of minor significance in the Dutch hospitality industry (see also fn. 65).

Table 5.1: Workers in the Dutch hospitality industry by age, hospitality experience and gender, September 2001

	Age		**Hospitality experience (years)**					
	Total		**Male**		**Female**		**Total**	
Age group	*%*	*n*	$\bar{x}$	*s*	$\bar{x}$	*s*	$\bar{x}$	*s*
Under 20 years	27.2	308	1.7	1.4	1.7	1.3	1.7	1.4
20-24 years	25.1	284	3.9	2.4	3.2	2.4	3.5	2.4
25-29 years	12.3	139	5.9	3.6	4.7	3.6	5.4	3.6
30-34 years	9.6	109	9.7	5.7	7.4	5.6	8.4	5.8
35-39 years	8.0	91	11.3	8.7	9.4	7.1	10.4	8.0
40-44 years	5.5	62	14.5	10.7	7.6	8.4	10.7	10.0
45-49 years	5.8	66	16.9	9.0	9.2	8.5	12.9	9.5
50+ years	6.6	74	17.5	15.0	13.5	10.9	15.5	13.2
Total	**100**	**1,132**	**7.0**	**8.1**	**5.1**	**6.1**	**6.0**	**7.2**

Source   : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

                : n = The number of observations corrected for the under- and overrepresentation in the net sample.

Apart from age and experience in the industry as indirect indicators of the extent of additional schooling in the labour market, in estimating the various earnings equations also use can be made of direct information on additional training from the Hospitality Employees Study, namely in the form of individual data concerning completed courses geared to working in the hospitality industry (see, for example, section 3.6.3). Compared with many other empirical earnings studies this possibility can be regarded as an improvement in the basis of the research.

It is clear that the results of an HCEF or a more extensive earnings function primarily cast light on the financial benefits of general education. Although the same designation is usually used, these returns should not be generally confused with the related concept of return on education. To assess whether participating in (subsequent) training is economically profitable, it is necessary to confront the benefits with the costs of education: "The "returns" notion necessitates taking into account the cost of education, whether private or social, and relating this cost to the wage effect.", (Psacharopoulos (1994, p. 1326)). An individual's direct education costs include college and school tuition fees, the cost of study materials and travel costs. Training, for example, at a hotel management school (HHS) involves the cost of tuition fees, the purchase of books, uniform and knife sets, and contributions to excursions and temporary work placements, by which the total direct costs can differ per study year. For older youngsters still at school and students, however, it is the lost net income during the additional study period that forms the most significant costs element in an analysis of individual return (see, for example, Odink (1995, p. 21)). Based, for example, on the MHS-HHS hospitality educational route, these opportunity costs for an HHS student consist of total net income that one averagely could have earned in the labour market during the study period of four years (for a bachelor's degree) with an MHS diploma. In contrast to the education costs are, for example, the individual returns in the form of the expected higher net income in the labour market after completing the subsequent education. In the MHS-HHS example this concerns the difference between the average net income as an 'HHS-er' (with the MHS preliminary schooling) and the average MHS income, naturally taken over the entire working period. In determining the opportunity costs and the extra returns from a training compared to a 'lower' training, the literature often makes use of the empirical findings of a relevant HCEF, in particular of the estimated age-income profiles for various schooling categories (perhaps further differentiated according to gender, etc.). Under various assumptions, including the length of subsequent education, the chance of labour market participation at a certain age after general education and the degree to which the higher income can be attributed to the additional schooling investments (selectivity), these alternative costs and additional financial benefits can be directly calculated from the relevant income profiles. To identify other financial costs and benefits of schooling (direct schooling costs, student grants, etc.) use is usually made of additional external sources of information (see, for example, Gelderblom (1995)). Once an estimate is available of all costs and benefits under consideration, for the measurement of the economic return of schooling frequently use is made of the internal discount rate which makes the present value of the flow of returns equal to the present value of the flow of investments. If this internal discount rate is larger than the reference interest rate (capital market interest), then the training (path) under consideration can be regarded in financial terms as profitable. Return estimates are

used as an indication of shortage or surplus in the labour market and, for example, as scholarly information for education policy to stimulate or discourage certain areas of schooling. In this view high returns are regarded as an indication of relative scarcity, by which rational, financially driven youngsters at school are encouraged to follow the relevant training path. Relatively high returns can serve as an argument for policymakers to direct available public funds for education more towards these areas of shortages for reasons of efficiency[69]. Through a greater supply of relevant human capital the shortage of schooling, reflected in high returns, will disappear over time. In the case of low returns as an indication of over-investment, the expected allocation process is the opposite: "We expect balancing effects from differences in return." (Theeuwes (1995, p. 29))[70]. It is clear that a cost benefit analysis of schooling is not a part of the present investigation. For testing the empirical plausibility of a segmented labour market, in this chapter the interest lies primarily in the perceived wage-setting processes for various worker groups in the Dutch hospitality industry.

In addition to various schooling indicators traditional earnings equations also usually control for group characteristics such as gender and ethnicity. The absence of these individual characteristics as determinants in some earnings studies is mostly the result of selectivity of the sample, mostly pointing to the confinement of an empirical investigation of (white) males such as in, for example, Mincer (1974), Heckman and Polachek (1974), Griliches (1977), Willis and Rosen (1979), Brown (1980), Murphy and Welch (1990) and Harmon and Walker (1995). For a more unbiased estimate of the effect of, for example, the gender of a worker on the earnings position, it is obviously desirable to have particular regard in

---

[69] Familiar in this policy context are, for example, the articles on the returns to education by Psacharopoulos (1981, 1985, 1994) which contain, on the basis of the empirical findings from initially a few, but later many, international return studies, summaries of the private and social returns for various training categories in different parts of the world, and which consider the implications for development policy. According to Psacharopoulos, the conclusions that can be drawn from the average returns are fairly robust over time: "The results of this update are fully consistent with and reinforce earlier patterns. Namely, primary education continues to be the number one investment priority in developing countries, educating females is marginally more profitable than educating males, the academic secondary school curriculum is a better investment than the technical/vocational track, and the returns to education obey the same rules as investment in conventional capital, i.e. they decline as investment is expanded.", (Psacharopoulos (1994, p. 1335)).

[70] As commentary on the return estimates in OSA (1995) for various Dutch schooling paths based on the 1990 wave of the OSA panel of labour supply, Theeuwes (1995) contributes to this OSA bundel a few comments to this "allocative working hypothesis" (p. 31) and concludes: "It is not impossible that a high return is favourable to the improvement in a shortage in a certain schooling category and that a surplus in a schooling group leads to lower relative returns, but this is far from certain. There is certainly no one-to-one relationship. It is a link that needs to be interpreted with the necessary caution and with an open mind. However, it is my expectation that imbalances in the labour market are expressed in the start phase of a working life and with recent arrivals on the labour market and that 'insiders' with years of accumulated interests are much less susceptible to the results of a surplus or shortage in the labour market.", (p. 33). For a more detailed explanation of the methodology of the cost benefit analyses in OSA (1995), see Gelderblom, 't Hoen and De Koning (1994), Gelderblom and De Koning (1994) and Gelderblom (1995).

empirical earnings equations to clear correlations between several covariates, such as the observation that in the Dutch hospitality industry female workers in general have less experience in the industry than males (see table 5.1) and are relatively more often employed in institutionally lower-valued occupations (see table 5.2).

Table 5.2: Workers in the Dutch hospitality industry by gender, department and occupation (%), September 2001

Department/ occupation	Male	Female	Total	
	%	*%*	*%*	*n*
Kitchen	69.0	31.0	100	303
including:				
- Assistant	*57.0*	*43.0*	*100*	*86*
- Cook	*74.4*	*25.6*	*100*	*129*
- Chef	*85.5*	*14.5*	*100*	*55*
Service	38.1	61.9	100	599
including:				
- Cafeteria worker	*30.2*	*69.8*	*100*	*281*
- Fast food restaurant worker	*34.8*	*65.2*	*100*	*92*
- Bartender	*54.6*	*45.4*	*100*	*97*
- Senior service worker	*45.2*	*54.8*	*100*	*31*
- Service head	*62.8*	*37.2*	*100*	*43*
Reception	37.0	63.0	100	46
Housekeeping	40.0	60.0	100	70
Management	57.6	42.4	100	66
Other departments	56.3	43.8	100	48
Total	**48.3**	**51.7**	**100**	**1,132**

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : Kitchen = assistant (production helper), (un)qualified cook, (sous) chef, kitchen manager and other kitchen employees; service = cafeteria worker, cafe worker, fast food restaurant worker, bartender, senior service worker (inclusive of roomservice), service head, manager and other service employees; reception = (night) porter, receptionist, reception head, front office manager and other reception employees; housekeeping = dishwasher, cleaning person, chambermaid, head housekeeper, head general service, housekeeping manager and other housekeeping or general service employees; management = administrator, secretary, system manager, head accounting, manager and other management functions.

: Some occupations (or worker groups) in the Hospitality Employees Study are (further) grouped: cook = unqualified and qualified; chef = sous chef, chef and kitchenmanager; cafeteria worker = cafeteria plus cafe worker; service head = service head and manager.

: n = The number of observations corrected for the under- and overrepresentation in the net sample.

Women are more than average employed in service, at reception and in housekeeping, whilst men are more frequently employed in the kitchen and in management. Almost 70 per cent of all executive functions in the Dutch hospitality industry are performed by males. For example, 86 per cent of all sous-chefs, chefs and kitchen managers are men. Examples of occupations in the Dutch hospitality industry performed more than average by women include cafeteria worker, fast food restaurant worker, receptionist, dishwasher, cleaning person and chambermaid. These findings regarding gender are (of course) in line with the segmentation picture in chapter 3; combine, for example, table 3.9 and table 3.14. The segmentation theory predicts that the influence of group characteristics on the wage-setting process decreases as a worker is positioned higher up the labour ladder: "…in the lower occupational strata, group characteristics (class, race, sex) dominate the determination of wage levels, while individual characteristics (education, skills) become more dominant only in the numerically far less important upper occupational strata.", (Vietorisz and Harrison (1973, p. 374)). The traditional expectation is that women earn less on average than men and "minorities less than majorities" (ceteris paribus). Given the availability of data in the Hospitality Employees Study, in the different earnings equations use is made of a dummy variable referencing the Netherlands or abroad as the country of birth as an indicator for the ethnicity of a hospitality employee.

This section is concluded with a short consideration of a number of possible sources of biases in the estimated OLS effects of the included determinants on individual earnings. In the literature particular attention is focused, for example, on the concept of ability[71] as an aspect of the human capital of an individual, for which there is an assumption in advance of a separate positive effect on the income position and expected to correlate positively with the amount of initial schooling. Applying these (and several other) assumptions, the non-inclusion of an ability measure as a determinant leads to a certain *overestimation* of the (assumed constant) initial schooling parameter in a traditional human capital model. The omission here of relevant variables thus creates a positive ability bias. A classic example may be found in Griliches (1977), repeated in Willis (1986)[72]. Although discussions in the

---

[71] With regard to the meaning of ability the following passages from Griliches (1977, pp. 6-7) are informative: "Two polar views are possible. "Ability" is IQ, or something close to it, and the only problem is that our measures of it are subject to possibly large (test-retest) errors. If we had data on more than one test or on some other relevant instrumental variables, this would be a simple garden-variety "errors-in-the-variables" problem, to be solved by standard econometric techniques. The alternative view is that "ability", in the sense of being able to earn higher wages, other things equal, has little to do with IQ. […] It is an unobserved latent variable that both drives people to get relatively more schooling and earn more income, given schooling, and perhaps also enables and motivates people to score better on various tests. […] As such, it is only loosely related to "ability" as it is commonly understood by psychologists. […] It could just as well be "energy" or "motivation". To the extent, however, that test scores are admitted as "indicators" of such an unobservable, one can stake out some middle ground between these two extreme views."

[72] In this example a true earnings function is assumed with just two determinants: general education S and ability A, as well as the classical assumptions: $\ln(y_c) = \alpha + \beta S + \gamma A + \varepsilon$. Where an estimation of the earnings function with OLS wrongly excludes the ability variable, then $\hat{\beta}$ is a biased estimator of β, such that the bias is equal to γb_{AS} and b_{AS} is the parameter estimate of a regression of A on S. The conclusion of a positive ability

literature of the problem of ability bias mostly highlight the potential biases for the estimated initial schooling effect, it is clear that in a traditional earnings function with not just one, but several predictors, and in which it is assumed that only the ability variable has been wrongly disregarded, can actually affect the unbiasedness of *all* parameter estimators. The problem of possible biases in the context of omission of relevant variables becomes more complex if we make the more general (and perhaps more realistic) assumption of an earnings function with a number of variables included and a number of relevant variables excluded (not just ability). In this general situation of misspecification, the bias in each of the estimated parameters of the included variables is equal to a weighted sum of the parameters of all excluded variables (see, for example, Maddala (1992, p. 163)). It is clear that any ability bias in this case is possibly overshadowed by biases resulting from the omission of other relevant variables with the possible final outcome of a much larger overestimate or an underestimate of the initial schooling effect. The literature proposes various solutions for correcting the ability bias. The first method is to include one or more ability measures as additional determinants in the earnings function such as the scores for "psychometric mental and physical ability tests such as IQ, AFQT, tests of visual acuity and so on." (Willis (1986, p. 581)) or, for example, relevant family background variables such as the education, occupation or income of a parent (or parents). The extent of the (absolute) ability bias in the estimated schooling effect (and other effects) can then be assessed by comparing the empirical findings of an earnings function with and without the ability variable(s). A second category of solutions originate from the assumption of measurement errors in the ability variable: "There is, however, an obvious question whether tests really measure "true ability" and, if so, how well. To the extent that the measured ability measures are imperfect or incomplete representations of "true ability" there remains the possibility that the effects of schooling and experience will still be subject to ability bias even when measured ability is controlled.", (Willis (1986, p. 583)). A classical solution in case of assumed measurement errors in the ability variable and the resulting contemporaneous correlation with the (now combined) error term in the earnings function is to make use of IV as an estimation technique with, for example, relevant family background variables as instruments. A third corrective method is the use of a siblings or twins model. Applying certain assumptions, by taking first differences (between relatives) of the earnings function, a significant part of the ability bias can be removed: "To the extent that siblings share some of the unobservables, they can effectively serve as "instruments" for each other.", (Griliches (1977, p. 9); see also Ashenfelter and Zimmerman (1993) and Ashenfelter and Krueger (1994))[73].

---

bias is then based on the following assumptions: "…(i) that "ability" has an independent positive effect on earnings $(\gamma > 0)$ above and beyond its effect on the amount of schooling (correctly measured) accumulated; (ii) that the relationship in the sample between the excluded ability and included schooling variables is positive $(b_{AS} > 0)$; and (iii) that this is the *only* variable that has been left out *and* that all the other usual least squares assumptions hold.", (Griliches (1977, p. 4)).

[73] This is illustrated by the example in Willis (1986), in which a simple cross-sectional earnings function $\ln(y_c) = \alpha + \beta S + \gamma A + \varepsilon$ is assumed with general education S being regarded as exogenous and whereby unobserved ability A for individual i "…may be regarded as the consequence of the genetic and environmental contribution of the family." (p. 584). In particular, it is assumed that $A_i = G_i + E_i$ where G_i and E_i are the genetic and environmental influences respectively of the parental home on ability and are possibly correlated. By

Another source of possible biases in the OLS results of an earnings function closely examined by the literature is based on specific assumptions regarding the initial schooling variable, namely the presence of measurement errors and the assumption that the following of schooling and further education is not exogenous, but is a rational decision-making process in line with neoclassical expectations. Both assumptions imply endogeneity of the perceived initial schooling variable. Instrumental variables and simultaneous equations are examples in this schooling context of suitable alternative estimation techniques. Applying the neoclassical assumption that more general schooling leads on average to a better income position, measurement errors in the observed amount of schooling in a classical errors-in-variables context imply a certain *underestimate* of the initial schooling parameter. In order to deal with the problem of endogeneity of schooling, some empirical investigations use certain exogenous influences on the amount of schooling as an instrument for the schooling variable, such as the quarter of birth (Angrist and Krueger (1991)), the proximity of the parental home to a university (Card (1993)) and dummy variables based on the years in which, in the UK, compulsory education is extended (Harmon and Walker (1995)). Examples of studies in which the position on the income ladder and the amount of initial education are explained in a two-equation system and which focus specifically on the measurement level of the schooling variable are Willis and Rosen (1979), Garen (1984) and Harmon and Walker (1995). In Willis and Rosen (1979) the choice of school is assumed endogenous, resulting in two possible levels: "level A (for more than high school) and level B (for high school)" (p. S12) and consequently in a simultaneous setting estimated via a probit model with explanatory variables the expected income benefit of choice A over B, various ability measures and different family background variables as an indicator of, for example, preferences and financial opportunities. In Garen (1984) and Harmon and Walker (1995) also, the endogenous schooling choice, in particular the number of schooling years, is handled discretely and likewise as a variant of a standard simultaneous-equations model estimated with an ordered probit model.

Not only can the problem of potential biases in the estimated OLS effects be discussed within the classical assumption of constant parameters, but also in a setting of assumed variable parameters in an earnings function. Card (1999) presents a recent overview of this literature, in which particular attention is also focused on the aforementioned sources of biases and directions to find solutions, but now within the assumption of, inter alia, heterogeneity in the initial schooling parameter ($\beta_1 = \beta_{1i}$ in equation (5.1)). Some empirical studies attempt to *explicitly* model this variation in the returns on initial schooling with as

---

making use of relevant information on relatives, in particular twins, in these (and other) assumptions then by taking first differences (between the relatives) of the earnings function a part of the traditional correlation between S and A can be removed. In the case, for example, of individual twins (i, j) and n pairs, the *FD* model specification is: $\ln(y_{ci}) - \ln(y_{cj}) = \beta(S_i - S_j) + \gamma(G_i - G_j) + \gamma(E_i - E_j) + \varepsilon_i - \varepsilon_j$ (see equation (72) in Willis (1986)). Distinguishing between monozygotic (MZ) and dizygotic (DZ) twins, Willis (1986, p. 585) concludes: "When it is applied to MZ twins, the within-family model can completely eliminate ability bias if it is assumed that individuals who grow up in the same family have identical environmental components and that individuals who have identical genes have identical genetic components.". For DZ twins also a within-family model entirely removes the environmental influences under these assumptions and the dispersion in the genetic component is expected to be much smaller than by randomly chosen pairs in a sample.

determinants various indicators for the quality of schooling and, for example, personal characteristics such as ability and family background (see, for example, Card and Krueger (1992) and Altonji and Dunn (1996a,b)). With a relevant earnings function, Card and Krueger (1992) firstly estimate on the basis of US 1980 Census data with individual information average rates of return to education, differentiated according to State of birth (49 states) and three cohorts (each of ten years), for males born between 1920 and 1949. The resulting 147 estimated initial schooling parameters are then regressed in different model variants on three indicators of the quality of the received education (pupil/teacher ratio, term length and relative teacher pay, averaged per state and cohort of birth[74]), two family background variables (parental income and education) and a few other control variables. On the basis of the various estimation results the authors conclude that: "…rates of return are higher for individuals who attended schools with lower pupil/teacher ratios and higher relative teacher salaries." (p. 3). Controlled for the different quality indicators the income and education of the parents generally have no additional explanatory power. In a separate investigation, Card and Krueger (1992) further illustrate that a higher quality of schooling also has significant influence on the number of schooling years, such that: "…increases in school quality affect subsequent earnings by increasing the number of years of completed education and by increasing the return to each year of schooling." (p. 3). Applying information about relatives in the US National Longitudinal Surveys (NLS, 1966-1988) and Panel Study of Income Dynamics (PSID, 1968-1989), Altonji and Dunn (1996a) also identify positive effects of school quality on the return to education. By contrast, however, the empirical findings with regard to the influence of parental education[75] (1996b) are equivocal: "…for men in the PSID and NLS with fixed effects included, we find a substantial positive effect of the parents' education, particularly mother's education, on the education slope. For women, the fixed effects results show a substantial effect of mother's education in the NLS, but not in the PSID. When we pool the PSID samples of men and women and include fixed effects, we obtain a modest positive effect of mother's education on the education slope. However, the pooled NLS results show little effect of parental education on wage slopes despite the strong positive effects for men and women considered separately.", (p. 693). In contrast to the empirical analysis in Card and Krueger (1992) in two steps, Altonji and Dunn (1996a,b) estimate various earnings functions (including

---

[74] Card and Krueger (1992, p. 9) hypothesize that "…increases in term length increase the amount of material covered in a school year and thereby increase the economic value of additional years of schooling. We similarly hypothesize that reductions in the pupil/teacher ratio improve the quality of classroom instruction and lead to higher returns for each year of completed education. Finally, we hypothesize that higher teacher salaries enable schools to attract and retain more qualified and highly motivated teachers, leading to improved classroom instruction and higher returns to education."

[75] Altonji and Dunn (1996b) hypothesize in advance a significant influence of parents on the performance of their children at school: "It is also natural to hypothesize that parents have large effects on the economic value of time in school given the abundant evidence that parental education and income and other variables have large effects on cognitive development in the pre-school years, quality of schooling received, and achievement in school. One would presume that these variables are related to how much a child learns during a year in school, and hence, to the associated labour market payoff.", (p. 692).

within-family models) with several determinants, including the initial schooling of the respondent and interaction terms between, on the one hand, this schooling and, on the other hand, parental education, school-reported IQ score of the respondent and various school quality characteristics such as spending per pupil and average teacher salaries.

In summary, depending on the *structure* of the research data (cross-section, panel data or, for example, individual information about relatives) and assumptions (such as endogeneity of, or measurement errors in the schooling variable), with the presence of specific *variables* such as indicators of ability, family background and school quality corrections can be made in several ways for certain potential biases in the estimation results, such as the application of a relevant family background variable as (a) an additional determinant in an earnings function (as a control or as an indicator for ability), (b) an instrument for ability on the assumption of measurement errors in the relevant ability measure, (c) an instrument for the amount of schooling on the assumption of measurement errors in the schooling variable, (d) a determinant in an explanatory model of the amount of schooling and (e) a determinant in an explanatory model of the (variable) return to education.

The above examination of possible sources for biases and types of solution chiefly serves to put the current empirical investigation of individual earnings differences in the Dutch hospitality industry in perspective, to indicate better certain limitations and at the same time to indicate possible routes by which the research can be given further shape in the future. Collecting relevant information about the ability and family background of hospitality workers and school quality characteristics can thus be regarded as a point for attention for the research agenda. Such a widening of the basis of the research is perhaps possible by expanding the current questionnaire for the Hospitality Employees Study (family background) and also by making use of relevant (more objective) external information sources (ability, school quality). In addition, the analysis opportunities can be increased by building up a panel structure of the worker database and, albeit with a perhaps lower priority, by collecting individual information about relatives. With these examples of possible increases in scope and depth of the Hospitality Employees Study, repeat research can not only evaluate the robustness of the current OLS estimation results, but these findings can also be placed in a more varied perspective (for example, in relation to IV and simultaneous equations) and certain presumed biases in the estimated effects can be numerically estimated.

5.2.2. Demand factors: job/firm characteristics and market conditions

In a traditional neoclassical setting, earnings differences between workers are primarily associated with differences in individual characteristics referencing, for example, initial schooling, age and relevant work experience (see section 5.2.1). On the demand side of the labour market also, however, factors can be identified which in advance can be assumed to have an influence on the earnings position of workers. Examples of these determinants are the branch of industry in which the worker is employed, the firm size, the cyclical labour market situation and earnings differentiation to compensate certain job discomforts and work-related risks (see, for example, Brown (1980), Rosen (1986), Krueger and Summers (1988), Oi and Idson (1999) and Berkhout, De Graaf, Heyma and Theeuwes (2001)).

Even after correction for various worker characteristics and working conditions, (inter)national empirical investigations, following Krueger and Summers (1988), mostly observe separate industry effects on the earnings position. This observation can be regarded as a critique of the neoclassical model of the labour market (see, for example, Teulings, Webbink and Kalwij (1992, p. 5)). On the basis of several waves of the OSA panel of labour supply (1990-1998) and alternative model specifications, Berkhout, De Graaf, Heyma and Theeuwes (2001) conclude that in the Netherlands significant industry effects on hourly wages can be identified, even after controlling for influences such as schooling, age, work experience and gender of the worker. The Dutch hospitality industry, in their study, is a clear example in which workers in general earn less than their colleagues in other sectors. Given that it is the hospitality industry that is the subject of this research, this chapter investigates a possible sector effect on the actual earnings profile of workers at a lower aggregation level by including business group dummies in the different earnings equations referencing the cafe sector, the fast food sector, the restaurant sector and the hotel sector.

Furthermore, within different branches of industry also a significant positive firm size effect (usually based on the number of workers) on hourly wages is often observed. Again, even after controlling for various worker and job characteristics: "…large employers demand more productive employees where "productive" is described by the usual proxies, education and experience. However, even after controlling for worker characteristics, the data support the presence of a positively inclined wage-size profile.", (Oi and Idson (1999, p. 2182)). Also based on US CPS data, Mellow (1982) finds comparable results. A wage premium in larger firms is, however, perceived in many countries: "The relation of wages to firm size is ubiquitous.", (Oi and Idson (1999, p. 2177)). Berkhout, De Graaf, Heyma and Theeuwes (2001) also find, in various multivariate OSA settings, a significant firm size effect in the Dutch labour market: "…large businesses pay more than mid-sized businesses, which in turn pay more than small businesses;", (p. 54). The literature puts forward several explanations for this wage-size profile, including "…(1) matching workers and entrepreneurs to minimize the sum of wage and monitoring costs; (2) paying efficiency wages to deter shirking; and (3) sharing the surplus of revenues over labour costs with workers.", (Oi and Idson (1999, p. 2189))[76]. The existence of efficiency wages can also be regarded as an objection to the neoclassical model. Several studies perceive a positive wage-size profile at both the firm and establishment level (see, for example, Brown and Medoff (1989)). Classifications of firm size vary per study, whereby the largest firms are not infrequently designated as 100+, 500+ or even 1000+ businesses. Given the emphatic smallness in the Dutch hospitality industry (see, for example, Klomp (1996) and the Dutch Board for the Hospitality and Catering Industry (2005)) and the findings of the Hospitality Employees Study, this chapter includes in the earnings equations adjusted indicator variables for employer size, pointing to

---

[76] See also, for example, Shapiro and Stiglitz (1984), Katz and Summers (1989), Kruse (1992) and Teulings, Webbink and Kalwij (1992).

establishments with 1-9 employees, 10-19 employees, 20-49 employees and 50+ employees[77].

Imbalances in the labour market can also be assumed to influence the earnings position. In periods of economic prosperity with need for labour, as well as in submarkets with a relatively large employee turnover and hard-to-fill vacancies, we can expect that the earnings will to a certain extent be forced up. The issue here is possible pressure points in staffing due to "high recruitment needs" or to "difficulties in recruitment" (Berkhout, De Graaf, Heyma and Theeuwes (2001, p. 44)). Expectations are that neither sort of sticking point is unimportant in the Dutch hospitality industry, since the industry is characterised, for example, by a strong external labour market dynamic, both in absolute terms and in comparison with other branches of industry (see chapter 8). Furthermore, several representative studies of *employers* reveal that the incidence of hard-to-fill vacancies in the Dutch hospitality industry is not an unknown phenomenon: "Approximately 35% of all businesses with employees in this period [April 2000 – September 2000] had hard-to-fill vacancies. This is a small increase on 1998 when a third of businesses indicated that they had had hard-to-fill vacancies.", (Dutch Board for the Hospitality and Catering Industry (2001, p. 106)). The influence of economic cycles on the earnings position can, for example, be modelled by including year dummies in an earnings equation, thereby making use of various cross-sectional data sets over time (such as panel data). Fitting in with the cyclical picture in the Netherlands, Berkhout, De Graaf, Heyma and Theeuwes (2001) using the OSA panel of labour supply (1990-1998) observe a significant negative year effect of 1994 on earnings growth (in real terms and compared with 1990). Relevant variables such as individual earnings of hospitality employees are only available for one measurement moment (September 2001) and, therefore, it is clear that the Hospitality Employees Study does not enable such an empirical analysis at this moment (see also section 5.2.1). In line with the approach by Berkhout, De Graaf, Heyma and Theeuwes (2001), the addition to the corresponding individual workers' data from the 2001-employees study of relevant indicators from the aforementioned 2000-employers database, such as the percentage of hard-to-fill vacancies differentiated according to business group and firm size, can be regarded as a method of estimating the assumed delayed effect of difficulties in recruiting personnel on individual earnings. We do not, however, apply such a linkage of average demand to individual supply data in this chapter.

---

[77] An explanation for the emphatic smallness of establishments in the Dutch hospitality industry may be the limited opportunities to obtain economies of scale, a situation in which a substantial increase in the level of production leads to a cost reduction. In this respect the particulars of the production process can be considered to be an important determinant. In the hospitality industry the moments of production and consumption are generally close to each other, pointing to the (almost) non-storability of hospitality services and the limited-storability of, for instance, meal components. As a result of technological changes, such as unlinked cooking, meal components or even complete meals can nowadays be produced and stocked in advance. However, this storability is limited, because the eating products provided are perishable. Overall, economies of scale are expected to be of rare occurrence in the hospitality industry, partly explaining its fragmentation, pointing to the many and equivalent small- and medium-scaled industry competitors and the absence of dominating large businesses (exceptions excluded).

It is also a neoclassical assumption that employers will apply earnings differentiation to compensate for certain working conditions: "The hypothesis of compensating wage differentials states that relatively lower earnings are compensated by good fringe benefits and other favourable job characteristics. According to this hypothesis, less good fringe benefits and unattractive job characteristics will be made good by relatively higher earnings. The alternative hypothesis is that there is no compensation and that primary and secondary terms of employment and job characteristics go hand in hand. They are either all good, or all bad.", (Berkhout, De Graaf, Heyma and Theeuwes (2001, p. 45))[78]. Given the choices available, it is assumed that a worker is rational and that he chooses the job (combination of earnings and other job characteristics) that gives him the greatest utility (see, for example, Rosen (1986)). In testing the hypothesis of compensating earnings differentials the empirical literature often identifies mixed results, i.e. "…some clear support for the theory but an uncomfortable number of exceptions." (Brown (1980, p. 118)) pointing to insignificant or significant but wrongly signed parameter estimates of those non-earnings job characteristics assumed to create compensating wage premiums. The literature cites various forms of misspecification as possible explanations for the inconsistent estimation results, including the non-explicit modelling of the simultaneity between individual wage rates and job hazards (McLean, Wendling and Neergaard (1978)), the omission of relevant explanatory variables (Brown (1980)) and the assumption of a single competitive labour market instead of a segmented labour market (Graham and Shakow (1990))[79]. In this chapter we are primarily interested in the testing of the empirical plausibility of the hypothesis of

---

[78] See also Rosen (1986, pp. 641-642): "Activities that offer favorable working conditions attract labour at lower than average wages, whereas jobs offering unfavorable working conditions must pay premiums as offsetting compensation in order to attract workers. Measurable job attributes on which compensating wage differentials have been shown to arise empirically include: (i) onerous working conditions, such as risks to life and health, exposure to pollution, and so forth; (ii) intercity and interregional wage differences associated with differences in climate, crime, pollution, and crowding; (iii) special work-time scheduling and related requirements, including shift work, inflexible work schedules, and possible risks of layoff and subsequent unemployment; and (iv) the composition of pay packages, including vacations, pensions, and other fringe benefits as substitutes for direct cash wage payments."

[79] McLean, Wendling and Neergaard (1978, p. 98) write: "The degree of work hazard is hypothesized to be a partial determinant of the worker's wage rate and the wage rate is a partial determinant, through the incentive to reduce total costs, of the accident rate. The foregoing argument makes it clear that when estimating compensating differentials for work hazard, one must be aware of the simultaneous equations nature of the problem."; Brown (1980, p. 113): "Previous research provides only inconsistent support for the theory, with wrong-signed or insignificant estimates of these wage premiums fairly common. An often cited reason for these anomalies is that important characteristics of the worker remain unmeasured, biasing the estimates."; Graham and Shakow (1990, pp. 307-308): "In our view these problematic empirical outcomes point to a critical weakness in the theory of compensating wage differentials and in the conception of the labour market under capitalism which it reflects. As Brown notes, "labour markets are simply not as competitive as the theory of equalizing differences assumes" (1980, p. 131). We would go farther and argue that the wage determination process takes multiple forms, both competitive and noncompetitive, and that the empirical relationship between wages and risk is best explained by assuming a segmented labor market."

compensating earnings differences for certain job discomforts in the Dutch hospitality industry on the assumption of labour market segmentation. Information about secondary terms of employment is not available in the Hospitality Employees Study. The segmentation theory predicts earnings compensation for various job disutilities only for primary employees: "…compensation for risk and general disutility is positive and significant for primary workers, while largely absent for secondary workers." (Graham and Shakow (1990, p. 312)).

Consistent with the Hospitality Industry Reference Functions Manual ("Handboek Referentiefuncties Bedrijfstak Horeca", Landelijke Bedrijfscommissie voor het Horecabedrijf (1993)) job hazards and unalluring job characteristics in the Dutch hospitality industry are assumed to be a not unknown phenomenon. Table 5.3 presents a selection of these inconveniences contained in the Hospitality Industry Reference Functions Manual applying to some occupations in the kitchen, service, reception and general service. These are examples of occupations that can be typically described as both secondary, such as kitchen assistant and cleaner, and primary, such as cook and receptionist (see also table 3.9).

According to the Injury Information System 2001 ("Letsel Informatie Systeem (LIS)") which registers all accidents at work treated by Emergency Admissions ("Spoedeisende Hulpafdeling (SEH)") of a hospital in the Netherlands, the hospitality industry is observed to be one of the risk sectors: "Risk sectors appear especially to be the hospitality, construction and metal industries (with 28, 27 and 26 work injuries per 1,000 persons employed in the relevant sector respectively).", (Stichting Consument en Veiligheid (2003, p. 7))[80]. Given SEH treatment the injuries here thus refer specifically to more serious accidents at work. In 2001, in the Netherlands we observe 15 accidents at work per 1,000 employed persons. For both men and women the chance of a SEH accident at work is highest in the Dutch hospitality industry, 3.4 and 2.1 per cent respectively. For all branches of industry the chance of SEH treatment following an accident at work decreases with an increase in age. Accordingly, the risk to the youngest represented age group of 15-24 years in the Dutch hospitality industry is estimated at 4.4 per cent. With regard to the circumstances surrounding accidents in the Dutch hospitality industry, half are the result of contact with a cutting or other sharp implement. With this type of accident the hospitality sector is a clear frontrunner, the trade sector following (next) at a wide distance. Examples of other causes that more than averagely lead to SEH treatment in the Dutch hospitality industry are stumbling and slipping on an even level, acute physical strain and contact with a hot liquid

---

[80] Although the LIS research may in general be regarded as representative, we should note that in the presentation of the number of accidents at work per 1,000 persons in the respective sector the numerator for this estimation of incidence includes all accidents at work irrespetive of age and working hours, whilst the denominator, on the basis of data from the "Enquête beroepsbevolking (EBB)" from Statistics Netherlands restricts the incidences to ages 15-64 years and a working week of at least 12 hours. This means that for certain groups one could imagine a possible distortion, such as an overestimate of the risk of an accident at work for persons employed in the Dutch hospitality industry. Another source of possible biases is the finding that in a significant percentage of the LIS accidents at work the industry sector in which the injured person worked is unknown.

or steam (Stichting Consument en Veiligheid (2003, p. 58)). Types of labour accidents that score below average in the hospitality industry, but which clearly occur, are stumbling, twisting and wrenching on an even level, falling down stairs or from a ladder or otherwise, and contact with, for example, a crushing or moving object.

Table 5.3: Examples of occupational risks and discomforts in the Dutch hospitality industry

Department/occupation	Occupational risks and discomforts
Kitchen/assistant	Lifting products. Walking and standing work, mostly restricted to a particular place. Sometimes work pressure during peak times in terms of guest numbers. Risk of injury through handling knives and operating cutting machines.
Kitchen/cook	Lifting / putting down of pans, foodstuffs, ingredients, etc. Walking and standing work, mostly restricted to a particular place. Hot temperatures when working with cookers. Work pressure during peak times in terms of guest numbers. Risk of injury through handling knives, operating kitchen equipment, heated appliances and slippage on floors.
Service/cafeteria worker	Lifting / putting down of boxes and deep fat fryer baskets. Walking and standing work. Heat and steam from deep fat fryers. Risk of injury through handling knives, heated appliances and slippage on floors.
Service/service head	Working along with the team: Lifting trays, dishes and plates. Walking and standing work. Sometimes stretching up / bending down. Fast pace at peak times in terms of guests or orders. Risk of injury through handling warm / hot plates, bowls, etc.
Reception/receptionist	Standing work, sometimes work restricted to a particular area. Stressful occasions such as the simultaneous checking in and out of guests and operating the telephone switchboard.
General service/cleaning person	Lifting buckets of water and using strength in hands to clean. Walking, standing and working in an unnatural position. Unpleasantness of cleaning sanitary facilities. Risk of injury through falling down stairs.

Source : "Handboek Referentiefuncties Bedrijfstak Horeca" (Landelijke Bedrijfscommissie voor het Horecabedrijf (1993)).

In estimating the different earnings functions and thereby testing the hypothesis of compensating earnings differentials use will be made of the many aspects of physical and mental workload as identified in the Hospitality Employees Study. In line with expectations, these work attitudes reveal a large degree of correlation in the responses: workers who generally consider their work to be *good* score positively for various aspects of physical and

mental workload significantly more often than employees who score *not good* or *moderate* for overall job satisfaction. From the point of view of parsimony and the avoidance of a large degree of collinearity, the technique of factor analysis is chosen for the different individual work attitudes that directly or indirectly refer to a job-related discomfort or risk of illness or injury to be represented by a limited number of independent and interpretable factors, whereby the information in the original variables is preserved as far as possible. These factors can therefore be regarded as orthogonal stand-ins for the original work attitudes. In this chapter a number of the corresponding factor scores are included as predictors of individual earnings in the various earnings functions, and in chapter 8 as determinants of overall job satisfaction, job search behaviour and individual labour mobility. The method by which these factor scores are estimated is discussed in the next section.

5.2.3. Individual work attitudes summarised using factor analysis

In the first instance, a list is made of all individual work attitudes that we can anticipate will be indicators of physical or mental workload and therefore represent a certain probability of work-related injury or illness. For this purpose all specific work attitudes are selected that tie in significantly with the responses to the summarised opinions *Do you experience very strenuous work?* and *Do you experience very exacting work?* The bivariate investigations reveal, for example, that the aspect *During work do you often have to work in uncomfortable positions*? has a significant and positive relationship with the final opinion *Do you experience very strenuous work?* and is accordingly regarded as an indicator of physical workload. In the same way, work aspects such as *Do you regularly work against the clock?*, *Do you have influence on the composition of the work schedule?* and *Can you sufficiently discuss of how things are progressing?* are regarded as indicators of mental workload.

In the classical factor analysis (FA) model each variable x_j $(j=1,\ldots,p)$, here referring to the individual work attitudes, is expressed as a linear function of the factors F_i $(i=1,\ldots,k)$ that are treated as equal for the different variables and an unique factor u_j $(j=1,\ldots,p)$:

$$x_j = a_{j1}F_1 + a_{j2}F_2 + \ldots + a_{jk}F_k + u_j \quad (j=1,\ldots,p) \tag{5.2}$$

where a_{ji} $(j=1,\ldots,p;\ i=1,\ldots,k)$ are the factor loadings. Each variable x_j consists of n observations determined according to the number of hospitality employees in the analysis. The primary goal of classical factor analysis is to be able to describe to a significant level the linear interrelationship between the variables x_j through a limited number of common factors F_i (ideally: $k << p$). Using the estimates of the factor loadings we can calculate how far the estimated (reproduced) correlation matrix is in line with the sample correlation matrix, since, applying the usual assumptions[81], the correlation between two arbitrary work attitudes x_j and x_l can be formulated as a function of the factor loadings as follows:

---

[81] In equation (5.2), among other things, the following assumptions apply: (1) standardised variables x_j, (2) stochastic common factors F_i having a standardised distribution, (3) unique factors u_j distributed with mean 0 and variance $\sigma^2_{u_j}$, (4) mutually stochastic independence of the unique factors, (5) mutually independence of the common factors and (6) independence of the unique factors u_j with each of the common factors F_i.

$$\rho_{x_j x_l} = a_{j1}a_{l1} + a_{j2}a_{l2} + \ldots + a_{jk}a_{lk} \quad (j,l = 1,\ldots,p)$$ (5.3)

and the variance of work attitude x_j as follows:

$$\sigma_{x_j}^2 = 1 = a_{j1}^2 + a_{j2}^2 + \ldots + a_{jk}^2 + \sigma_{u_j}^2 \quad (j = 1,\ldots,p)$$ (5.4)

where the sum $a_{j1}^2 + a_{j2}^2 + \ldots + a_{jk}^2$ ($j = 1,\ldots,p$) indicates the degree to which the extracted common factors explain the variance of work attitude x_j. This *row sum* (see equation (5.2)) of squared factor loadings, related to the variance of x_j, is also known as the communality of variable x_j. Communalities may include values between 0 and 1 (including the margins), whereby a value close to 0 (1) indicates that the common factors explain relatively little (much) of the variance of the relevant work attitude. Work attitudes with a low communality therefore do not load heavily on any of the factors and are therefore candidates for exclusion. For these working conditions the correlation with each of the extracted factors is limited[82], so that the connection with the other work attitudes in the factor analysis is also limited (see equation (5.3)). As a criterion for exclusion a threshold of 50 per cent is applied to communalities. It follows from equation (5.4) that the following applies to the total variance of all work attitudes:

$$p = \sum_{j=1}^{p} a_{j1}^2 + \sum_{j=1}^{p} a_{j2}^2 + \ldots + \sum_{j=1}^{p} a_{jk}^2 + \sum_{j=1}^{p} \sigma_{u_j}^2 = \lambda_1 + \lambda_2 + \ldots \lambda_k + \sum_{j=1}^{p} \sigma_{u_j}^2$$ (5.5)

where $\lambda_i = a_{1i}^2 + a_{2i}^2 + \ldots + a_{pi}^2$ ($i = 1,\ldots,k$) reveals the degree to which factor F_i contributes to the explanation of the total variance of all original work attitudes in the factor analysis. This *column sum* of squared factor loadings is known as the eigenvalue of F_i. In classical FA the number of extracted factors matches the number of estimated eigenvalues $\hat{\lambda}_i > 1$, since for factors with an eigenvalue equal to or smaller than one, a separate work attitude explains the same or more of the total variance. This eigenvalue criterion, however, does not bring universal happiness, since through the empirical process the estimated eigenvalues of one or more extracted factors can be greater, but relatively close to one and accordingly do not contribute significantly more to the total variance than separate work attitudes. For the purpose of identifying a relevant number of factors, in the empirical literature also use is made of the scree plot, in which the eigenvalues ranked according to size are placed against the (labels of the) corresponding factors. A study of the scree plot offers clues to the marking of the boundary between the comparatively larger and smaller eigenvalues. For determining the quality of the various FA models this chapter focuses especially on the *combination* of estimated communalities, estimated eigenvalues and the interpretability of the results. Ideally, a work attitude x_j correlates closely with one specific factor F_i ($\hat{a}_{ji} \approx 1$ or $\hat{a}_{ji} \approx -1$) and barely if at all to other extracted factors ($\hat{a}_{js} \approx 0, s \neq i$). Interpretability of the FA results means this theoretical distribution of estimated factor

---

[82] Since the following applies under the usual assumptions: $\rho_{x_j F_i} = a_{ji}$

loadings and whereby most work attitudes that closely correlate to the common factor F_i also relate to one specific aspect of the working conditions, for example to freedom in work or to the work organization. The empirical findings of a factor analysis will mostly not lead directly to estimated factor loadings, by which it is clear for each work attitude with what common factor this aspect should chiefly be associated. In factor analysis the concept of rotation enables us to come close to the theoretical distribution of estimated factor loadings. Using this concept the matrix of estimated factor loadings $\hat{A} = \{\hat{a}_{ji}\}_{pxk}$ is postmultiplied by a transformation matrix T_{kxk}, whereupon on the basis of the rotated factor loadings variables can in general be associated with a minimum number of factors. The transformation matrix is determined by the chosen rotation method. If it is intended that the resulting factors be uncorrelated, then an orthogonal rotation technique such as the varimax rotation may be used. If the orthogonal limitation is not required, then an oblique rotation can also be applied (such as the promax rotation). In this chapter the factor scores are used as explanatory variables of individual earnings and in chapter 8 as regressors of individual labour mobility. In view of the problem of multicollinearity in regression analysis, an orthogonal rotation technique is therefore preferred.

First, various factor analyses are carried out on all work attitudes regarded in advance as chiefly indicators of physical workload. Ultimately, for the further analysis, a choice is made for principal components analysis (PCA) with varimax rotation (see table 5.4). The Maximum Likelihood (ML) method as an extraction method and other rotation techniques result in less interpretable factors. Due to a communality of less than 50 per cent, a number of work attitudes are ultimately kept outside the factor analysis, such as *Does your work require you to spend long periods kneeling or squatting?* and *Does your work require you to spend much time in a small working space?* Applying this criterion, a total of six indicators for physical workload are excluded, which means that these work attitudes can hardly if at all be associated with one of the extracted common factors and therefore have no strong link with the other variables in the factor analysis. Excluded variables may, of course, still be regarded as separate regressors of individual earnings (and mobility). The empirical findings in table 5.4 reveal that the original thirteen indicators for physical workload included can be summarised in five principal components, by which almost 70 per cent of the total variance is explained. In the case of most work attitudes it holds that, using an orthogonal rotation, the theoretical distribution of estimated factor loadings is approximated. Only for *pushing or pulling weights over 25 kg* is the observed connection with, in particular, component II not entirely convincing. Apart from that, the principal components can be clearly designated, since the work attitudes that load relatively heavily on a specific component mostly point to a certain aspect of physical workload.

Table 5.4: Classical principal components analysis of some aspects of the physical workload in the Dutch hospitality industry: factor loadings, eigenvalues and principal components, September 2001

PHYSICAL WORKLOAD	Principal components				
Handling weights over 5 kilograms	I	II	III	IV	V
Lifting	*.819*	.106	.057	.249	.138
Pushing or pulling	*.692*	.254	.193	-.075	-.035
Bearing	*.812*	.139	.076	.227	.109
Handling weights over 25 kilograms					
Lifting	.153	*.881*	.016	.118	.090
Pushing or pulling	.403	*.578*	.220	-.112	-.057
Bearing	.119	*.897*	.068	.050	.061
Working in uncomfortable positions					
Reaching far	.052	.093	*.752*	.228	.132
Holding up	.041	.053	*.805*	.153	.021
Uncomfortable working position	.285	.069	*.677*	-.126	.172
Standing/walking uninterruptedly					
Standing	.121	.056	.058	*.815*	.087
Walking	.128	.021	.167	*.793*	-.084
Recurring work					
Same movements	.050	.065	.135	.032	*.833*
Same posture	.088	.028	.099	-.019	*.833*
Initial eigenvalues	3.72	1.65	1.44	1.17	1.07
Total variance explained (%)	69.48				
Factor contribution after varimax rotation (%)	16.44	15.66	14.07	11.80	11.52

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : The exact wording is as follows: handling weights over 5 kilograms = *During work do you often have to lift* (idem: *push or pull/bear*) *heavy weights over 5 kilograms?*; handling weights over 25 kilograms = *During work do you often have to lift* (idem: *push or pull/bear*) *very heavy weights over 25 kilograms?*; reaching far = *During work do you often have to reach far with hands or arms?*; holding up = *During work do you often have to hold up your arms?*; uncomfortable working position = *During work do you often have to work in uncomfortable positions?*; standing/walking uninterruptedly = *During work do you often have to stand* (idem: *walk*) *uninterruptedly?*; same movements = *During work do you often have to make the same movements with your arm, hand or fingers?*; same posture = *Do you often have to take the same posture during work?*

The resulting factor scores[83] $\hat{F}_i$ can be named as follows (using the capital letter P to indicate a type of physical workload):

- $\hat{P}_1$: Handling weights over 5 kilograms.
- $\hat{P}_2$: Handling weights over 25 kilograms.
- $\hat{P}_3$: Working in uncomfortable positions.
- $\hat{P}_4$: Standing/walking uninterruptedly.
- $\hat{P}_5$: Recurring work.

On the basis of the estimated eigenvalues it could be decided to further restrict the number of principal components to be identified. However, given the good interpretability of the FA results on the basis of the classical eigenvalue criterion it is decided not to. In the same way, the different indicators for mental workload can be summarised in seven principal components (see table 5.5). The corresponding factor scores, now with capital letter M, can be designated as follows:

- $\hat{M}_1$: Work organization and direct management.
- $\hat{M}_2$: Work pace.
- $\hat{M}_3$: Colleagues and unforeseen situations.
- $\hat{M}_4$: Discrimination.
- $\hat{M}_5$: Freedom in work: work pace.
- $\hat{M}_6$: Guests.
- $\hat{M}_7$: Freedom in work: work versus private matters.

Different FA investigations reveal that principal components analysis with varimax rotation produces also the best interpretable results for individual work attitudes regarded as mainly indicators of mental workload. The total explained variance is approximately 60 per cent, whereby *Work organization and direct management* (component I) makes the most significant contribution by far. Due to a communality below the critical level, a total of five indicators for mental workload are excluded, including *Is your work regularly disrupted by problems with the work of others?* and *Do you find the atmosphere at work good?* Again, some principal components contribute relatively little to the total variance, but are nevertheless kept due to the good interpretability. This applies particularly to *Freedom in work: work versus private matters* (VII).

---

[83] A factor score $\hat{F}_i$ can be calculated for each extracted factor (principal component in PCA), equal to a linear combination of the original and standardised work attitudes in the factor analysis, whereby the weights (the factor score coefficients) correspond to the estimated factor loadings.

For component *i* and hospitality worker *n* the formula is: $\hat{F}_{in} = \sum_{j=1}^{p} w_{ji} x_{jn}$.

Table 5.5: Classical principal components analysis of some aspects of the mental workload in the Dutch hospitality industry: factor loadings, eigenvalues and principal components, September 2001

MENTAL WORKLOAD	Principal components						
Work organization and direct management	I	II	III	IV	V	VI	VII
Work organization	*.713*	-.028	-.211	-.113	.071	-.029	-.042
Work progress	*.694*	-.066	-.154	-.055	.157	-.013	.171
Work responsibility	*.618*	-.012	-.149	-.090	.057	.036	-.111
Management and style	*.759*	-.050	-.116	.045	.063	-.054	.052
Management and image of worker	*.739*	-.083	-.109	-.006	-.055	-.052	.116
Management and paying attention	*.704*	-.124	-.166	-.037	.059	-.041	.187
Management and career training	*.566*	-.191	.216	-.051	.127	-.237	.106
Work pace							
Pressure of time	-.113	*.688*	.144	.019	.045	.025	-.017
Working hard	-.010	*.756*	.019	-.008	-.167	.015	-.025
Doing a lot of work	-.090	*.739*	.116	.044	.066	-.061	-.088
Hectic work	-.133	*.610*	.185	.050	-.242	.103	.048
Colleagues and unforeseen situations							
Unforeseen situations	-.179	.224	*.720*	.054	.094	.117	-.006
Absence of colleagues	-.223	.144	*.698*	.092	-.142	.129	.051
Annoyed about colleagues	-.196	.105	*.632*	.035	-.062	.025	-.132
Discrimination							
Complexion	-.089	.040	.057	*.861*	-.056	.075	-.024
Gender	-.082	.042	.087	*.864*	-.003	.078	-.045
Freedom in work: work pace							
Pausing in work	.160	-.043	-.120	-.088	*.801*	.049	.125
Adjusting speed of work	.105	-.142	.028	.025	*.810*	-.057	-.064
Guests							
Aggressive guests	-.012	-.014	.116	.122	.037	*.806*	-.075
Guests hard to please	-.141	.050	.098	.026	-.047	*.796*	.024
Freedom in work: work versus private matters							
Influence work schedule	.103	-.008	-.030	-.088	.167	-.025	*.757*
Changing working hours	.131	-.064	-.043	.020	-.114	-.026	*.766*
Initial eigenvalues	4.94	1.90	1.62	1.39	1.24	1.17	1.01
Total variance explained (%)	60.31						
Factor contribution after varimax rotation (%)	16.23	9.75	7.80	7.12	6.96	6.43	6.03

Remarks : The exact wording is as follows: work organization = *Is your work generally well organized?*; work progress = *Can you sufficiently discuss of how things are progressing?*; work responsibility =

In your work is it always apparent to you for which you are (not) responsible for?; management and style = *Do you experience good direct leadership?*; management and image of worker = *Does direct management have a correct impression of you in your work?*; management and paying attention = *Does direct management sufficiently take into consideration what you are saying?*; management and career training = *Is management doing sufficiently within the scope of your career?*; pressure of time = *Do you regularly work against the clock?*; working hard = *Do you have to work very hard?*; doing a lot of work = *Do you have to do a lot of work?*; hectic work = *Is it frequently a 'madhouse' at work?*; unforeseen situations = *Is your work frequently obstructed by unforeseen situations?*; absence of colleagues = *Is your work frequently hindered by the absence of colleagues?*; annoyed about colleagues = *Do you at work frequently get annoyed about others?*; complexion = *At work, are people discriminated against because of their complexion?*; gender = *At work, are people discriminated against because of their gender?*; pausing in work = *If you think it is necessary, can you pause in your work?*; adjusting speed of work = *Are you able to adjust the speed of work?*; aggressive guests = *Do you often have to work with aggressive guests?*; guests hard to please = *Are your customers hard to please?*; influence work schedule = *Do you have influence on the composition of the work schedule?*; changing working hours = *If necessary are you able to change working hours with colleagues?*

Given the estimated eigenvalues it is perhaps tempting to conclude with regard to personal relationships at work that hospitality employees consider their relationship with direct management as more taxing than their relationship with colleagues, and that with colleagues more taxing than that with guests. On the basis of the FA results it can only be concluded, however, that *Work organization and direct management* (I) as a component makes the most significant contribution to the total variance of all work attitudes (= 22) in the analysis. This factor contribution is considerably smaller for *Colleagues and unforeseen situations* (III) and *Guests* (VI). The influence of personal relationships at work (and other aspects of work) on perceived mental workload can be determined, for example, by a regression (categorical or logistic) of the summarised opinion *Do you experience very strenuous work?* on relevant individual work attitudes or the corresponding factor scores.

The argument can be made that the allocation at the outset of individual work attitudes to either the group of aspects regarded as mainly indicators for physical workload or to the group referring to forms of mental workload in particular, does an injustice to the expected connection between the two types of workload. A principal components analysis whereby all individual work attitudes from the separate investigations are combined, however, leads to virtually the same categorisation of work attitudes. The only difference arises from the individual work attitudes in *Colleagues and unforeseen situations* which in the extended PCA (with varimax rotation) cannot be associated with one of the extracted components. The extended PCA thus distinguishes between eleven principal components and can be given the same designations as in the separate analyses. The extended PCA explains approximately 62 per cent of the total variance (= 35).

There are also, of course, various categorical principal components analyses (CATPCA)[84] performed, since, compared with the classical PCA model, CATPCA is especially developed to investigate the relationship between variables assumed to be scaled lower than the numerical level (see, for example, De Leeuw and Van Rijckevorsel (1980) and Gifi (1990)). The classical principal components analysis assumes a linear relationship between pairs of numerical variables. Categorical principal components analysis can also model non-linear relationships between variables, for which purpose the researcher can set the scaling level of each of the variables in a CATPCA. This allows us to use categorical principal components analysis to investigate the connection between a set of variables, where we generally assume[85] a mix of nominal, ordinal and numerical measurement levels. Different CATPCA investigations based on the different indicators for mental workload in the Dutch hospitality industry reveal that the classification of the relevant individual work attitudes into components is independent of the assumed measurement level of the variables and therefore is largely in line with the results of a classical principal components analysis.

Table 5.6 sets out the empirical findings of a categorical principal components analysis based on the different indicators for mental workload, whereby all relevant work attitudes are scaled as nominal. This CATPCA explains 62 per cent of the total variance.

---

[84] Also known as nonlinear principal components analysis or categorical principal components with optimal scaling.

[85] In this context categorical principal components analysis is also regarded as belonging to the class of optimal scaling procedures. Other multivariate techniques in this class include categorical regression, homogeneity analysis and correspondence analysis. Depending on the criterion for optimizing in the relevant scale procedure, optimal scale values are allocated to the categories of each of the variables in the analysis, which in contrast to the original labels of the nominal and ordinal variables examined, can be regarded as numerical. The characteristics of these scale values depend on the assumed measurement level for the relevant variable. For variables that are declared as nominal, the optimal scale values are unrestricted. This means that non-linear relationships between variables can also be observed (via the numerical scale values). For ordinal variables the scale values are arranged in the same way as the original categories of the relevant variable. The same also applies to numerical variables, whereby the difference between two arbitrary scale values is also proportionate to the difference between the corresponding original categories. In a categorical principal components analysis, if all variables are regarded as numerical, then the investigation is equivalent to a classical PCA. By varying the optimal scale level of the variables in a categorical principal components analysis one can investigate what model fits closest to the data: "When specifying the level, you specify not the level at which variables are *measured*, but the level at which they are *scaled*. The idea is that the variables to be scaled may have non-linear relations regardless of the scale (nominal, ordinal, interval or ratio) on which they are measured. The purpose of the analysis is not to determine the scale on which variables are measured, but to investigate possible non-linear relationships.", (SPSS (1998, p. 84)).

Table 5.6: Categorical principal components analysis of some (nominally scaled) aspects of the mental workload in the Dutch hospitality industry: factor loadings, eigenvalues and principal components, September 2001

MENTAL WORKLOAD	Principal components						
Work organization and direct management	I	II	III	IV	V	VI	VII
Work organization	*.675*	.274	.122	-.055	-.218	.022	.107
Work progress	*.718*	.213	.181	.051	.007	.113	-.012
Work responsibility	*.525*	.250	.151	.018	-.331	.056	.268
Management and style	*.668*	.243	.300	-.021	-.067	-.052	.019
Management and image of worker	*.680*	.262	.239	-.178	-.026	.015	.148
Management and paying attention	*.695*	.166	.192	-.082	.059	.057	-.035
Management and career training	*.534*	.069	.153	.064	.242	-.037	.238
Work pace							
Pressure of time	-.433	*.506*	.011	.220	-.033	-.086	-.160
Working hard	-.323	*.645*	.011	-.076	-.097	-.060	-.207
Doing a lot of work	-.421	*.571*	-.033	.197	-.062	-.158	-.168
Hectic work	-.488	*.532*	.053	-.069	.017	.061	-.098
Colleagues and unforeseen situations							
Unforeseen situations	*-.518*	.188	.190	.339	.163	.188	.333
Absence of colleagues	*-.588*	.115	.184	.087	.230	.228	.325
Annoyed about colleagues	-.485	.089	.083	.153	.127	.021	*.531*
Discrimination							
Complexion	-.352	-.170	*.707*	-.128	.089	-.308	-.149
Gender	-.337	-.184	*.690*	-.098	.132	-.388	-.089
Freedom in work: work pace							
Pausing in work	.400	-.067	.037	*.707*	-.021	-.019	-.227
Adjusting speed of work	.292	-.197	.110	*.733*	-.050	-.174	.013
Guests							
Aggressive guests	-.243	-.178	.421	.057	-.333	*.537*	-.189
Guests hard to please	-.328	-.135	.252	.005	-.314	*.588*	-.102
Freedom in work: work versus private matters							
Influence work schedule	.323	.077	.001	.147	*.555*	.278	-.319
Changing working hours	.256	.092	.062	-.142	*.629*	.316	-.105
Eigenvalues	5.30	1.85	1.59	1.40	1.28	1.24	1.01
Total variance explained (%)	62.12						

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : The exact wording is as follows: work organization = *Is your work generally well organized?*; work progress = *Can you sufficiently discuss of how things are progressing?*; work responsibility = *In your work is it always apparent to you for which you are (not) responsible for?*; management

and style = *Do you experience good direct leadership?*; management and image of worker = *Does direct management have a correct impression of you in your work?*; management and paying attention = *Does direct management sufficiently take into consideration what you are saying?*; management and career training = *Is management doing sufficiently within the scope of your career?*; pressure of time = *Do you regularly work against the clock?*; working hard = *Do you have to work very hard?*; doing a lot of work = *Do you have to do a lot of work?*; hectic work = *Is it frequently a 'madhouse' at work?*; unforeseen situations = *Is your work frequently obstructed by unforeseen situations?*; absence of colleagues = *Is your work frequently hindered by the absence of colleagues?*; annoyed about colleagues = *Do you at work frequently get annoyed about others?*; complexion = *At work, are people discriminated against because of their complexion?*; gender = *At work, are people discriminated against because of their gender?*; pausing in work = *If you think it is necessary, can you pause in your work?*; adjusting speed of work = *Are you able to adjust the speed of work?*; aggressive guests = *Do you often have to work with aggressive guests?*; guests hard to please = *Are your customers hard to please?*; influence work schedule = *Do you have influence on the composition of the work schedule?*; changing working hours = *If necessary are you able to change working hours with colleagues?*

A comparison with the results of the classical PCA model shows that the CATPCA factor scores can be largely named in the same way:

- $\widetilde{M}_1$: Work organization/direct management and, colleagues and unforeseen situations.
- $\widetilde{M}_2$: Work pace.
- $\widetilde{M}_3$: Discrimination.
- $\widetilde{M}_4$: Freedom in work: work pace.
- $\widetilde{M}_5$: Freedom in work: work versus private matters.
- $\widetilde{M}_6$: Guests.
- $\widetilde{M}_7$: 'Colleagues and unforeseen situations'.

A difference between the CATPCA results and those from the classical PCA model arises from the individual work attitudes in *Colleagues and unforeseen situations* that in the various CATPCA investigations cannot be especially associated with one of the components (here: VII) as a separate group. The relevant indicators for mental workload, like the aspects in *Work organization and direct management* load relatively heavily on the first dimension. For the work attitudes in *Work organization and direct management* the estimated factor loadings for component I are all positive and for aspects from *Colleagues and unforeseen situations* all negative. One can thus still identify two separate groups of indicators for mental workload, albeit within one principal component: two arbitrary work attitudes from *Work organization and direct management* or from *Colleagues and unforeseen situations* are positively correlated, whereas an aspect from one of the two groups is negatively connected to an aspect from the other group of variables[86]. For the individual work attitudes

---

[86] Within the classical FA model this is shown as follows. Assume that with the FA results the theoretical distribution of the estimated factor loadings is approximated and that the variables x_j and x_l both load heavily on component I. It then follows from equation (5.2) that: $\rho_{x_j x_l} \approx a_{j1} a_{l1}$. If x_j and x_l both correlate strongly positively (or negatively) with component I then: $\rho_{x_j x_l} \approx a_{j1} a_{l1} \approx 1x1 = (-1x-1) = 1$. If x_j

in *Work pace* the association with component II in particular is also less convincing than using the classical PCA model. Expectations are that comparable partial effects of the relevant factor scores will be observed when estimating different wage and mobility equations using either the PCA or CATPCA estimation results, since the corresponding factor scores from both types of PCA investigations are positively correlated[87]. On the basis of the various empirical investigations, however, some arguments could be made that result in a preference for applying the classical PCA factor scores in the subsequent analyses. Considering the distribution of the estimated factor loadings, the application of the standard PCA model leads to better interpretable results than the categorical variant. Furthermore, the classical PCA factor scores are uncorrelated, which is not true of the CATPCA scores. What decides in favour of the use of the classical PCA findings for subsequent analysis is, however, a more technical argument. Categorical principal components analysis has the characteristic of truncating broken input values. In correcting for the under and overrepresentation in the net sample, many hospitality employees are thereby left out of the various CATPCA investigations, since the truncation results in a weight factor equal to zero for these workers.

For the various indicators for physical workload the same general conclusion holds that the results of the various CATPCA investigations are comparable with those of the classical PCA model, but that for the reasons given above preference is given to the classical PCA factor scores for the further analysis.

5.2.4. Wages according to the collective agreement

A significant effect of the wealth in human capital of workers and of, for example, risks and discomforts at work on the income position is not only neoclassically inspired, but also institutionally recorded in the Hospitality Industry CAO ("Horeca CAO", collective labour agreement, Landelijke Bedrijfscommissie voor het Horecabedrijf (2000)).

---

correlates very positively with component I and x_l very negatively (or vice versa) then: $\rho_{x_j x_l} \approx a_{j1} a_{l1} \approx 1x - 1 = (-1x1) = -1$.

[87] In respect of the factor scores designated in the same way:

- $r_{\hat{M}_2 \tilde{M}_2} = 0.84$ (*Work pace*).
- $r_{\hat{M}_4 \tilde{M}_3} = 0.77$ (*Discrimination*).
- $r_{\hat{M}_5 \tilde{M}_4} = 0.93$ (*Freedom in work: work pace*).
- $r_{\hat{M}_6 \tilde{M}_6} = 0.76$ (*Guests*).
- $r_{\hat{M}_7 \tilde{M}_5} = 0.80$ (*Freedom in work: work versus private matters*).

For the equivocal first principal component we also observe a positive correlation between the relevant factor scores: $r_{\hat{M}_1 \tilde{M}_1} = 0.75$.

For their employees coming within the scope of the Hospitality Industry CAO, employers must draw up a business function ("bedrijfsfunctie") setting out the most important tasks and responsibilities. This defined function must then be compared with the reference functions in the most relevant function category (e.g. service, kitchen or technical service) from the Hospitality Industry Reference Functions Manual ("Handboek Referentiefuncties Bedrijfstak Horeca", Landelijke Bedrijfscommissie voor het Horecabedrijf (1993)). On the basis of the most relevant reference function(s) the business function is allocated to a function group and this then determines the minimum earnings pursuant to the relevant earnings table in the Hospitality Industry CAO. The function group must also be specified in the written contract of employment between employer and employee. It is expected that the Hospitality Industry CAO applies to most workers in the Hospitality Employees Study.

The Hospitality Industry Reference Functions Manual describes for the Dutch hospitality industry 118 most frequent or most characteristic functions in hospitality firms. These reference functions are each allocated a function name and divided into 11 function groups that determine the earnings relations. This division into function groups is based on the valuation of the reference functions applying the ORBA method. This method of function valuation is not specific to the hospitality industry, but can be applied to any function in business. The ORBA method analyses the reference function descriptions on the basis of a fixed number of perspectives, with which we can assume that all important work aspects of the function are covered. The individual perspectives can generally be clustered into two groups. The first group contains the skills required for the function regarding knowledge and ability, such as the required knowledge from education and work experience, the necessary self-reliance, clarity of expression, movement skills and accuracy. The second group of perspectives relates to the degree in which certain working conditions need to be considered a discomfort when performing the function. Examples of these job risks and discomforts for various hospitality occupations are presented in table 5.3. According to the degree in which a perspective for a normal performance of the function is required or exists, each perspective is awarded fewer or more points. For the function valuation, the number of points per perspective is multiplied by the fixed weight factor for a perspective. With a factor of 5, for example, the ORBA method attributes a greater importance to the function 'required knowledge through schooling and work experience' than to the function 'unalluring working conditions' which is awarded a fixed factor of 3. By adding up the weighted scores for all perspectives the reference function is valued and can then be placed in the function classification list, in which all reference functions are arranged from low to high in accordance with the points total, thereby indicating the relative value of a function.

Using the ORBA method, calculation of the earnings relationships in the Dutch hospitality industry takes specific account of the required wealth in human capital of workers and with the expected job discomforts and work-related risks. From an institutional perspective the earnings of workers are initially linked to the function, not to the (productivity of the) worker. However, it is not the institutional earnings, but actual earnings, that are central to the present investigation (see also Dutch Board for the Hospitality and Catering Industry (1996a)).

5.3. Empirical earnings functions in the Dutch hospitality industry

5.3.1. Introduction

On the basis of the consideration of the literature followed by specific choices, alternatives and analyses in section 5.2, this section examines the estimation results of the various earnings equations, with the primary aim of investigating in this earnings context the empirical plausibility of a segmented labour market in the Dutch hospitality industry. In line with the summary in Card (1999, p. 1809), as a natural starting point, initially various earnings equations are estimated following the human capital approach and then gradually expanded with additional determinants of individual earnings (see also fn. 63). Specifically, with the logarithm of the net hourly wage of hospitality employees as the predictand, we estimate four variants of a classical linear regression model. Earnings equation A only distinguishes between various schooling indicators as determinants (see section 5.3.2). Given the perception that in the Hospitality Industry CAO, in addition to the required wealth in human capital, for institutional (and compensating) earnings specific account is also taken of typical job discomforts, then model B specifies aspects of experienced physical and mental workload as additional predictors (see section 5.3.3)[88]. The partial effect of some group characteristics and other job characteristics as additional determinants is investigated in model C (see section 5.3.4), whilst model D also takes into account the possible influence of the business group and the size of the establishment on the earnings position (see section 5.3.5). In discussing the earnings equations B, C and D the estimation results of the additional determinants are reported in table form and the robustness of the other parameter estimates is discussed in words[89].

As indicated, in testing the hypothesis of compensating earnings differences use is made of the results of the principal components analyses in section 5.2.3. In interpreting the empirical earnings equations it is important to note that the resulting factor scores are numerical and mostly have the property that a higher (lower) value is coupled with a more (less) positive experience by workers regarding the corresponding (summarised) working conditions. An exception to this are the factor scores described as *Work organization and direct management*, *Freedom in work: work pace* and *Freedom in work: work versus private matters*, where given the phrasing of the questions to the underlying work aspects, we may assume a negative correlation between factor score and work experience (see table 5.5). For compensating earnings differences we then expect, for example, in an earnings equation regarding *Recurring work* as regressor a significant negative parameter estimate and a positive value for *Freedom in work: work versus private matters*.

---

[88] Of course, the worker's perception of certain discomforts at work does not need to (entirely) square with the job discomforts as described in the Hospitality Industry Reference Functions Manual (see table 5.3).

[89] The complete estimation results of models B, C and D can be provided on request.

Table 5.7: Net hourly wages (€) in the Dutch hospitality industry by PCS labour market segment and worker, job and firm characteristics, September 2001

	Secondary workers		Craft workers		Professional workers		Total	
Age	$\bar{x}$	s	$\bar{x}$	s	$\bar{x}$	s	$\bar{x}$	s
Under 20 years	4.1	1.7	3.5	1.3	4.6	1.1	4.1	1.6
20-24 years	5.6	1.9	6.3	1.6	6.2	1.4	5.9	1.8
25-29 years	5.7	1.7	6.9	1.5	6.9	1.5	6.6	1.6
30-34 years	5.9	2.1	7.3	2.0	7.4	1.7	7.1	2.0
35-39 years	6.8	3.1	8.0	2.8	7.7	2.1	7.6	2.7
40+ years	6.6	2.1	7.2	2.4	7.2	2.2	7.1	2.3
Educational level								
Low	4.7	2.2	6.5	2.4			5.6	2.5
Intermediate	5.3	1.9	6.9	1.9	6.6	1.7	6.1	2.0
High	5.7	2.1	8.1	2.6	7.2	2.7	6.6	2.6
Completed additional training								
No	4.9	2.0	6.2	2.4	5.8	1.4	5.3	2.1
Yes	5.7	2.3	7.2	2.2	6.9	1.9	6.8	2.3
Gender								
Female	5.1	2.0	6.9	2.4	6.4	1.8	5.9	2.3
Male	5.0	2.2	6.7	2.4	6.7	1.8	6.0	2.3
Hospitality experience								
Under 3 years	4.6	1.8	6.1	2.2	6.5	1.8	5.2	2.1
3-5 years	5.5	2.2	6.4	2.0	5.9	1.6	5.8	2.1
6-10 years	6.4	2.1	7.1	1.6	6.8	1.3	6.8	1.7
11+ years	6.2	2.3	7.8	2.9	7.3	2.1	7.4	2.6
Contract of employment								
Temporary	4.9	2.0	5.6	2.1	5.8	1.5	5.1	2.0
Permanent	5.4	2.2	7.1	2.3	6.9	1.8	6.6	2.3
Contractual working hours per week								
Flexible or 1-11 hours	5.0	2.1	5.5	2.0	6.4	2.1	5.2	2.1
12-37 hours	5.4	2.1	7.1	2.6	5.7	1.6	6.5	2.5
38+ hours	5.4	2.0	7.1	2.0	7.0	1.7	7.0	1.9
Firm size								
1-9 employees	5.0	2.0	6.3	2.0	6.3	1.5	5.7	2.0
10-19 employees	5.1	2.1	6.7	2.3	6.9	1.9	5.9	2.3
20-49 employees	5.3	2.2	7.3	2.9	6.5	1.8	6.2	2.6
50+ employees	5.0	2.1	6.9	2.2	6.9	1.9	6.1	2.3
Business group								
Cafe sector	5.9	2.1	6.7	2.6	6.7	2.4	6.2	2.3
Fast food sector	4.4	1.7	6.3	1.8	6.7	1.6	5.2	2.0
Restaurant sector	4.9	2.1	6.2	2.0	6.6	1.8	5.7	2.1

Hotel sector	5.2	2.4	8.1	2.8	6.9	1.6	6.9	2.6
Total	5.1	2.1	6.7	2.4	6.6	1.8	5.9	2.3
N	142,600		111,000		51,900		305,500	
n	598		388		185		1,171	

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : Educational level: low = LBO, VMBO and MAVO; intermediate = HAVO, VWO, MHS, apprentice system and other professional education at an intermediate level; high = HHS, university and other high level professional education.
: A permanent appointment is inclusive of temporary employment with the commitment of a permanent contract.
: N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

Before discussing the empirical findings of the various earnings equations, table 5.7 sets out as an initial investigation bivariate correlations between individual earnings and some worker, job and firm characteristics, differentiated according to the PCS labour market segments. This gives a picture of the scope and spread of net hourly wages in the Dutch hospitality industry, at least according to statements from workers. In line with expectations, the earnings of secondary employees are generally lagging behind the income position of hospitality workers on the primary labour ladder. In accordance with the neoclassical (and institutional) predictions, schooling and experience have a positive correlation with the position on the income ladder. A higher educational level in general education, additional schooling investments in the labour market in the form of one or more completed courses tuned to the hospitality practice, greater industry experience and an older age generally correlate to higher earnings. Contrary to the segmentation theory, these positive correlations are perceived in all submarkets. Contradicting the expectation in section 5.2.1, individual earnings correlate more closely with the age, than the experience in the sector, of the worker. This finding likewise applies to all labour market segments. The Pearson correlation between the age and net hourly earnings of hospitality workers equals 0.45 and between industry experience and earnings 0.34, both significant at the 1% level[90]. The traditional perception that males earn significantly more than females is not observed in this bivariate setting, nor on the secondary labour ladder. Alongside worker characteristics such as schooling and experience certain job and firm characteristics also relate to the income position. For example, workers with a permanent contract of employment on average earn more than workers with a temporary appointment and earnings correlate positively with the size of the job. Particularly in the lower tier of the primary labour market the income position for workers with a temporary appointment or with a small part-time job is averagely lagging behind. With the exception of hospitality establishments with 50+ workers

---

[90] In the professional market these correlations are 0.39 and 0.27 respectively; in the lower tier of the primary labour market 0.33 and 0.26 and in the secondary labour market segment 0.39 and 0.24. All these Pearson correlations are significant at the 1% level.

especially in this labour market segment also a positive wage-size profile is observed. However, the earnings differences between the firm size classes in all submarkets are limited. In the hotel sector workers are on average positioned higher up the income ladder than workers in the other business groups. This finding applies especially to workers in the lower tier of the primary labour market. In the secondary segment it is workers in the cafe sector that on average occupy a forward position financially.

The estimation results of the earnings models A-D in which account is taken at the same time of various determinants will point to the extent to which the correlation picture in table 5.7 holds up.

5.3.2. Earnings and human capital

As base model, initially different variants of a HCEF are estimated for the Dutch hospitality industry *as a whole* using the alternative schooling indicators in the Hospitality Employees Study (see section 5.2.1). Several empirical findings can be summarised as follows[91]. In line with the bivariate findings in the previous section, the age of the hospitality worker is a better predictor of the earnings position than the number of years of experience in the sector. For the Dutch hospitality industry as a whole, an earnings equation with *only* a linear and quadratic specification of the age of the worker, including a constant term, already shows an explanatory power of 38 per cent and thereby the expected significant concavity in the estimated earnings profile. With the number of years of experience in the hospitality industry as predictor and the same HCEF formulation, this is only 14 per cent. Consistent with the findings in Murphy and Welch (1990) a cubic addition of the age variable leads to a significant improvement in the fit of the various HCEF specifications. Despite the relative youth of hospitality workers, the above two indirect indicators of the amount of additional schooling in the hospitality labour market, in agreement with the neoclassical expectations, are more determinant of the *current* position on the income ladder than the level and direction achieved in general education.

Initial schooling is partly determinant of the classification of workers in the different PCS labour market segments (see chapter 3). All workers in the professional market, for example, have by definition completed hospitality schooling at an intermediate or high level and 94 per cent of the other employees has not had any initial hospitality education. Accordingly, the focus of education (hospitality industry/other) is left out of the empirical analyses of the segment specific earnings equations. The educational level achieved is, however, included as a determinant to identify possible credential effects. Given the response, this schooling variable is only specified for the secondary labour market and the lower tier of the primary spectrum. In general the estimation results of model A illustrate the significance of the human capital of workers for the actual earnings position in the Dutch hospitality industry (see table 5.8). These findings may be regarded as empirical support for the neoclassical predictions and as an indication for the influence of the Hospitality Industry CAO (see section 5.2.4).

---

[91] The estimation results of the various HCEF specifications can be provided on request.

Table 5.8: Estimation results of earnings model A for employees in the Dutch hospitality industry by PCS labour market segment, September 2001

	Secondary workers	Craft workers	Professional workers	Total
Constant	-1.424 **	-2.173 **	-0.451	-1.680 **
HUMAN CAPITAL				
Age	0.252 **	0.312 **	0.173 **	0.273 **
Age^2	-0.006 **	-0.008 **	-0.004 **	-0.007 **
Age^3	0.00005 **	0.00007 **	0.00003 **	0.00005 **
Educational level	-0.001	0,082 **		0.042 **
Completed additional training (no)	0.019	0.109 **	0.131 **	0.092 **
$\overline{R}^2$	0.31	0.48	0.32	0.47
$\hat{\sigma}$	0.34	0.24	0.21	0.28
N	142,600	111,000	51,900	305,500
n	598	388	185	1,171

Source	: "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).
Remarks	: N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.
	: ** = Significantly at α=5%; * = significantly at α=10%.

In line with the segmentation theory the explanatory power of model A is larger in the primary labour market than in the secondary segment. In particular, for craft employees in the Dutch hospitality industry the explanatory power of the various schooling indicators, amounting to 48 per cent, can be regarded as considerable. For this group of workers the schooling level reached (in general education) has a significant income effect averaging 8 per cent whilst the net earnings of workers with one or more completed hospitality courses is on average 11 per cent higher than for workers without formal additional hospitality schooling (ceteris paribus). Consistent with the SLM expectations, neither schooling variable has any explanatory power in the secondary labour market. In the professional market the influence of formal additional schooling on individual earnings is largest, averaging 13 per cent. If the indicator variable in model A relating to the completion or not of one or more courses is replaced by dummy variables for each of the differentiated (clusters of) hospitality courses (see table 3.15), it is then perceived that in the professional market only additional vocational training has a significant positive effect on the earnings position. For craft employees this applies to internal training and management courses with partial effects of 10 and 13 per cent respectively.

5.3.3. Earnings, human capital and working conditions

In accordance with the segmentation theory, the addition to model A of different aspects of physical and mental workload as determinants of individual earnings has additional explanatory power particularly in both primary submarkets (see table 5.9). Compared with the parameter estimates in model A, the partial effects of the schooling indicators in model B are virtually unchanged. This observation applies to all labour market segments. The empirical plausibility of the hypothesis of compensating earnings differentials, however, is barely supported, if at all.

Table 5.9: Estimation results of earnings model B for employees in the Dutch hospitality industry by PCS labour market segment, September 2001

WORKING CONDITIONS	Secondary workers	Craft workers	Professional workers	Total
Factor scores				
Handling weights over 5 kilograms	-0.022	0.006	-0.006	-0.006
Handling weights over 25 kilograms	-0.018	-0.009	0.010	-0.005
Working in uncomfortable positions	-0.040 **	0.006	-0.001	-0.006
Standing/walking uninterruptedly	0.000	0.044 **	0.037 **	0.030 **
Recurring work	0.004	0.021	0.011	0.000
Work pace	0.041 **	-0.001	-0.005	0.010
Guests	-0.023	0.039 **	0.038 **	0.013
Freedom: work/private matters	-0.027	0.005	-0.021	-0.012
Dummy variables				
Narrow working space (no)	0.024	-0.040	0.121 **	0.025
Doing work above one's head (no)	-0.095	0.025	-0.179 **	-0.058 **
$\overline{R}^2$	0.32	0.52	0.40	0.47
$\hat{\sigma}$	0.34	0.23	0.21	0.28
N	142,600	111,000	51,900	305,500
n	598	388	185	1,171

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

: ** = Significantly at α=5%; * = significantly at α=10%.

A (large) majority of the different job discomforts and work related risks of sickness and injury has no significant effect on individual earnings of any worker group. Furthermore, most significant parameter estimates do not have the expected compensating effect. Conforming to the concept of a kind of labour ladder (see chapters 3 and 4), within each labour market segment also we can talk of job packages that have more or less allure, whereby higher earnings correlate with certain more favourable non-monetary work aspects

(and vice versa). It is found for both primary worker groups, for example, that higher (lower) earnings significantly go together with less often (more often) have to stand still or walk uninterruptedly during work (factor score P_4; see section 5.2.3) and less often (more often) have to deal with difficult or aggressive guests (M_6). It is notable here that both work aspects have a comparable income effect in both primary submarkets of approximately 4 per cent. Earnings compensation in the professional market only applies for the discomfort of frequent requirement to work in a cramped working space (dummy variable). For workers in the secondary labour market there is only a compensating effect for uncomfortable posture during work (P_3), comprising the frequent need to stretch out a long way with hands or arms, to keep the arms raised and to work in uncomfortable positions (see table 5.4). There is no significance found for these specific work aspects in the primary labour market, which does not conform to the SLM expectations.

5.3.4. Earnings, human capital, working conditions and other worker/job attributes

In general the parameter estimates for the influence of the various schooling indicators and working conditions in model B are very similar to the estimation results in model C, which additionally includes two group characteristics and a few other job characteristics as predictors of individual earnings (see table 5.10). Clear differences in the estimation results between models B and C in the professional market are the absence in model C of significance of the partial effect of the quadratic and cubic specification of the age variable and of the factor score referencing the often long periods of standing or walking at work (P_4); the size of the corresponding parameter estimates is otherwise comparable with that in model B. For craft employees in the Dutch hospitality industry also P_4 in model C has no explanatory power whereas freedom in work to harmonise work and tasks in the private sphere (M_7) now does have a significant compensating effect: less (greater) freedom in work leading to higher (lower) earnings.

Controlled for the determinants in model B the type of employment contract in the professional market is also significant for the position on the income ladder: workers with a permanent contract of employment earn on average 13 per cent more than their colleagues with a temporary appointment (ceteris paribus). In the lower tier of the primary spectrum this is 11 per cent and in the secondary labour market 6 per cent (at the 10% level). With the exception of the professional market, the size of the job also significantly determines the earnings position: workers with flexible working hours or who contractually work for 11 hours or less per week earn on average 11 per cent less than their colleagues with a bigger part-time job. Partly as reference for the occupation performed, the department in which a worker spends most time at work only has explanatory power in the secondary labour market: workers in service and on reception (more than averagely women) earn significantly more than workers in the other departments (reference group).

Table 5.10: Estimation results of earnings model C for employees in the Dutch hospitality industry by PCS labour market segment, September 2001

GROUP CHARACTERISTICS	Secondary workers	Craft workers	Professional workers	Total
Male (female)	-0.017	0.047 *	-0.029	0.005
Foreign country (the Netherlands)	-0.131 **	-0.051	-0.085	-0.055 *
JOB CHARACTERISTICS				
Permanent appointment (temporary)	0.061 *	0.111 **	0.133 **	0.082 **
Job size (small part-time)				
Large part-time	0.111 **	0.110 **	-0.057	0.068 **
Full-time	0.003	0.077 **	0.041	0.070 **
Department (other departments)				
Kitchen	0.055	-0.043	0.140	-0.006
Service	0.156 *	-0.020	0.120	0.031
Reception	0.250 *	0.079	0.106	0.126 **
Housekeeping	0.001	0.017	-0.005	-0.040
Management	0.203	0.031	0.189	0.107 *
$\bar{R}^2$	0.33	0.52	0.42	0.49
$\hat{\sigma}$	0.33	0.23	0.21	0.28
N	142,600	111,000	51,900	305,500
n	598	388	185	1,171

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : A permanent appointment is inclusive of temporary employment with the commitment of a permanent contract.

: Small part-time work = flexible working hours or contractually for at most 11 hours per week; large part-time work = 12-37 hours per week; full-time work = 38+ hours per week.

: N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

: ** = Significantly at α=5%; * = significantly at α=10%.

After correction for differences in the amount of human capital and various job characteristics, no earnings difference is found between males and females in the secondary labour market. Contrary to the SLM expectations, in this multivariate setting, it is only in the lower tier of the primary labour market where individual earnings for males are on average 5 per cent higher than for females. Conforming to the SLM predictions, however, country of birth as a group characteristic only influences the earnings position in the secondary labour market segment: hospitality workers born in the Netherlands earn on average 13 per cent more than workers born abroad.

5.3.5. Earnings, worker, job and firm characteristics

A further expansion of model C with firm size and business group as influencing factors on the demand side of the labour market results in a greater explanatory power only in the lower tier of the primary labour market. For this worker group the adjusted determination coefficient increases from 52 per cent in model C to 56 per cent in model D (see table 5.11). In model D we also find a prevalent stability in the parameter estimates. Where in model C some clear changes in the estimation results are perceived, the corresponding point estimates and significance in model D mostly conform once again to models A and B. In the professional market we identify in model D, for example, once again significance of the partial effect of the quadratic and cubic specification of the age variable and with comparable parameter estimates as in model A. There is also significance again in this labour market segment for the influence of the job discomfort of long periods of standing or walking and with an estimated effect as great as in model B. In the lower tier of the primary spectrum also this work aspect in model D is again found to be significant.

Table 5.11: Estimation results of earnings model D for employees in the Dutch hospitality industry by PCS labour market segment, September 2001

FIRM CHARACTERISTICS	Secondary workers	Craft workers	Professional workers	Total
Firm size (1-9 employees)				
10-19 employees	0.012	0.110 **	0.111 **	0.071 **
20-49 employees	0.055	0.138 **	0.022	0.091 **
50+ employees	-0.017	0.055	0.106 **	0.022
Business group (fast food sector)				
Cafe sector	0.058	-0.092 **	-0.042	-0.009
Restaurant sector	0.023	-0.121 **	-0.011	-0.031
Hotel sector	0.071	-0.024	-0.020	0.014
$\bar{R}^2$	0.33	0.56	0.42	0.50
$\hat{\sigma}$	0.33	0.22	0.21	0.28
N	142,600	111,000	51,900	305,500
n	598	388	185	1,171

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : N = The number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

: ** = Significantly at α=5%; * = significantly at α=10%.

After correction for the worker and job characteristics in model C, workers in the lower tier of the primary labour market in small establishments (1-9 employees) earn on average less than workers in larger establishments. Compared with the largest establishments just no

significance is observed. In the professional market also, individual earnings in small establishments are on average 11 per cent lower than in establishments with 10-19 workers. Such an earnings difference is also identified in this labour market segment in a comparison to workers in the largest establishments. The business group as an earnings-determining factor only has explanatory power in the lower tier of the primary labour market. Not consistent with the bivariate findings workers here in the fast food sector earn significantly more than workers in the cafe sector and restaurant sector. For workers with a secondary job in the Dutch hospitality industry neither the firm size nor business group have additional explanatory power for the perceived relative income inequality.

5.4. Summary, conclusions and discussion

As part of the search for indications for the empirical plausibility of a segmented labour market in the Dutch hospitality industry an investigation of the actual earnings of workers is central to this chapter (see also chapter 1, step 3 in figure 1.1). The segmentation theory predicts significantly different wage-setting processes for workers in different labour market segments (see chapter 2). By contrast, the neoclassical theory does not assume different worker groups and predicts the position in the labour market, on the income ladder in particular, primarily to be determined by the wealth in human capital. According to the segmentation theory this influence on the income position applies especially on the primary labour ladder, whereas the human capital model in the secondary labour market segment has less if any explanatory power. The literature on segmentation also challenges the neoclassical expectation that secondary workers benefit from earnings compensation for being exposed to various forms of job discomfort and risks of sickness and injury. According to the segmentation theory such compensation only applies to primary employees (see, for example, Graham and Shakow (1990)). Where human capital and working conditions are significant predictors of the wage determination process in the primary labour market, the segmentation theory states that this is the case to the secondary labour ladder for group characteristics such as gender and ethnicity. There is a traditional assumption here that the income position of women lags behind that of men and that "minorities earn less than majorities" (ceteris paribus). To test these SLM expectations, earnings equations are estimated for various worker groups in the Dutch hospitality industry. As a basis for the empirical investigation we use a representative sample of hospitality workers from the Implementing Body of Social Insurances ("Uitvoeringsorgaan Werknemers Verzekeringen (UWV)"), pointing to the employment structure as at September 2001 (see section 3.2). With regard to the identification of relevant labour market segments we apply the PCS segmentation method resulting in a stratification of the hospitality labour market into a secondary, craft and professional market (see section 3.5). The IEQ segmentation method (see section 3.4) is largely governed by the individual earnings and from the point of view of selectivity for estimating earnings equations is therefore methodically less suitable (see also Brouwer, Groot, Muizelaar and Teulings (1992) and Dekker, De Grip and Heijke (1995)). In view of certain theoretical considerations, findings in the empirical literature and the availability of relevant data from the Hospitality Employees Study (see section 5.2.1), the measurement chosen for the productive knowledge and skills of hospitality workers is the

net hourly wage which, for estimation purposes, is formulated logarithmically in the various earnings equations. With this relative earnings concept as regressand, as a natural starting point we firstly estimate various earnings functions according to the human capital approach (see, for example, Becker (1967), Mincer (1974) and Willis (1986)), followed by gradual expansion with additional determinants of individual earnings. In particular, we estimate four variants of a classical linear regression model. In model A we assume a HCEF setting, applying only various schooling indicators as predictors of individual earnings. To test the hypothesis of compensating earnings differences, model B additionally includes some aspects of the physical and mental workload as determinants. Next, model C additionally (to model B) specifies a number of group characteristics and other job characteristics as determining factors, whilst finally in model D the business group and size of the establishment are also added as explanations for the perceived earnings differences between workers. Some empirical findings can be summarised in the manner shown below.

Model A – Concurring with the general findings in the empirical literature (Willis (1986) and Card (1999); see also fn. 63) we can also conclude that for the Dutch hospitality industry as a whole alternative HCEF formulations have a traditional explanatory power and mostly significant parameter estimates having the expected sign. Empirical analysis particularly reveals that the age of the hospitality worker as an indicator of the amount of additional schooling in the labour market (formal and informal) is a significantly better predictor of the earnings position than the number of years of experience in the sector. This finding is not in line with the expectation as argued for in section 5.2.1. An earnings equation with only a parabolic specification of the age of the worker, including a constant term, already leads to an explanatory power of 38 per cent and also the expected significant concavity in the estimated earnings profile (levelling out at age 47). Rival empirical investigations also demonstrate that in line with the findings in Murphy and Welch (1990) a cubic addition of the age variable clearly benefits the explanatory power of the various HCEF formulations. Including the schooling level achieved in general education and an indication of formal additional training in the form of one or more completed hospitality courses, the estimation results of model A illustrate the significance of the human capital of workers for actual earnings in the Dutch hospitality industry (see table 5.8). This neoclassical finding may also, however, be regarded as an indication for the institutional effect of the Hospitality Industry CAO. For the hospitality industry as a whole, the credential effect of a higher educational level (from low to intermediate and from intermediate to high) is estimated at an average of 4 per cent. The estimated income effect of completed post-initial schooling is considerably greater at an average of 9 per cent. These empirical findings possibly point to insufficient schooling in certain additional knowledge and skills required in the hospitality industry. In line with the SLM predictions, the explanatory power of earnings equation A in the primary labour market is greater than in the secondary segment. This is especially clear in a comparison of the model performance in the lower tier of the primary labour market with that in the secondary segment. For this primary worker group – i.e. with a main job in the Dutch hospitality industry but without completed initial professional education at an intermediate or high level – the selected schooling indicators together explain almost half of the perceived income inequality. In the secondary labour market segment this is 31 per cent. For workers in the lower tier of the primary labour market the

166

schooling level achieved in general education has a significant income effect of an average 8 per cent and workers who have completed one or more hospitality courses earn on average 11 per cent more than their colleagues with no formal additional training (ceteris paribus). In line with the SLM expectations and conforming to the usually minimum job requirements, no significance is found for either schooling indicator in the secondary labour market (only for the age of the worker). In the professional market the influence of formal additional schooling on the income position is the greatest with an average of 13 per cent. An investigation of the effect of specific hospitality courses reveals that in the professional market only does completed vocational training (i.e. complementary to the initial professional education) create a significant improvement in the earnings position. For workers in the lower tier of the primary labour market this applies to internal training and management courses. Representative research into the knowledge of, and compliance with, the Hospitality Industry CAO in 1995 (Dutch Board for the Hospitality and Catering Industry (1996a)) reveals that a large proportion of employers and workers do not have a good knowledge of the content of the various CAO regulations and this is perhaps an important cause for non-compliance with parts of the CAO. There is also incomplete knowledge of the compulsory function valuation system: "Amongst employers, familiarity with the function valuation system is greater than amongst workers: 57% and 39% respectively." (p. 22). It is likely that the issue of knowledge of the CAO regulations also has a certain validity power in September 2001 and its influence is found in the estimation results of the earnings equations. It is conceivable that a greater knowledge and (accordingly) compliance with the Hospitality Industry CAO will produce a (still) greater explanatory power of the schooling indicators in the various earnings functions than now.

Model B – Job discomforts and work-related risks of sickness and injury are assumed to be a not unknown phenomenon in the Dutch hospitality industry, even in the case of normal performance of the function (Landelijke Bedrijfscommissie voor het Horecabedrijf (1993)). Discomforts at work occur on all rungs of the labour ladder, in occupations that can traditionally be described as secondary, such as kitchen assistant, cleaner and chambermaid as well as in primary occupations such as cook and receptionist. Examples of discomforts and risks in hospitality work include: (a) the lifting of foodstuffs, ingredients, boxes, pans, plates and buckets of water, (b) work involving walking, standing and being tied to one place, (c) pressure during peak times in terms of guest numbers, (d) an uncomfortable posture at work, (e) monotonous work and (f) risk of injury through handling knives, operating slicing machines, burns from hot surfaces, slipping on floors, falling down steps and attacks from unwelcome guests (see also table 5.3). The reality of the risks of injury at the end of the list is, for example, revealed by the information contained in the Injury Information System 2001 ("Letsel Informatie Systeem (LIS)") which registers all accidents at work that require emergency treatment at a hospital in the Netherlands (Stichting Consument en Veiligheid (2003)). For the Netherlands as a whole, the probability of such a more serious accident at work in 2001 is estimated at 1.5 per cent (15 accidents per 1,000 persons employed). Differentiated by branch of industry, this risk of accident is largest for both males and females in the Dutch hospitality industry, 3.4 per cent and 2.1 per cent respectively. According to the LIS, contact with a cutting or slicing object is by far the most significant cause of an emergency accident at work in the Dutch hospitality industry.

Tripping up, slipping on a flat surface, acute physical strain and contact with a hot liquid or steam are also examples of causes that lead to a greater than average number of emergency treatments in the hospitality sector. In addition to the productive knowledge and skills required for the hospitality job, aspects of physical and mental workload also form a formal part of the function valuation system for earnings determination, albeit carrying less weight (see section 5.2.4). To estimate the influence of different working conditions on the earnings position and thereby testing the hypothesis of compensating earnings differences, use is made of the answers to the many work experience aspects in the Hospitality Employees Study. With a view to parsimony and the avoidance of a large degree of multicollinearity, these working conditions, using principal components analyses (PCA) are condensed for regression purposes into a limited number of orthogonal and interpretable factor scores (see section 5.2.3). A total of 19 different indicators for physical workload are distinguished of which 6, due to a communality less than 50 per cent, are ultimately omitted from the PCA, whilst the remaining 13 aspects can be summarised via a classical PCA and varimax rotation into 5 principal components, whereby almost 70 per cent of the total variance is explained (see table 5.4). The resulting estimated factor scores can be properly interpreted and can be described as follows: handling weights over 5 kilograms (P_1), handling weights over 25 kilograms (P_2), working in uncomfortable positions (P_3), standing/walking uninterruptedly (P_4) and recurring work (P_5). In the same manner, 22 indicators of mental workload can be condensed into 7 principal components with 60 per cent of the total variance explained (see table 5.5); furthermore, 5 individual work aspects are omitted from this factor analysis due to a communality below the critical threshold. The corresponding factor scores may be labelled as: work organization and direct management (M_1), work pace (M_2), colleagues and unforeseen situations (M_3), discrimination (M_4), freedom in work: work pace (M_5), guests (M_6) and freedom in work: work versus private matters (M_7). A traditional principal components analysis whereby all individual work attitudes from both separate investigations are combined leads to virtually the same categorising of working conditions. The application of the more appropriate categorical variant of PCA (CATPCA) also leads to very comparable empirical findings. Due to easier to interpret results and orthogonality of the factor scores with classical PCA and the loss of observations (cases) with CATPCA, the results of the traditional variant have been chosen for continuation of the analysis. As indicated, this chapter applies some estimated factor scores as determinants of individual earnings; in chapter 8 as predictors of overall job satisfaction, job search and individual labour mobility. In line with the SLM predictions various aspects of perceived physical and mental workload as additional determinants in earnings equation B have additional explanatory power especially in both primary labour market segments (see table 5.9). Consistent with the general findings in the empirical literature, however, in the present SLM setting mixed results are identified with regard to the hypothesis of compensating earnings differences. For all worker groups an (ample) majority of the selected working conditions has no influence on the earnings position and most of the significant parameter estimates have no compensating effect. Earnings compensation in the professional market applies only to the discomfort of being required to work frequently in cramped working spaces (dummy variable, one of the indicators that due to a low communality is finally omitted from the PCA). The compensating effect for this discomfort is estimated at 12 per cent. For secondary workers a compensating effect applies only for uncomfortable posture during work (P_3),

which refers to frequent stretching out far with hands or arms, keeping the arms raised and having to work in uncomfortable positions. There is no significance identified for these working conditions in either primary submarket. In the lower tier of the primary spectrum there are no compensating effects perceived at all. In harmony with the alternative hypothesis that primary terms of employment and (non-monetary) job characteristics go hand in hand (see also Berkhout, De Graaf, Heyma and Theeuwes (2001)) we find for both primary worker groups, for example, that higher (lower) earnings correlate significantly with the lesser (greater) frequency of having to work long periods of time walking or standing (P_4) and with the lesser (greater) frequency of having to deal with difficult or aggressive guests (M_6). We can conclude in summary that the SLM prediction that earnings compensation for various discomforts and risks at work mostly benefits primary workers and scarcely if at all secondary workers in the Dutch hospitality industry has no empirical validity, at least not on the basis of the estimation results of earnings equation B.

Model C – After correction for the various schooling indicators and working conditions in model B, group characteristics and certain other job characteristics also have explanatory power for actual earnings in the Dutch hospitality industry. In particular, the empirical findings from earnings equation C illustrate that workers with a permanent contract of employment earn on average 8 per cent more than workers in temporary appointments (see table 5.10). In the professional market this is 13 per cent, in the lower tier of the primary labour market 11 per cent and in the secondary segment 6 per cent. Except for the professional market the size of the job is also a significant determinant of the earnings position, i.e. workers with flexible working hours or who are contracted to work for no more than 11 hours per week earn on average 11 per cent less than workers with a large part-time job (12-37 hours). The department in which a worker is mostly engaged to work only has explanatory value in the secondary labour market, whereby in service and on reception the net hourly wage is on average higher than in 'the other departments' (reference group). Controlled for differences in the amount of human capital, working conditions and certain other job characteristics, no significant earnings differences are identified between males and females in the secondary labour market. Only in the lower tier of the primary labour market do males earn on average 5 per cent more than females. This finding does not fit in with the SLM expectations. What does conform with the segmentation theory, however, is that group characteristics in the professional market play no role whatsoever in earnings determination and country of birth has explanatory power only in the secondary labour market, in which workers born in the Netherlands earn averagely 13 per cent more than workers born outside the Netherlands. With a multivariate setting it is conceivable, although it is not clear if and to what extent, that the perceived inferior income position in the various submarkets of women, workers born outside the Netherlands, workers who are temporarily appointed and, for example, having a small part-time job are illustrative of discrimination effects.

Model D – Controlled for different worker and job characteristics, the empirical literature also often identifies separate industry effects for earnings determination and a significant positive effect of the size of the business (see section 5.2.2). Berkhout, De Graaf, Heyma and Theeuwes (2001) conclude, for example, that there are significant recognisable industry

effects in the Netherlands on hourly wages and that larger firms pay more than smaller businesses, even after correction for, inter alia, schooling, age, work experience and the gender of the worker. The Dutch hospitality industry in their study is a clear example of a sector where workers in general receive a lower hourly wage than workers in other sectors. Focusing on the hospitality industry, this chapter investigates a possible sector effect at a lower aggregation level, by expanding earnings equation C with business group dummies as determinants. This model also specifies an additional four indicator variables for employer size (see table 5.11). In particular, the estimation results of (this) model D illustrate that workers in the lower tier of the primary labour market in small establishments (1-9 workers) earn on average less than workers in larger establishments; only when compared to the largest establishments (50+ workers) just no significance is recorded. In the professional market too, individual earnings in small establishments are on average 11 per cent lower than in establishments with 10-19 workers. Such an earnings difference is perceived in this labour market segment also in a comparison with workers in the largest establishments. The business group in which the worker is employed only has explanatory power in the lower tier of the primary labour market. It is notable here that workers in the fast food sector earn significantly more than workers in the cafe sector and restaurant sector. For workers in the secondary labour market segment neither factor on the demand side of the labour market, i.e. business group and firm size, have any explanatory power for the perceived earnings differences.

Since in the several extensions of the earnings equations generally a predominant stability in the parameter estimates is perceived, we confined discussion of models B, C and D to the estimation results relating to the additional determinants. Although in some parts the empirical findings of the earnings equations are consistent with the SLM predictions and in general the size and significance of the corresponding parameter estimates between the labour market segments do not infrequently differ, it is notable that F tests, whereby the estimation results of earnings model D are compared in pairs for the three PCS submarkets, do not reject the hypothesis of parameter constancy (see, for example, Maddala (1992, pp. 170-171)). In this particular way we can thus conclude that there are no significant different wage-setting processes in the Dutch hospitality industry according to the labour market segment in which a worker is employed.

Future research – To place the present investigation into the earnings differences in the Dutch hospitality industry in perspective, and also to indicate possible directions for future research, section 5.2.1 also focused on certain possible sources of biases in the parameter estimates (omission of relevant variables, errors-in-variables etc.) and on proposed methods of solution in the earnings literature. This view illustrates that depending on the *structure* of the analysed data (cross-section, panel data, individual information about relatives) and applied assumptions such as the endogeneity of, or measurement errors in, the schooling variable, there are diverse methods of correction possible using specific *variables* such as indicators of ability, family background and school quality. An example is the application of a relevant family background variable as (a) an additional determinant in the earnings equation (as a control or an indicator for ability), (b) an instrument for ability assuming measurement errors in the ability measure applied, (c) an instrument for the amount of

schooling assuming measurement errors in the schooling variable, (d) a determinant in an explanatory model of the amount of schooling and (e) a determinant in an explanatory model of the variable return to education. The collection of information relevant to the ability and family background of hospitality workers and school quality characteristics may then also be regarded as a significant source of expansion of the basis for research. Such an improvement is possible by expanding the current questionnaire with the employees study (to include family background) and by perhaps utilising relevant (more objective) external information sources (ability, school quality). In addition, the opportunities for analysis can be increased by building up a panel structure of the database of workers and by, albeit with a possible lower priority, collating individual information about relatives. With such examples of a possible expansion of the Hospitality Employees Study in range and depth, repeat research can not only evaluate the robustness of the current OLS estimation results, but these findings can also be placed in a more varied perspective (for example, in relation to IV and simultaneous equations) and by which certain presumed biases in the estimated effects can be numerically estimated.

CHAPTER 6

Labour market segmentation and labour flexibility

An investigation into the Dutch hospitality industry

6.1. Introduction

In our search for empirical evidence of a segmented labour market in the Dutch hospitality industry (see chapter 1), in this chapter we explore the subject of labour flexibility in order to investigate the empirical plausibility of the core-periphery (SLM) representation of the flexible firm (see, for example, Atkinson (1984, 1988), Hunter, McGregor, MacInnes and Sproull (1993), Huiskamp (1999) and Goudswaard (2003)).

For empirical elaboration we use a representative sample of hospitality employees from the administration of insured workers of the Implementing Body of Social Insurances ("Uitvoeringsorgaan Werknemers Verzekeringen (UWV)")[92], pointing to the employment situation in September 2001. Regarding the identification of relevant labour market segments in the Dutch hospitality industry we use the PCS classification procedure (see chapter 3). By investigating also labour use practices in the different business groups of the Dutch hospitality industry (see fn. 1) the present exploration, to our knowledge, enriches the flexibility literature[93].

This chapter is structured as follows. In section 6.2 we elaborate on the concept of labour flexibility, briefly discussing its different manifestations. A further examination of functional and numerical labour flexibility in the Dutch hospitality industry is presented in section 6.3 and section 6.4 respectively. Thereafter, in section 6.5, we briefly discuss other forms of flexibility in the hospitality industry and provide an overall impression of flexibility practices in the different business groups assuming the presence of labour market segmentation. In section 6.6 we end this chapter with a summary, conclusions and discussion.

---

[92] See chapter 3 for a description of the UWV data.

[93] Smulders and Klein Hesselink (1997), Dunnewijk and Lammertsma (1999), Hartgers and Boelens (2002) and, for example, Goudswaard (2003) also explore manpower practices in the Dutch hospitality industry, but only at the industry level.

6.2. The concept of labour flexibility

In the strategic management literature the need for the pursuit of a sustained competitive advantage is emphasized (Porter (1985)). To this end an employer can basically aim at having one of two of the following competitive advantages: cost leadership or differentiation. At the same time the strategy should be focused on a limited number of target groups (focus strategy). In the hospitality industry successfully aiming at one of both strategies implies that a hospitality employer is able to cope better with the forces of competition than fellow employers and with that providing guest-valued services (Porter (1980)). As an instrument to examine systematically all relevant operations of the business undertaking use can be made of the concept of the value chain[94]. Examples of value activities in a restaurant include the buying in of products, the menu composition, the preparation of a meal, the garnishing of a dish, the cleaning of the kitchen, accounting, advertising, price-fixing, maintaining an Internet site, the design of the establishment and serving and advising the guests. With this human resource management supports all value activities in the organization by way of controlling the knowledge, the skills, the motivation and the costs of the work force (see also Go, Monachello and Baum (1996)).

Generally, the direction of labour will rest on a desire for labour flexibility, in particular in response to various developments in the relevant business environment[95]. Depending on the intended competitive strategy the focus will be on making the human capital of workers (more) pliable (focus: differentiation) or on making (more) flexible the costs of labour and more generally the rules of play between the employer and employees (focus: costs).

From the viewpoint of the employer, labour flexibility can be defined as the ability of the organization to adjust the quantitative and qualitative effort of employees continuously to business needs. Practically, a flexible effort of workers can be encouraged in different ways. In the management and sociological literature different forms of labour flexibility are distinguished, including functional and numerical flexibility (see, for example, Lagos (1994), Hofman, Steijn and Van der Laan (1997), Den Boer and Hövels (2002) and Goudswaard (2003)).

The stimulation of functional (or qualitative) labour flexibility refers to the employers´ pursuit of a more flexible business undertaking by way of encouraging workers to be able to turn one´s hand to several and new things. Functional labour flexibility aims at adapting the productive proficiency of workers to the continually changing market conditions, dictated by, for instance, altering consumer demand or organizational innovations (see Dialogic

---

[94] The value chain divides the business undertaking into several interdependent and strategically relevant value activities in order to gain insight into the different cost aspects of these activities and to examine the extent these business units can contribute significantly to the pursuit of valued differentiation (Porter (1985, 1999)).

[95] See Dutch Board for the Hospitality and Catering Industry (2005) for an investigation into recent and expected trends likely to affect the Dutch hospitality industry.

(2005)). Additional training constitutes an important instrument to bring about flexibility of the work force concerning job content (see also chapter 3).

As opposed to content flexibility, numerical (or quantitative) flexibility relates to, above all, the volume of labour and can be both externally and internally oriented. External numerical labour flexibility refers to the manoeuvrability of the organization to bring the number of workers in the near future into line with the (expected) market conditions (e.g. workers being employed on a temporary basis, including temporary agency workers). On the other hand, internal numerical labour flexibility refers to the feasibility to adjust the numerical effort of workers to business needs without changing the number of employees. In this respect one can think of, for instance, flexible working hours and working overtime.

Thus, functional labour flexibility particularly affects the efficacy of business and numerical flexibility its efficiency. Stated otherwise, the former flexibility concept is a pointer to the numerator of the common productivity definition (value added), while the latter notion, above all, refers to its denominator (number of full-time equivalent workers).

Using the UWV sample of hospitality employees as a starting point, in the following two sections we discuss the subject of functional and numerical labour flexibility in the Dutch hospitality industry and its business groups in more detail.

6.3. Functional labour flexibility in the Dutch hospitality industry

Employers with the aspiration to attain valued differentation will consider customer-oriented service of paramount importance. Differentiation for better meeting consumer demands implies custom-made services and with that, among other things, a desired flexibility of hospitality workers, including the ability to imagine oneself in the realm of thought of guests, attentive service, entertainment and creative talent. Therefore, in addition to numerical flexibility it is expected that enterprising hospitality employers aiming at valued differentiation demand, above all, content flexibility. Pine and Gilmore (1999) argue that modern society can increasingly be characterized as an experience economy, in which consumers want to be entertained and surprised pleasantly, returning home with an experience that will be remembered for a long time and goes round. In a hospitality setting also the complete range of services is frequently of overriding importance in selecting the particular outlet. To the modern (wealthier) consumer experience will be more than ever on the personal (hospitality) agenda[96]. Undoubtedly, this pursuit of experience is affected by the business cycle.

---

[96] For example, in selecting a hospitality outlet in the Netherlands to have a drink, to the Dutch consumer considerations such as the conviviality, public, service level and atmosphere are generally more important than the assortment of beverages and the price level (Dutch Board for the Hospitality and Catering Industry (2002a, p. 75)). Similar conclusions apply when the main reason for visiting a hospitality outlet is having a meal (p. 92).

The (expected) performance of the staff, including in the kitchen and, above all, the front performance of service employees, are in many situations[97] decisive for (not) paying a visit to some hospitality establishment. Nowadays, consumers more than before opt for a concept and therefore are less loyal towards a specific hospitality firm. By clearly selecting a particular hospitality concept, tuned to one or a limited number of target groups, suited to the employer and fitting with market demand and one that can be adapted relatively easy when consumer demand changes significantly, then guest-valued services can continually be provided. In addition to numerical flexibility, this requires, above all, qualitative flexibility of means in the organization, including functional labour flexibility. By way of illustration, front cooking in restaurants forms a modern trend (conceptual innovation) towards more experience for the guest[98]. Kitchen workers should be expressly aware of this open working method.

Functional labour flexibility is stimulated by improving the human capital stock of workers. In addition to the traditional human resources such as the level and direction of initial education (basic knowledge and skills) and relevant work experience, in the hospitality industry also particular endowments will contribute considerably to the qualitative flexibility usually not observable in empirical research. Manual and communicative talents and creativity regarding, for example, the preparation and the presentation of dishes and entertainment often are of overriding importance to attain a successful business undertaking[99]. Besides the above-mentioned traditional human capital indicators, these talents are expected to be fostered by, above all, (natural) ability, social skills and with that the quality of schooling.

Furthermore, functional labour flexibility may also be stimulated using a human-competence approach in the organization. In this context, by way of additional training it is attempted to better match the quality of labour supply with the required competences. Particular follow-up courses in the hospitality industry include vocational training addressed to aspects such as cooking and hygiene and administrative and management training tuned to the hospitality practice.

---

[97] In general, consumer preferences regarding hospitality services are influenced by the *combination* of the particular activity (e.g. day trip or business meeting), the company and the like. Sometimes one wants to be entertained, but at another moment only served smoothly. Above all, hospitality demand constitutes a derived consumer demand. In all cases, however, "It is the interaction between the frontline employee and the customer, known as the "service encounter" or the "moment of truth," that has the most direct impact on the customer's level of satisfaction and overall perception of the organization.", (Go, Monachello and Baum (1996, p. 2)).

[98] See Dialogic (2005, pp. 146-147) for examples of major process, product and conceptual innovations in the Dutch hospitality industry in the period 2002-2004.

[99] In a classical human capital earnings function these talents match with the explanatory variables of the wage-setting process not being observed directly and are therefore represented by the error term (see chapter 5).

Labour market segmentation and labour flexibility

In the literature a distinction is made between firm specific and general training[100]. A reason for this delineation is the expectation that these forms of additional training have a different effect on, among other things, search efforts in the external labour market and actual labour mobility (De Wolff, Luijkx and Kerkhofs (2002); see also chapter 8). In practice, however, training courses are usually characterized as being both specific and generic, by which an accurate distinction can not be made (Dekker, De Grip and Heijke (1995) and Theeuwes (1995); see also chapter 3). From the description of the various forms of additional training in the questionnaire to the Hospitality Employees Study only internal training is likely to be more firm specific (see table 6.1). The other courses are expected to bear, above all, a more general character, leading to proficiency to a large extent also useful in other organizations.

With respect to additional training also a distinction can be drawn between core and career training (see, for example, Dekker, De Grip and Heijke (1995)). Core training is particularly used to counter obsolete human capital as a result of, for instance, (technological) innovations and with that keeping up with the times in the present job. On the other hand, career training aims at letting the employee in question to move to a higher position in the organization[101]. As additional training becomes more substantially in nature, indicated by, for example, the number and duration of relevant training courses completed, the probability of promotion is likely to be higher. Nevertheless, for the purpose of climbing the career ladder, in the literature the completion of additional training is, above all, seen as a necessary condition, not being sufficient (Dekker, De Grip and Heijke (1995))[102].

---

[100] To determine the extent of firm specificity of additional training, according to De Wolff, Luijkx and Kerkhofs (2002) indicators can be used such as the location of training (inside or outside the organization) and the mode of financing (training paid by the employer or by the employee). It is expected that firm specific training is generally held inside the organization and is to a large extent financed by the employer.

[101] Function mobility can be both horizontally and vertically oriented. With horizontal mobility the emphasis falls on another position in the organization, in which the level is comparable to that of the old job. Vertical mobility means mounting the internal labour ladder (promotion) or descending a few steps (demotion, Hofman, Steijn and Van der Laan (1997, p. 25)). Of course, these job transitions may also go beyond the walls of the present organization, defining the difference between internal and external labour mobility (see also chapter 8).

[102] In the literature a relationship between additional training and intraorganizational mobility is not always supported by the data. Theoretically, a mutual causal connection is often assumed, that is additional training ends in a higher probability of internal mobility and vice versa. On the one hand, new (and substantial) procured human capital is likely to open doors to a better job position in the organization, on the other it is conceivable that function mobility goes together with quality of labour supply not entirely matching the required qualifications and with that implying a certain educational need leading to additional training. Bivariate analyses in Gelderblom, De Koning and Van Winden (1998) and De Wolff, Luijkx and Kerkhofs (2002) seem to support both hypotheses. However, when at the same time consideration is taken into account of various worker and job characteristics (multivariate setting), then both hypotheses are rejected. In the Hospitality Employees Study both the moment of internal mobility and that of the completion of training courses are not known. Consequently, in the present setting, it is not possible testing both hypotheses for the case of the Dutch hospitality industry (see also chapter 8).

Table 6.1: Additional training and internal mobility in the Dutch hospitality industry by PCS labour market segment, September 2001

	Professional workers	Craft workers	Secondary workers	Entire hospitality sector
	%	*%*	*%*	*%*
Completed additional training				
Entrepreneurial skills	26	23	5	15
Vocational training	47	25	9	22
Safety training	51	38	12	28
Master course	21	7	1	7
Management training	12	9	2	7
(Enterprise) internal training	12	11	2	7
Administrative courses (hospitality oriented)	9	6	2	5
Without completed additional training	26	42	75	55
Present participation				
Entrepreneurial skills	3	3	2	2
Vocational training	5	4	2	4
Safety training	6	10	3	6
Master course	6	1	1	2
Management training	5	1	4	3
(Enterprise) internal training	3	4	1	2
Administrative courses (hospitality oriented)	1	2	1	1
Internal mobility	20	19	8	14
N	51,900	111,000	142,600	305,500
n	185	388	598	1,171

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : Entrepreneurial skills: general entrepreneurial skills, cafe sector, restaurant business and the like; vocational training: additional training addressed to aspects such as cooking, serving and hygiene (HACCP); safety training: BHV, EHBO, social hygiene and the like. Obviously, workers may have completed more than one hospitality course and/or at this moment (September 2001) do participate in one or more additional courses. This observation also follows from the sum of the relevant percentages.

: Internal mobility is defined as the situation in which a hospitality worker is employed at the present employer for a longer period than he is in the present job position. A distinction between horizontal and vertical internal mobility is not possible.

: N = the number of observations corrected for the under- and overrepresentation in the net sample and subsequently adjusted to the UWV population; n = the size of the net sample.

SLM theory predicts different manpower strategies for different groups of workers (see, for example, Atkinson (1984, 1988) and Goudswaard (2003)). For primary (core) employees the emphasis is likely to be on functional labour flexibility and as one is descending the labour ladder the focus is expected to be on numerical labour flexibility. Atkinson (1984, p. 29) argues:

"Workers in the core group are full-time permanent career employees: say, managers, designers, technical sales staff, quality control staff, technicians and craftsmen. Their employment security is won at the cost of accepting functional flexibility both in the short term (involving cross-trade working, reduced demarcation and multi-discipline project teams) as well as in the longer term (changing career and retraining)".

Generally, primary employees have a closer bond with the industry and the firm for which they are working for than secondary workers (see section 3.6.4). Compared to secondary employees, employers are likely to be more solicitous about their primary staff, being 'key men' in the business undertaking. For surveying some manifestations of labour flexibility in the Dutch hospitality industry for different worker groups, in this chapter we use the PCS classification procedure, i.e. segmentation of the hospitality labour market into a professional, craft and secondary market (see chapter 3). The professional market is associated with the upper tier of the primary labour ladder and consists of all hospitality employees with completed initial professional training at an intermediate or high level. The craft market (lower tier primary) employs all workers who state that their job is a main job in the hospitality industry, but without having any initial professional certification (at an intermediate or high level). The secondary labour market consists of all employees without completed initial professional education (again at an intermediate or high level) and who declare that their job in the hospitality industry literally constitutes a secondary position. The PCS classificatory scheme, to a large extent, relates to the workers' vocational qualification, with professional training and industry experience being two important dimensions (De Wit (1996); see chapter 2).

With additional training as a means to foster functional labour flexibility the following hypothesis can now be formulated:

Hypothesis 1 (7a in chapter 3): Primary employees enjoy more additional training than their secondary colleagues.

The labour market in the Dutch hospitality industry is frequently typified as a market of secondary jobs. The employment figures in table 6.1 justify this characterization: in September 2001 almost half of all 305,500 hospitality employees (on the payroll) has a

secondary appointment. Considering the distribution of primary and secondary employees in the different business groups (see table 3.8), expectations are that additional training has, above all, a prominent place in the hotel sector.

Professionals are initially educated for a job (and career) in the hospitality industry. Their proficiency is likely to be interchangeable between a considerable number of hospitality employers. Therefore, expectations are that for professionals at first a close bond with the industry is perceived. For employees in the craft market this expectation particularly holds for organizational commitment. Obviously, professional employees are likely to show also solidarity with the present employer when there is a good match with (attitude towards) certain job characteristics (see chapter 3). We expect that most of the direct training costs are financed by the employer (see section 3.6.3). Therefore, considering the risk of free-riding, predictions are that within the primary market craft employees enjoy more additional training than their professional colleagues:

Hypothesis 2 (7b in chapter 3): Within the primary segment additional training has more bearing on craft employees than on workers in the professional market.

Conforming to the SLM expectations, additional training holds comparatively more for hospitality employees being positioned higher on the labour ladder. For example, in September 2001, 22 per cent of all hospitality employees has completed one or more courses with regard to vocational training. In the secondary labour market this score is 9 per cent, for craft employees 25 per cent and for professionals 47 per cent. This order applies to all (distinguished) forms of completed additional training. In line with these findings, approximately three-quarters of all professional workers has completed one or more courses tuned to the hospitality industry. In the lower tier primary market this amounts to almost 60 per cent and in the secondary segment to 25 per cent. These empirical findings support hypothesis 1, but not hypothesis 2.

The present participation in additional training gives rise to a more diverse picture and in a single case the observation is eye-catching[103]. Nonetheless, again the conclusion holds that additional training is less important to secondary workers than it is to their primary colleagues. Secondary labour in the hospitality industry is generally associated with "extra helping hands", that is work for which typically neither an initial professional education nor industry experience is required. For secondary workers with *Jedermanns Qualifikation* (see chapter 3) functional labour flexibility is mostly not required. Intraorganizational mobility among secondary workers is observed to be relatively smaller than among primary employees.

Matching the empirical findings in table 6.1 the intensity of additional training is observed to be highest for professional workers and lowest in the secondary segment: a professional

---

[103] Only 2 per cent of all secondary employees has completed management training. The current participation amounts to 4 per cent and with that exceeds the attendance rate among lower tier primary employees.

worker (with completed additional training) has averagely completed 2.6 courses, for lower tier primary workers this amounts to 2.4 courses and for secondary employees to 1.8 courses[104]. Again these observations support hypothesis 1, but not hypothesis 2.

Also in a multivariate setting, primary employees in the Dutch hospitality industry have, in accordance with hypothesis 1, a significant higher probability of having completed additional training than secondary employees (see table 6.3). Compared to the secondary market, for professional workers the odds on completed additional training increases by a factor of 3.5 and for craft workers by a factor of 1.8. The closer one gets to the core of the organization (higher on the labour ladder) the higher the probability of having completed one or more training courses. Hypothesis 2 is rejected once again.

Conforming to expectations, hotel employees have completed additional training more frequently than fellow-workers in the other business groups (see table 6.2). A hotel employee (with completed post schooling) has averagely completed three clusters of training courses, while in the other business groups this amounts to two clusters. In September 2001, 22 per cent of all hotel employees has changed jobs in the present organization at least once. In the other business groups this percentage is significantly smaller.

Table 6.2: Completed additional training in the Dutch hospitality industry by business group, September 2001

	Cafe sector %	Fast food sector %	Restaurant sector %	Hotel sector %
Completed additional training				
Entrepreneurial skills	19	8	14	19
Vocational training	20	15	22	29
Safety training	35	19	25	38
Master course	2	5	9	9
Management training	5	4	4	17
(Enterprise) internal training	6	4	5	16
Administrative courses (hospitality oriented)	3	4	4	6
Without completed additional training	52	65	58	43
Internal mobility	10	11	15	22

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

---

[104] Additional training in the Hospitality Employees Study actually refers to clusters of training courses. Therefore, the computed average number of completed courses underestimates the true number.

Remarks   : Entrepreneurial skills: general entrepreneurial skills, cafe sector, restaurant business and the like; vocational training: additional training addressed to aspects such as cooking, serving and hygiene (HACCP); safety training: BHV, EHBO, social hygiene and the like. Obviously, workers may have completed more than one hospitality course and/or at this moment (September 2001) do participate in one or more additional courses. This observation also follows from the sum of the relevant percentages.

: Internal mobility is defined as the situation in which a hospitality worker is employed at the present employer for a longer period than he is in the present job position. A distinction between horizontal and vertical internal mobility is not possible.

On further reflection, the estimation results in table 6.3 show hotel employees not having a higher probability of having completed additional training than workers in the fast food sector (reference group). Contrary to SLM predictions this situation only holds significantly for workers in the (small-sized) cafe sector. Using vocational or internal training as the regressand the business group variable is observed not to be significant at all.

As noted, only particular hospitality training is likely to end in a job change with the present employer. Of course, additional training not leading to physical mobility in the organization can also contribute significantly to content flexibility. In addition to keeping up the proficiency in the present job and developing further into one´s field, in this respect, one can also think of, for instance, additional training stimulating employability without formally moving to another position in the organization (mental mobility).

It is interesting to note some other empirical findings from the estimated training equations in table 6.3. In the primary market only professional workers have a significant higher probability of having completed additional vocational training than secondary workers. This finding may suggest that additional vocational training is rather complementary than a substitute for the initial professional education (supporting hypothesis 9 in chapter 3). It is expected that vocational training particularly relates to core training, but additional training in preparation to a higher position in the organization is also conceivable (e.g. moving to a senior position).

The regression results also reveal that the PCS labour market segments in this multivariate setting have no significant separate effect on the probability of having completed internal training. This probability is significantly influenced only by firm size and working hours per week (job size).

Neoclassical theory predicts that the participation in additional training decreases with worker's age (see, for example, Becker (1964), Mincer (1974) and Dekker, De Grip and Heijke (1995); see also hypothesis 8a in chapter 3). In table 6.3 the predictand refers to training completed, not to current participation. Consequently, from these estimation results no answer can be given with respect to the empirical plausibility of this age effect.

Table 6.3: Determinants of completed additional training in the Dutch hospitality industry (logit estimates), September 2001

	Additional training (in general)	Vocational training	Internal training
Gender (reference: female)			
Male	-0.193	0.078	0.278
Age (reference: 40-49 years)			
Under 23 years	-1.044 **	-1.024 **	-0.707
23-29 years	-0.785 **	-0.915 **	-0.541
30-39 years	0.094	-0.234	-0.457
50+ years	0.057	-0.048	0.114
Educational level (reference: high)			
Low	-1.021 **	0.080	-0.279
Intermediate	-0.509 **	0.101	0.091
Contractual working hours per week (reference: flexible or 1-11 hours)			
12-37 hours	0.170	0.118	0.789 *
38+ hours	1.140 **	0.474 *	1.328 **
Contract of employment (reference: temporary)			
Permanent	0.308 **	0.464 **	0.170
Firm size (reference: 50+ employees)			
1-9 employees	-0.283	-0.378 *	-1.937 **
10-19 employees	-0.378 *	-0.668 **	-1.247 **
20-49 employees	0.049	-0.472 **	-0.554 *
Labour market segment (reference: secondary segment)			
Professional workers	1.241 **	1.599 **	0.577
Craft workers	0.605 **	0.413	0.627
Business group (reference: fast food sector)			
Cafe sector	0.388 *	0.365	0.153
Restaurant sector	-0.179	0.063	-0.379
Hotel sector	-0.137	-0.013	0.165
Constant	0.315	-1.571 **	-2.764 **
n	1,132	1,132	1,132
$X^2(18)$	314.89 **	177.34 **	100.31 **
Correct classified cases (%)	72.6	79.7	92.8

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : The estimation results rest on three separate logistic regressions. In the second column of table 6.3 the dependent variable refers to completed additional hospitality training in general (yes/no), while

in the next two columns the focus is on explaining the completion of vocational and internal training respectively.

: Educational level: low = LBO, VMBO and MAVO; intermediate = HAVO, VWO, MHS, apprentice system and other professional education at an intermediate level; high = HHS, university and other high professional education.

: n = the number of observations corrected for the under- and overrepresentation in the net sample.

: ** = Significantly at α=5%; * = significantly at α=10%.

However, from a logistic regression using current training as the dependent variable and the same regressors it is observed that hypothesis 8a can not be rejected[105]. For example, compared to the reference worker group (40-49 years) and controlled for labour market segment, for hospitality employees under 23 years the odds on current additional training increases significantly by a factor of 2.3 and aged 23-29 years by 1.3. For workers aged 50 or older this odds is reduced by approximately 50 per cent. From this particular regression it is observed that hypothesis 8b also is empirically validated: full-time employees in the Dutch hospitality industry have a higher probability of currently enjoying additional training than their part-time colleagues, irrespective of the labour market segment being employed in.

Insofar as additional training points to firm specific career training, the job competition theory predicts post schooling particularly being offered to the most preferred workers in the ´waiting room´ for entrance into the internal labour market (see chapter 2). Preference being determined by, inter alia, the expected productivity, flexibility and trainability of workers. Therefore, expectations are that higher educated employees are more likely to enjoy additional training than lower level workers. Though it is likely that most training courses in the Hospitality Employees Study point to core training this prediction is not rejected: lower educated employees have a significant smaller probability of having completed additional training than high level workers (supporting hypothesis 9 in chapter 3). However, with internal training as the regressand, more likely to be firm specific, the initial educational level has no significant effect on the incidence of completed additional training; the same conclusion holds when using current training as the predictand (not supporting hypothesis 9).

Using the UWV data it is not possible to make a distinction between horizontal and vertical job transitions, but as a proxy of the extent of upward mobility, in September 2001, 27 per cent of all hotel employees does expect to get promotion in the next two years (see table 6.4). In the other business groups this percentage is somewhat smaller.

The figures in table 6.4 also point to the flat organizational structure usually observed as a result of the emphatic smallness in the Dutch hospitality industry. Because of the limited number of hierarchic levels usually perceived, we expect that hospitality employees who are ambitious to get on in the organization will generally have to enlarge their theoretical knowledge and productive proficiency by way of, for instance, substantial additional (career)

---

[105] The regression results are available from the author upon request.

training. For mounting the labour ladder relevant work experience by itself is not likely to be sufficient to get promotion. In view of the emphatic smallness it is also expected that for upward mobility employees frequently have to apply for another position outside the present organization.

Table 6.4: Career prospects in the Dutch hospitality industry by business group, September 2001

	Cafe sector %	Fast food sector %	Restaurant sector %	Hotel sector %
Within two years promotion expected ('opportunity')	20	23	21	27
Ambitious to get on in the organization (willingness)	28	26	30	48

Source   : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks   : The exact wording is as follows: *Do you expect to get promotion in the next two years?* and *Are you ambitious to get on within this organization?*

As noted, from the Hospitality Employees Study it is not known when respondent workers have completed their training courses. Given the employment structure in the Dutch hospitality industry with a relative overrepresentation of young workers (see table 3.14) and related with that comparatively few workers having substantial market experience, the extent of completed additional training being out of date is likely to be restricted. The more recent intensity of completed post schooling is possibly better expressed if we confine ourselves to training courses of workers with limited industry experience, say five years or less. This selection matches with 67 per cent of all 305,500 (UWV) hospitality workers employed in September 2001. Using this approach, again the extent of completed additional training and intraorganizational mobility are observed to be largest in the most primary-oriented hotel sector (see table 6.5).

Table 6.5: Completed additional training in the Dutch hospitality industry of employees with limited industry experience (≤5 years) by business group, September 2001

		Cafe sector	Fast food sector	Restaurant sector	Hotel sector
Completed additional training	%	33	28	29	46
Intensity of additional training	#	1.7	1.9	2.0	2.4
Internal mobility	%	4	10	11	18

Source	: "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).
Remarks	: The intensity of additional training is measured by the average number of completed training courses tuned to the hospitality practice (by workers *with completed additional training*).
	: Internal mobility is defined as the situation in which a hospitality worker is employed at the present employer for a longer period than he is in the present job position.

To close this section we compare the extent of additional training in the hospitality sector with that in other branches of industry in the Netherlands. For a consistent parallel we consider the results of the Training Courses Study 1999 ("Onderzoek Bedrijfsopleidingen 1999") of Statistics Netherlands (see table 6.6)[106]. From these findings it is observed that the extent of additional training in the Dutch hospitality industry (in this context defined as SIC 55) is lagging the other branches of industry. For example, in medium-sized and large organizations (10+ employees) in the Netherlands in every job averagely 19.5 hours in 1999 are devoted to formal additional training. In the hospitality industry this amounts to about half of it[107]. The financial institutions with almost 36 training hours per job are (in the present classification) observed to be the leaders; in this industry approximately two thirds of all training courses are organized internally. In the hospitality industry the share of internal training hours (41 per cent) is more in conformity with the national figure. Comparatively, additional training in the hospitality industry is observed to be short averaging two working days for every training course. Nationwide this average equals approximately three working days.

Table 6.6: Training courses in the Netherlands by branch of industry, 1999

Sector	SIC code	Number of training courses	Training hours	Internal training hours	Training hours per course	Training hours per job
		X1,000	*X1,000*	*%*	*X1*	*X1*
Industry	15-37	637	17,191	37.1	27.0	20.0
Construction industry	45	307	6,554	20.0	21.3	21.0
Wholesale/retail trade and repair	50-52	567	14,821	44.9	26.1	17.8
Hospitality industry	55	75	1,233	41.4	16.4	10.0
Banking, finance and insurance	65-67	259	7,819	65.6	30.2	35.8
Other commercial services	70-74	633	17,798	31.1	28.1	19.7
Total		**2,897**	**75,010**	**39.7**	**25.9**	**19.5**

Source	: Training Courses Study ("Onderzoek Bedrijfsopleidingen") and Employment and Wages Survey ("Enquête Werkgelegenheid en Lonen", both Statistics Netherlands).

---

[106] To construct table 6.6 Statline, the comprehensive data base of Statistics Netherlands on the Internet, is used.

[107] It is noted that a large part of the hospitality industry is excluded from the analysis of Statistics Netherlands, particularly all firms with less than 10 employees.

Remarks   : The Training Courses Study is based on a sample of enterprises with 10 or more employees on the payroll. With this the selection of jobs from the Employment and Wages Survey (last column in table 6.6) is consistent.

: The branches of industry are defined in conformity with the Standard Industrial Classification 1993 (SIC, "Standaard Bedrijfsindeling 1993 (SBI)") of Statistics Netherlands. Because of this classification and the exclusion of small firms the results regarding the Dutch hospitality industry in table 6.6 are not comparable to the empirical findings of the Hospitality Employees Study. In the Training Courses Study the following branches of industry are not taken into consideration: (1) public government, (2) education, (3) medical and welfare services and (4) agriculture and fishing. Differentiation of trade into, among other things, wholesale and retail trade is not feasible.

: At the moment of writing, the most recent findings of the Training Courses Study concern the year 1999. The empirical findings of the previous investigation in 1993 are not comparable to the 1999-observations.

: The training courses concerned are supported by the employer, that is financially or by providing the necessary time.

: Education as part of modern apprenticeship and informal training are excluded from the analysis. This also holds for the participation in conferences, seminars, organized group discussions and private study.

6.4. Numerical labour flexibility in the Dutch hospitality industry

The degree to which employers have the possibility to fit labour numerically to (expected) market conditions can also be considered as a measure of labour flexibility. To measure quantitative labour flexibility various indicators can be distinguished.

External numerical labour flexibility refers to the ability of an organization to vary the number of workers in harmony with, for instance, developments in consumer demand and innovations. In the literature this form of flexibility is also referred to as employment flexibility. By way of illustration, in the hospitality industry modern kitchen technology can, in addition to better working conditions for the staff such as less radiant heat or easier to clean out, also end in a more efficient work organization and with that possibly be laboursaving. By way of investments in convenience the production process in the kitchen may undergo a transition from production to 'passing on'.

Internal numerical labour flexibility refers to the ability of employers to bring the actual working hours of workers into line with the (expected) market conditions without changing the number of employees (on the payroll). For example, favourable weather forecasts in the short term are likely to increase the pressure of work in many parts of the hospitality industry. In this respect, flexible working hours or, for instance, the possibility of working overtime may contribute greatly to the numerical flexibility of the organization.

In a SLM setting the employers' pursuit of numerical labour flexibility is, above all, expected to bear on secondary employees, especially being considered as extra helping hands, and considerably less on primary staff.

Hypothesis 3: Numerical labour flexibility has more bearing on secondary workers than on primary employees.

For testing the empirical plausibility of hypothesis 3, using the findings of the Hospitality Employees Study, various indicators of numerical labour flexibility are investigated (see table 6.7)[108]. In the secondary labour market 63 per cent of all employees in September 2001 has a temporary appointment and 87 per cent has a small part-time job (including flexible working hours). Compared to the primary market these findings are supportive of hypothesis 3. Of course, in both tiers of the primary market also temporary appointments and small jobs are observed[109]. These primary findings do not conflict with hypothesis 3 or as expressed by Atkinson (1984, p. 29): "At the core, the *emphasis* is on functional flexibility; shifting to the periphery, numerical flexibility becomes *more important*".

Table 6.7: Some indicators of numerical labour flexibility in the Dutch hospitality industry by PCS labour market segment, September 2001

		Professional workers	**Craft workers**	**Secondary workers**
Small part-time job	*%*	14	18	87
Temporary employment	*%*	24	22	63
Contractual number of working hours per week	*hours*	33.9	30.4	11.2
Actual number of working hours per week	*hours*	37.5	33.2	13.3
Sometimes have to work more than 10 hours a day	*%*	67	46	34
Influence on the composition of the work schedule	*%*	75	66	78
N		51,900	111,000	142,600

Source   : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

---

[108] Recall to mind that the UWV data set refers to all employees being on the payroll of their organization. Therefore, temporary agency workers and, for example, the concept of outsourcing are no part of the following analysis. See table 6.10 for some findings regarding the use of external labour relations in the Dutch hospitality industry.

[109] These primary jobs are not centred in a particular business group, department or occupational group. For example, 28 per cent of all small jobs in the professional market relates to occupations in the kitchen, ranging from cook, chef to kitchen manager. Other departments on the professional ladder in which small jobs are present include service, management and the reception.

Remarks   : Small part-time job = flexible working hours or contractually for at most 11 hours per week.

: A permanent appointment is inclusive of temporary employment with the commitment of a permanent contract.

: The exact wording is as follows: *Do you sometimes have to work over 10 hours a day?* and *Do you have influence on the composition of the work schedule?*

From the difference between actual and contractual working hours per week it can be concluded that working overtime is present in all three segments of the labour market. The extent of working overtime is averagely observed to be largest in the professional market. Furthermore, two thirds of all professional employees indicate that they sometimes have to work more than 10 hours a day. For secondary workers this share has been halved. These observations are not in conformity with hypothesis 3. Quantitative flexibility is certainly not confined to the secondary labour market and conclusions seem to be dependent on the particular indicator(s) given consideration to.

Approximately three-quarters of all hospitality employees indicate having influence on the composition of the work schedule. Remarkably this staff involvement is found mostly in the secondary market. Therefore, the composition of the work schedule does not only seem to be a reflection of the extent of quantitative flexibility pursued by employers, but in part also a reflection of workers aiming at harmony between working hours and private matters.

Considering the distribution of primary and secondary employees (see table 3.8), SLM expectations are that numerical labour flexibility is particularly applying to workers in the cafe sector and the fast food sector. Hotel employees are likely to be last on the 'numerical list'.

Relative to the other business groups, small part-time jobs are mostly found in the cafe sector and least in the hotel business (see table 6.8). Approximately two thirds of all employees in the cafe sector has flexible working hours or a contract for at most 11 hours per week. In the hotel sector this amounts to 30 per cent; cafeterias and restaurants take up a middle position. The share of large part-time jobs is divided more evenly among the business groups. Consequently, almost half of all hotel employees has a full-time job, while in the cafe sector this amounts to 17 per cent. These particular findings are in accordance with the SLM predictions.

Quantitative flexibility in the form of overtime is observed in all business groups and most job sizes. Compared to the contractual number of working hours the actual effort is particularly larger in small part-time jobs (in this case exclusive of flexible hours) and full-time jobs. For example, except for the fast food sector working overtime by full-time employees amounts to averagely over half a working day per week. Related to this, full-time workers, relative to their large part-time colleagues, more frequently indicate that they sometimes have to work over 10 hours a day. Comparing the different business groups, irrespective of job size, reveals that the extent of overtime is largest in restaurants and hotels: in both business groups averaging half a working day per week. In cafes and

Labour market segmentation and labour flexibility

Labour market segmentation and labour flexibility

Labour market segmentation and labour flexibility

cafeterias this amounts to 3 and 2 hours of extra work per week respectively. These flexibility findings are not in harmony with the SLM expectations.

Table 6.8: Some indicators of numerical flexibility in the Dutch hospitality industry by business group, September 2001

		Cafe sector	Fast food sector	Restaurant sector	Hotel Sector
Small part-time job	%	**66**	**55**	**48**	**30**
• Contractual number of working hours per week	hours	6.4	6.9	5.8	5.2
• Actual number of working hours per week	hours	9.3	10.1	11.0	12.5
• Sometimes have to work more than 10 hours a day	%	43	15	36	34
• Influence on the composition of the work schedule	%	79	76	79	74
• Female	%	56	67	57	71
• Under 23 years	%	47	82	74	80
Large part-time job	%	**17**	**24**	**21**	**23**
• Contractual number of working hours per week	hours	25.0	21.2	24.0	24.7
• Actual number of working hours per week	hours	27.5	22.6	27.2	25.8
• Sometimes have to work more than 10 hours a day	%	62	24	44	27
• Influence on the composition of the work schedule	%	75	67	69	80
• Female	%	52	61	53	73
• Under 23 years	%	20	54	36	15
Full-time job	%	**17**	**22**	**31**	**47**
• Contractual number of working hours per week	hours	40.6	39.7	38.6	38.3
• Actual number of working hours per week	hours	44.9	39.6	43.4	42.9
• Sometimes have to work more than 10 hours a day	%	83	43	73	59
• Influence on the composition of the work schedule	%	73	61	73	67
• Female	%	23	34	24	43
• Under 23 years	%	11	29	16	13
Total		**100**	**100**	**100**	**100**

It is further observed that full-time jobs in the Dutch hospitality industry are particularly occupied by men and small part-time jobs by women and youngsters under 23 years. This relationship between job size and personal characteristics is in accordance with SLM theory. The observation that part-time hospitality jobs are well represented by women partly relates to typical ´female professions´ mostly practised in part-time. However, statistical discrimination on the part of the employer may also partly explain the relative underrepresentation of female workers in full-time jobs. In this respect it is argued that ´being a woman´ is particularly associated with less favourable attributes such as being less productive, having a higher risk of turnover and having less educational willingness. When recruiting new staff this average picture is then projected onto individual female applicants (see also chapter 3). However, some indicators in the Hospitality Employees Study seem to suggest that a large part of the female staff has chosen consciously for part-time work. For example, 83 per cent of all female part-time employees indicates that they never want to work at other times. Furthermore, 86 per cent of all female part-time workers acknowledge overall job satisfaction. This contentment can in part be explained by the possibility to combine paid work with private duties.

Table 6.9: Short- and long-term numerical flexibility in the Dutch hospitality industry by business group, September 2001

	Short-term flexibility	Long-term flexibility	Cafe sector	Fast food sector	Restaurant sector	Hotel sector
			%	%	%	%
Temporary appointment			**48**	**40**	**45**	**31**
and small part-time job	++	+	41	28	32	18
and large part-time job	+	+	4	6	8	4
and full-time job		+	3	6	6	8
Permanent appointment			**52**	**60**	**55**	**69**
and small part-time job	++		25	27	16	11
and large part-time job	+		13	18	14	19
and full-time job			13	16	25	39
Total			**100**	**100**	**100**	**100**

In addition to the mean hours of work per week also the ratio between permanent and temporary staff contributes to the quantitative flexibility of an organization. As noted, temporary appointments can be regarded as a measure of employment flexibility. Flexible working hours refer to short-term flexibility, while the type of contract of employment points to the long(er)-term flexibility. Table 6.9 shows that the share of temporary appointments is observed to be the highest in the cafe sector (48 per cent) and lowest in the hotel business (31 per cent). These findings are in accordance with SLM theory.

Of course, in the short *and* long run numerical labour flexibility is highest for small part-time workers having a temporary contract of employment. This combination applies most to cafe workers (41 per cent) and least to hotel employees (18 per cent). For full-time employees having a permanent appointment quantitative flexibility, in the short and long run, is restricted the most. Conforming to SLM expectations this combination of job characteristics applies most to hotel employees (39 per cent). The restaurant sector follows at a distance (25 per cent), while the cafe sector is last on this list (13 per cent).

In addition to internal labour relations also external working relations such as outsourcing and the use of temporary agency workers may contribute greatly to the numerical (and possibly also functional) manoeuvrability of the organization. In September 2002, 17 per cent of all establishments in the Dutch hospitality industry having employees on their payroll, occasionally or permanently, also contracts outs (parts of) the kitchen work (see Dutch Board for the Hospitality and Catering Industry (2003a, p. 26)). In the hotel sector this particular form of outsourcing is observed to be smallest (see table 6.10). Supported by the organizational structure, hotels also more frequently than the other business groups have their own staff for bookkeeping and security. However, this observation does not apply to house cleaning.

Table 6.10: Outsourcing in the Dutch hospitality industry by business group, September 2002

	Cafe sector	Fast food sector	Restaurant sector	Hotel sector
	%	*%*	*%*	*%*
Temporary agency workers	7	5	5	26
Cleaning	33	26	26	40
Security	38	33	36	24
Bookkeeping	67	71	68	50
Kitchen work	17	18	17	14

Source   : "Landelijke Trend Enquête Werkgelegenheidsstructuur Bedrijfstak Horeca" (Dutch Board for the Hospitality and Catering Industry (2003a)).

Remark   : The percentages are based on all hospitality establishments with employees on the payroll.

The ability to control the size of the work force is also encouraged by employing temporary agency workers. In the last three months, referencing here July, August and September

2002, approximately 7 per cent of all hospitality establishments with employees on their payroll also employed agency workers (see Dutch Board for the Hospitality and Catering Industry (2003a, p. 28)). Employing workers from an employment agency relates positively with firm size and consequently is most frequently observed in the hotel sector (26 per cent).

Table 6.11: Some indicators of numerical labour flexibility in the Netherlands by branch of industry, 2001

Sector	SIC code	Irregular shift	Shift work	Overtime	Part-time job	<12 work-ing hours per week	Flexible job
		%	*%*	*%*	*%*	*%*	*%*
Industry	15-37	1.4	12.6	16	15.6	2.6	1.8
Construction industry	45	1.3	1.1	10.7	8.5	2.2	1.8
Wholesale	51	1.8	1.2	10.8	17.9	4.7	3.7
Retail trade	52	10.4	0.7	7.5	47.5	26.9	20.6
Hospitality industry	55	27.5	1.3	2.7	43.7	33.2	24.1
Banking, finance and insurance	65-67	2.0	0.3	4.6	28.2	3.1	1.2
Other commercial services	70-74	7.3	4.2	5.4	26.3	13.8	23.9
Education	80	1.0	0.0	0.5	51.6	9.5	1.2
Medical and welfare services	85	36.2	0.3	2.9	69.5	12.8	6.3
All enterprises		**10.7**	**3.2**	**8.5**	**33.7**	**10.8**	**9.1**

Source : Employment and Wages Survey ("Enquête Werkgelegenheid en Lonen", Statistics Netherlands).

Remarks : Irregular shift: labour not taking place at regular times and not constituting shift work; shift work: work in a system, in which the working hours of two or more groups of workers link up with each other or overlap to a small extent; overtime: hours worked on top of the prevailing hours of employment and fully paid; a part-time job is occupied by a worker not having a full day's or week's work, but has, nonetheless, fixed working hours per week (exclusive of temporary agency workers, stand-by employees and the like); flexible workers: temporary agency workers, stand-by employees and the like.

: The branches of industry are defined in conformity with the Standard Industrial Classification 1993 (SIC, "Standaard Bedrijfsindeling 1993 (SBI)") of Statistics Netherlands. Therefore, the empirical findings regarding the Dutch hospitality industry (SIC 55) are not comparable to that of the Hospitality Employees Study. Also disparities in definitions make a consistent comparison difficult.

As with content flexibility we end off this section with a comparison between different branches of industry in the Netherlands, in this case investigating some indicators of numerical labour flexibility (see table 6.11). Compared to other branches of industry it is observed that in the Dutch hospitality industry many (small) part-time and flexible jobs are present. Also working irregular hours is of frequent occurrence. This flexibility profile also applies to retail and, medical and welfare services. The latter industry is leader regarding the

share of part-time jobs (70 per cent in 2001) and jobs with flexible working hours (36 per cent), while for the hospitality industry this lead holds for the share of flexible jobs (24 per cent) and small part-time jobs (33 per cent). In accordance with the nature of work, shift work and working overtime are particularly characteristic of the industry sector. Other branches of industry in which working overtime is comparatively of frequent occurrence are the construction industry and wholesale. Scoring less than 3 per cent, in the hospitality industry working overtime is lagging behind most of the other branches of industry. The findings of the Hospitality Employees Study, however, point to over 30 per cent of all jobs in which working overtime is present. This discrepancy is partly explained by differences in definitions. Furthermore, the findings of Statistics Netherlands refer to overtime being fully paid, while in the Hospitality Employees Study this is not a necessary condition. Actually, in the hospitality industry it is common practice to compensate for overtime first of all in the form of leisure.

6.5. Other measures of flexibility and overall impression

In addition to functional and numerical labour flexibility in the literature also other manifestations of flexibility or manoeuvrability are distinguished, including pay flexibility and flexibility of the organization (see, for example, Atkinson (1984, 1988), Lagos (1994) and Den Boer and Hövels (2002)).

Pay (wage, financial) flexibility points to the degree to which the monetary fortunes of work adjust themselves to various internal and external economic conditions (see, for example, Boyer (1987, pp. 110-111)). Examples include pay flexibility because of developments in workers' wealth in human capital and dynamics in market demand. According to some economists the downward rigidity of wages constitutes an important cause of job destruction in the presence of persistent 'economic opposition' (Lagos (1994, p. 85)). Within the scope of the Hospitality Industry CAO ("Horeca CAO", collective labour agreement, Landelijke Bedrijfscommissie voor het Horecabedrijf (2000)) pay flexibility is not feasible. All hospitality employees should be paid in line with the scale salary of the appropriate job group (see section 5.2.4) and the number of years of service[110]. Only with respect to a limited number of issues in the collective agreement a corporate arrangement can be concluded[111].

---

[110] After every year being employed in the same position in the organization the employee is entitled to a pay increase based on years of service until the maximum number of years of service in the appropriate job group. Not awarding a years-of-service pay increase is authorised only if it can be proved that the employee concerned performed his tasks badly or conducted himself improperly. Furthermore, withholding a pay increase is only possible once over the total number of years of service.

[111] In this respect both sides, employer and employee, are entitled to submit proposals. Corporate arrangements can be made with respect to, for instance, the following issues: (1) overtime fully paid instead of compensated for in the form of leisure, (2) departing from the normal working hours, (3) young employees (16-17 years) working on Sunday and (4) the application of the broader consultation arrangement of the Working Hours Decree with

194

Labour market segmentation and labour flexibility

In the hospitality industry barriers to adjust labour costs (downwardly) to business needs, including the presence of a collective agreement, statutory minimum wages and wage indexation, to some employers can be an incentive to replace labour with capital. However, compared to other branches of industry laboursaving technology in the hospitality industry is likely to be of less frequent occurrence. High labour intensity is typical of all business groups in the Dutch hospitality industry. Moreover, in the literature ambiguity exists as to pay flexibility always being a solution to job destruction (see, for example, Boyer (1987) and Brodsky (1994)). Furthermore, increasing bounds of possibility towards financial flexibility do not imply that wages will always be adjusted downwardly if preached by economic circumstances. For the purpose of holding on to certain valued employees some employers may be inclined to offer private pay arrangements (see also section 3.6.1). This tendency can also be fostered from the thought that by offering higher wages employees will not lie down on the job. By doing so, labour productivity is stimulated and monitoring costs reduced (Oi (1990)).

Organizational flexibility, above all, refers to the degree to which is departed from the classical labour organization, marked by, among other things, a strong hierarchical structure, standardized work and precisely defined functions (see, for example, Hofman, Steijn and Van der Laan (1997) and Den Boer and Hövels (2002)). We expect that organizational rigidity is not characteristic of the Dutch hospitality industry. In this branch of industry in which creativity, entertainment and customer-oriented sevice are often of paramount importance, scope for precisely defined tasks is likely to be confined. Considering the dominating smallness in the hospitality industry, the number of hierarchical layers in an organization will generally be restricted. Exceptions include large-scaled (chains of) hotels and fastfood restaurants.

To conclude this chapter, we mix together the different ingredients regarding numerical and functional labour flexibility as well as organizational flexibility to get an overall impression of (labour) flexibility in the different business groups and the corresponding labour market segments. For this purpose relevant flexibility indicators from the UWV data set are identified (see table 6.12, below). For every respondent worker the sum of the individual scores per flexibility category is computed and thereupon to obtain a statement at the business group level these individual sumscores are averaged. This simple approach offers opportunity to examine the empirical plausibility of the SLM representation of the flexible firm in the sense of Atkinson (1984, 1988), particularly regarding internal labour relations[112].

To identify measures of organizational flexibility we searched for UWV variables referring to, among other things, the experienced job monotony and freedom in work. Contrary to expectations, the hotel sector, compared to the other business groups, is observed to have the highest score on organizational flexibility. Conforming to SLM expectations this lead also

---

reference to night work. However, in the pursuit of a corporate arrangement the minimum nature of the collective agreement should always be respected.

[112] As noted, external labour relations are not analysed in the Hospitality Employees Study.

applies to functional labour flexibility. The degree of numerical labour flexibility is estimated from the answers to survey questions referring to, among other things, the contract of employment, job size and working overtime. The expected 'numerical rank' is not observed.

Table 6.12: Functional, numerical and organizational (labour) flexibility in the Dutch hospitality industry by business group and PCS labour market segment, September 2001

	Cafe sector	Fast food sector	Restaurant sector	Hotel sector
Professional workers				
Functional flexibility	2.2	1.3	1.8	2.1
Numerical flexibility	1.1	1.1	2.0	1.9
Organizational flexibility	8.5	7.2	8.8	8.2
Craft workers				
Functional flexibility	1.6	1.3	1.4	1.8
Numerical flexibility	1.6	1.2	1.4	1.2
Organizational flexibility	7.9	7.2	7.3	8.2
Secondary workers				
Functional flexibility	0.9	1.0	0.9	0.9
Numerical flexibility	2.0	1.4	2.0	1.9
Organizational flexibility	7.4	6.5	6.8	7.3
Entire business group				
Functional flexibility	1.2	1.1	1.3	1.6
Numerical flexibility	1.8	1.3	1.8	1.6
Organizational flexibility	7.6	6.8	7.4	7.9

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : Survey questions to measure the extent of functional labour flexibility: (1) *How long are you holding the present position?* combined with *How long are you employed with the present employer?* (internal mobility), (2) *Do you expect to get promotion in the next two years?*, (3) *Is management currently doing enough with respect to your career prospects?*, (4) *Do you have completed or are you currently attending one or more vocational training courses?*, (5) *Do you have completed or are you currently attending a management course?* and (6) *Do you have completed or are you currently attending internal training?* (firm specific).

: Numerical flexibility: (1) Do you have a temporary contract of employment?, (2) Do you have flexible working hours?, (3) Are the actual working hours generally exceeding the contractual working hours per week (overtime)?, (4) *Do you sometimes have to work over 10 hours a day?* and (5) Is travelling time from home to work generally exceeding a half hour?

> : Organizational flexibility: (1) *Do you experience sufficient variation in your work?*, (2) *Does your work show variety?* (3) *Does your job require to learn new things?*, (4) *Does your job require creative talent?*, (5) *Can you decide when to pause in your work?*, (6) *Can you control the pace of work?*, (7) *Can you decide when performing a task?*, (8) *Can you determine the order of duties to be performed?*, (9) *Do you have influence on the composition of the work schedule?*, (10) *If necessary, do you have the opportunity to change hours with colleagues?* and (11) *Does management show sufficient consideration for your opinion?*

All in all, in the Dutch hospitality industry the empirical plausibility of the SLM representation of the flexible firm is to a great extent not rejected. This conclusion holds for all business groups. Functional labour flexibility particularly applies to primary employees (in line with hypothesis 1) and numerical flexibility to workers in the secondary segment (in line with hypothesis 3). Nevertheless, the different manifestations of labour flexibility are generally found right across the width of an organization: it's a matter of emphasis. This emphasis, however, is not always consistent with the SLM predictions. Conclusions are very much dependent on the particular flexibility measure being discussed.

6.6. Summary, conclusions and discussion

On the international level the macro productivity level in the Netherlands can be considered as high. Nonetheless, the growth of labour productivity lags behind other OECD countries. For the tenability of the economic growth potential in the Netherlands recent studies point to the necessity to bring up the growth of productivity (SER (2002)). In the nineties of the previous century economic growth in the Netherlands was, above all, supported by the increasing level of labour market participation. Because of labour market conditions and demographic developments this is not likely to be the case in the near future. In the hospitality industry also the increasing awareness exists that production (value added) needs to be more innovation driven (EIM (2003)). In this context, innovation and labour flexibility can be regarded as two important instruments for employers to stimulate the productivity level of their work force.

In our search for pointers to the existence of labour market segmentation in the Dutch hospitality industry (see chapter 1), in this chapter we explore manifestations of labour flexibility for different worker groups in order to investigate the empirical plausibility of the SLM representation of the flexible firm (see Atkinson (1984, 1988))[113]. For the identification of labour market segments (worker groups) in the hospitality industry we use the PCS classification method, i.e. a tripartition of the total labour market into a professional, craft and secondary segment (see chapter 3). The starting-point for the present investigation is formed by a representative data set of hospitality employees sampled from the administration of insured workers of the Implementing Body of Social Insurances, pointing to the employment situation in September 2001 (see chapter 3). Some findings can be summarized as follows.

---

[113] See Dialogic (2005) for a detailed study of innovation in the Dutch hospitality industry.

Functional labour flexibility – Additional training can be considered as a means (input measure) to attain multi-skilled workers and "stability of employee productivity gains as the product and processes change" (Boyer (1987, p. 112)). Output measures related to functional labour flexibility such as polyvalent workers employed in a rotation system are not available in the present data set. Consistent with the SLM predictions, primary employees in the Dutch hospitality industry have completed additional training more frequently than their secondary colleagues (supporting hypothesis 1). In September 2001, 74 per cent of all professional employees has completed additional training tuned to the hospitality practice. For lower tier primary employees this score is 58 per cent and for secondary employees 25 per cent. This order applies to all specific forms of completed additional training being distinguished in the Hospitality Employees Study (see table 6.1). Secondary labour in the hospitality industry is traditionally associated with "extra helping hands", that is work for which typically neither an initial professional education nor industry experience is required. For secondary jobs with *Jedermanns Qualifikation* content flexibility is mostly not required. In line with these findings, hotel employees have completed additional training more frequently than fellow-workers in the other business groups (see table 6.2). For example, 17 per cent of all hotel employees has completed one or more management courses. In the other business groups this is 5 per cent or less. With regard to internal training similar findings are perceived.

Also in a multivariate setting empirical support for hypothesis 1 is perceived. Taking into account of various worker, job and firm characteristics, logit estimates show primary employees having a significant higher probability to have completed additional training than secondary staff (see table 6.3). Compared to secondary workers, for professional employees the odds on completed additional training rises by a factor of 3.5 and for craft employees by 1.8. Hypothesis 1 is not rejected. However, empirical support for hypothesis 2 is not perceived: notwithstanding the risk of free-riding, within the primary labour market professional employees have a significant higher training probability than workers on the lower tier primary labour ladder. Particularly, with completed vocational training being the predictand it is observed that within the primary labour market only professional employees have a significant higher training probability than secondary workers. This finding may suggest that post schooling with regard to vocational training is rather complementary than a substitute for the initial professional education.

Empirical investigations into the return of additional training regularly point to the existence of underinvestment in manpower training (OSA (1995)). From both the comparison between different branches of industry in the Netherlands regarding formal additional training (see table 6.6) and the estimated wage equations in chapter 5 the impression holds that underinvestment in additional training is also conceivably present in the Dutch hospitality industry. This impression is strengthened noting that the observed training practices in table 6.6, based on the results of the Training Courses Study of Statistics Netherlands, are exclusive of small firms. Training costs and the expected return for the employer (increased productivity of the worker) and, for example, the expected trainability of the employee are considerations that may persuade the employer not to opt for a strategy of additional

training, but to recruit new staff from the external labour market. To some extent it can also be expected that in modern society, becoming more and more individually-oriented, some employers take the view that employability is essentially the responsability of employees (Den Boer and Hövels (2002)). Underinvestment in additional training may also be the result of the expected risk of free-riding, by which it is assumed that employers fear to run the risk of losing the paid investments in the human capital stock of their staff in that additional training paves the way to external mobility. This situation is likely to hold notably for substantial general training (see chapter 8). Besides, formal training is not the sole means by which functional labour flexibility can be stimulated. In the small-scaled hospitality industry we also expect considerable schooling effects from informal means, by way of, for example, instruction of and copying the art from more experienced colleagues.

Numerical labour flexibility – In harmony with the SLM predictions, in the Dutch hospitality industry we observe small part-time jobs (including flexible working hours) and temporary appointments chiefly in the secondary labour market. In September 2001, 87 per cent of all secondary employees has a small part-time job, while 63 per cent is temporary employed. In the professional and craft market these percentages are significantly smaller (see table 6.7). Conforming to expectations, in the short and long run, numerical labour flexibility is highest in the cafe sector and lowest in the hotel sector, referencing here the observation that 41 per cent of all cafe employees has a small part-time job, at the same time being temporary employed. Hotels are last on this list: 18 per cent (see table 6.9). Furthermore, 39 per cent of all hotel employees has a full-time job combined with a permanent contract of employment. The restaurant sector follows at a distance (25 per cent), while the cafe sector is last on this particular list (13 per cent).

Not all manifestations of numerical labour flexibility, however, are consistent with the SLM expectations. For example, the extent of working overtime is largest in the more primary-oriented restaurant and hotel sector: in both business groups averaging half a working day per week. As another example, regarding the use of external labour relations the hotel sector contracts out house cleaning and uses temporary agency workers more frequently than the other business groups (see table 6.10).

Compared to other branches of industry in the Netherlands, the hospitality industry is well represented by small part-time jobs, flexible working hours and temporary agency workers (see table 6.11). Combined with the observed training practices in the different branches of industry, it is difficult not to escape the impression that 'strategic lines' in the hospitality industry are stated particularly to cope with turbulence in the short run and not to make the business undertaking increasingly market proof (in the longer run). Strategic planning is expected not to be a major issue to many (small-sized) hospitality employers (see also Van der Hoeven and Verhoeven (1994)). According to Go, Monachello and Baum (1996, p. 5): "…the numerous small, family-owned and –operated businesses rely largely on "management by intuition." In this setting, managers typically learn the business from the ground up, "feeling" their way through the maze of business decisions they face. These managers often are unaware of the potential benefits of formal training, perceiving it to be an expensive luxury. As a result, inadequate training becomes a factor hindering even the

best efforts of these small organizations to provide high-quality, value-added service." Planning is likely to be positively related to firm size, the educational level of the employer and, for example, being a member of some hospitality group (chain). However, also in medium-sized hotels (20-49 employees) in the Netherlands business decisions are observed to be frequently ad hoc in nature (Kroft (2003)). Manpower strategy based upon rational considerations is not likely to be characteristic of the small-scaled Dutch hospitality industry, rather "*reflex management* responding to cost pressures to get the business through a crisis or to secure a transition" (Hunter, McGregor, MacInnes and Sproull (1993, p. 398)). Nevertheless, the (unplanned) outcome of manpower practices in the Dutch hospitality industry can be described much along SLM lines and as such the flexibility findings contribute to the empirical plausibility of a segmented labour market.

Overall impression – In the Dutch hospitality industry manifestations of numerical and functional labour flexibility are averagely observed right across the width of organizations. Balancing the evidence in this chapter the empirical plausibility of the core-periphery representation of the flexible firm is to a large extent not rejected. This conclusion holds for all business groups (see table 6.12). Worded differently, in the Dutch hospitality industry we observe different manpower practices for different groups of workers, to a large extent being in harmony with the SLM expectations. At the same time, however, conclusions are very much dependent on the particular flexibility indicator being under consideration (see also Smulders and Klein Hesselink (1997, p. 890)).

To conclude – this chapter we present some final comments. Labour flexibility points to the ability of employers to adjust the quantitative and qualitative effort of workers adequately to business needs. Because of the emphatic smallness in the Dutch hospitality industry many employers do not maintain internal labour relations at all and consequently flexibility of labour, numerically and functionally, is limited to the potential use of external workers. In this respect, the cafe sector is observed to have the largest share of establishments without employees on the payroll, while the restaurant sector is last on this list (Dutch Board for the Hospitality and Catering Industry (2001))[114].

The following chapters – Employers looking pointedly at numerical labour flexibility in order to render the business undertaking increasingly efficient can work out badly in the long run (see also Dunnewijk and Lammertsma (1999)). Cost savings by means of increased numerical flexibility of the work force may be outweighed by a loss in the workers' efficacy in the long run. If employees, to a considerable degree, do not support the employer's pursuit of flexibility, lack of commitment and various withdrawal decisions may endanger the continuation of the business undertaking. Job discontentment may, among other things, lead to quits of highly valued employees (dysfunctional turnover) or forms of destructive behaviour such as absenteeism, increased errors and malicious gossip (see, for example,

---

[114] In September 2000, for example, these ''zero employees establishments" percentages equal 38, 29, 18 and 28 for the cafe sector, the fast food sector, the restaurant sector and the hotel sector respectively (see Dutch Board for the Hospitality and Catering Industry (2001, p. 32)).

Farrell (1983), Rosse and Miller (1984) and Rosse and Noel (1996)). For the purpose of a sustained business undertaking Human Resources Management always requires a sound balance between quantity and quality of means. Chapter 8 presents a detailed analysis of job satisfaction, job search and labour mobility in the Dutch hospitality industry.

The next chapter explores the dynamics of numerical labour flexibility in the Dutch hospitality industry in the period 1993-2000. To this end we estimate various specifications of a linear labour-sales model based on Nooteboom (1980, 1982) using firm level data from a panel of employers participating in the Hospitality Analysis System (HAS) of the Dutch Board for the Hospitality and Catering Industry. Also in chapter 8, when discussing market conditions as a predictor of labour mobility, these dynamics are considered, but then using three consecutive cross-sections of the Hospitality Employees Study pointing to the employment situation in September 1999, 2001 and 2003.

CHAPTER 7

The linear labour-sales model in a dynamic panel data framework

An investigation into the Dutch hospitality industry

7.1. Introduction

Approximately 30 per cent of the total turnover in the Dutch hospitality industry (exclusive of VAT) consists of personnel costs (Dutch Board for the Hospitality and Catering Industry (2006)). Capital is proportionately a much smaller cost item. Given the labour-intensive character of the service provided in the hospitality industry it is important for employers to monitor labour productivity to help secure a long-term business. An instrument for enabling researchers to study the differences in labour productivity between firms is the linear labour-sales model as developed by Nooteboom (1980, 1982). Empirical studies using the labour-sales relationship are found in various service sectors, including the hospitality industry (Van der Hoeven and Thurik (1984) and Klomp (1996))[115]. The present investigation into the Dutch hospitality industry is, to our knowledge, filling a gap in the literature in the sense that a time-series of cross-sections at the firm level is used, thereby entering the domain of panel data econometrics. In particular, we use firm level data over the period 1993-2000 from a panel of hospitality employers participating in the "Hospitality Analysis System (HAS)" of the Dutch Board for the Hospitality and Catering Industry. In addition, to study the time variation in the extent of numerical labour flexibility (see chapter 6) we introduce dynamics in the labour-sales model.

This chapter is structured as follows. In section 7.2 we amplify on the linear labour-sales model in a dynamic panel data framework. A brief discussion of some prominent features of the HAS database follows in section 7.3. In section 7.4 we explore the one-way error component regression model that is often applied in empirical panel data studies to take into consideration the heterogeneity of hospitality firms. The consequences of dynamics are discussed in section 7.5. With this knowledge, following Arellano and Bond (1991), the basic error component regression model is reformulated to meet consistency in the parameter estimates. To extent the one-way error component regression model some alternative test specifications are discussed in section 7.6, including a random coefficient

---

[115] In Van der Hoeven and Thurik (1984) the variation in labour productivity is analysed for two samples of individual hotels using cross-section data. One sample refers to individual data with respect to 132 hotels in Germany in 1979, the other data set consists of 202 hotels in the Netherlands in 1977. The empirical analysis in Klomp (1996) extends that of Van der Hoeven and Thurik (1984) by estimating separate labour-cost relationships for four business groups in the Dutch hospitality sector using 1987 firm level HAS data (concerning 168 restaurants, 108 cafeterias, 21 cafes and 84 hotels).

model and a nonlinear regression model. Empirically the focus is on the latter approach. That is, we revisit and estimate an extended version of the nonlinear labour-sales model for the hospitality industry as studied in Klomp (1996). Finally, section 7.7 ends this chapter with a summary, conclusions and discussion.

7.2. The linear labour-sales model in a dynamic panel data framework

The labour-sales relationship developed in Nooteboom (1980, 1982) originates from queuing theory[116] and describes the relation between the volume of labour and the value of sales in a firm. In a cross-section framework this relationship can be represented as follows:

$$L_i = \alpha_i + \beta_i Q_i \qquad\qquad i=1,...,N \qquad\qquad\qquad (7.1)$$

with L_i the annual volume of labour in firm i, Q_i the annual level of sales in firm i and N the number of firms[117]. Empirically the labour-sales model is applied to study the variation in the firm level labour intensity or equivalently to analyse differences in the firm level labour productivity. The labour-sales relationship is especially developed for the retail sector (Nooteboom (1980, 1982) and Thurik (1984)), but empirical investigations are also found in other service industries such as wholesaling (Van Dalen, Koerts and Thurik (1990)) and in the hospitality industry (Van der Hoeven and Thurik (1984) and Klomp (1996)).

Contrary to classical linear regression the parameters of the labour-sales model are not constant, but assumed to be dependent on the particulars of the establishment. The intercept α_i is known as the *threshold of labour* and can be interpreted as the minimum labour needed to operate a firm, regardless of sales. The height of this threshold is assumed to be equal to the annual opening hours, corresponding to the minimum of one attendant being present during opening hours, multiplied by the number of departments operating more or less independently. Therefore, we expect the labour threshold to be positively correlated with firm size. When scale is approximated by the number of employees on the payroll, then, on average, the labour threshold is likely to be lower in the cafe sector and the fast food sector and higher in the restaurant sector and the hotel business. This expectation also follows from other size indicators, including the amount of sales and the sales surface area (see table 7.1). A significant threshold indicates that scale economies can be obtained with respect to labour productivity. That is, labour intensity as measured by the annual volume of labour per unit of annual sales (L_i/Q_i) decreases with increasing scale.

---

[116] See also Frenk, Thurik and Bout (1991).

[117] In this chapter a firm represents a single establishment.

The linear labour-sales model in a dynamic panel data framework

The slope coefficient β_i represents the *scale adjusted labour intensity (sli)*[118] in an establishment and is also expected to be influenced by firm characteristics such as the product quality, the type of services offered (assortment mix) and the quality of labour. The product quality or service level is, for instance, reflected by the degree of intangibility of services. Intangibility is a prominent feature of hospitality services, the extent of which is indicated by, for instance, the intensity of personal attention, the atmosphere, the view, image and reputation. As the degree of intangibility of hospitality services increases it is likely to correspond with an upgrading of services and thereby having an increasing impact on labour intensity. Examples of indicators of the product quality or the luxury level are the number of stars for hotels in accordance with the "Benelux Hotel Classification (BHC)"[119], the number of Michelin stars for restaurants, the operation of business within the framework of some established hospitality concept and the selling price of the services offered. Labour intensity is also likely to differ between the various sales components, expecting labour productivity to be, on average, higher for the main activities in a firm. Furthermore, we expect labour quality to have a positive effect on labour productivity. That is, to attain a certain level of sales less labour is required when employees have higher productive skills. Following neoclassical theory the wage rate is used to indicate the quality of the human capital stock of workers (see chapter 5). A higher wage rate is also likely to have an increasing stimulus to ensure the workforce being employed efficiently (Oi (1990)).

In the present chapter the labour-cost relationship is estimated using a time-series of cross-sections. We use firm level data over the years 1993-2000 from the Hospitality Analysis System ("Horeca Analyse Systeem (HAS)") of the Dutch Board for the Hospitality and Catering Industry (see section 7.3). The panel data framework also allows us to study the dynamics of labour demand in the Dutch hospitality industry (see, for example, Arellano and Bond (1991), Mátyás and Sevestre (1996) and Baltagi (2002)). An autoregressive labour-cost relationship is assumed to originate from the partial adjustment (PA) model. That is, in a single hospitality establishment the actual level of sales determines the *desired* level of labour volume (see, for example, Seddighi, Lawler and Katos (2000)). Omitting the subscript *i*:

$$L_t^* = \alpha + \beta Q_t \qquad\qquad t = 1, ..., T \qquad\qquad (7.2)$$

with L_t^* the desired volume of labour (in establishment *i*) in year *t* (*i* =1,…,N; t=1,…,T) and Q_t the actual level of sales (in establishment *i*) in year *t* (*i* =1,…,N; t=1,…,T). Because the desired labour volume is not observable for estimation, it is usually assumed that in any

---

[118] This term is explained by rewriting equation (7.1) as $L_i/Q_i = \alpha_i/Q_i + \beta_i$. That is, labour intensity can be written as the sum of a scale dependent component and a scale independent part.

[119] In July 2003 a modernized and more flexible classification system is introduced known as the "Netherlands Hotel Classification (NHC)". For details see Dutch Board for the Hospitality and Catering Industry (2003c).

period t, the actual adjustment of labour volume corresponds to a fraction γ $(0<\gamma \leq 1)$ of its desired change:

$$L_t - L_{t-1} = \gamma(L_t^* - L_{t-1}) + \varepsilon_t \qquad\qquad t = 2,\ldots,T \qquad\qquad (7.3)$$

and ε_t being a disturbance term satisfying all the classical assumptions. The adjustment coefficient γ can be seen as measuring the extent of numerical labour flexibility (see chapter 6). As γ increases the greater the adjustment of the actual to the desired level of the labour volume in a hospitality establishment in year t. Optimal flexibility is attained when the parameter γ equals one. In this extreme case, apart from white noise, the actual level of the labour volume equals its desired level, i.e. all the desired adjustment is attained in year t. Combining equation (7.2) and equation (7.3) we get:

$$L_t = \alpha\gamma + \beta\gamma Q_t + (1-\gamma)L_{t-1} + \varepsilon_t \qquad\qquad t = 2,\ldots,T \qquad\qquad (7.4)$$

If the disturbance term is zero mean white noise, then the stochastic predictor L_{t-1} is not correlated with ε_t and thus, for large samples, OLS can be applied. However, if the error term follows, for instance, an AR(1) process the IV methodology or some GLS procedure is more appropriate. After estimation, estimated values of the initial parameters in equation (7.4) can be obtained in a straightforward manner. In the following sections equation (7.4) is used as a basis to estimate some alternative test specifications taking into account the time-series cross-sectional nature of the HAS data set. Before this we present a brief description of the particulars of this database.

7.3. Some features of the HAS data set

For employers in the Dutch hospitality industry it is possible to participate in the Hospitality Analysis System ("Horeca Analyse Systeem (HAS)"). This system is developed and owned by the Dutch Board for the Hospitality and Catering Industry and provides for participants detailed analyses of the firm's turnover and cost structure to be compared with the mean performance of comparable HAS employers. A clear understanding of deviations from this mean performance may help to improve the business undertaking. HAS participation is free and on voluntary basis.

Compared to the entire hospitality industry the scale of HAS firms is above average (see table 7.1). This feature of HAS firms is to be kept in mind when interpreting the estimation results in the following sections[120]. In 2000 the mean annual sales per HAS employer amounts to approximately € 913,000,-, more than three times the mean turnover in the

---

[120] For example, the anticipated positive difference between the average labour threshold in HAS restaurants and HAS cafes is not likely to be as distinct as one would expect from the population figures. However, the empirical findings in the following sections show otherwise.

population. In line with this finding, the number of m^2 sales surface area per HAS firm more than doubles the amount in the entire hospitality industry. The relative largeness of HAS firms applies to all business groups. Compared to the other business groups this observation especially applies to the turnover in the cafe sector and can partly be explained by the HAS participation of some large discotheques and function centres. The emphatic presence of large organizations in the HAS may partly be explained by some employers' characteristics such as the educational level indicating entrepreneurial awareness and having the organizational structure to provide, with relative ease, the necessary data for HAS participation.

Table 7.1: Some descriptives of the Dutch hospitality industry: HAS versus population, 2000

	Sales per firm	Sales surface area per firm	Rooms per hotel	Beds per hotel	Number of firms
HAS	*€ 1,000,-*	*m^2*	#	#	#
Cafe sector	711	277			104
Fast food sector	297	71			83
Restaurant sector	732	217			155
Hotel sector	2,016	418	49	91	91
Total	**913**	**246**			**433**
Population					
Cafe sector	131	113			19,014
Fast food sector	209	57			10,042
Restaurant sector	364	125			9,628
Hotel sector	931	166	29	60	2,900
Total	**257**	**105**			**41,584**

Source   : The HAS and the registration database (September 2000) of the Dutch Board for the Hospitality and Catering Industry.
Remarks   : Sales = mean annual sales per establishment.
          : The sales surface area refers to the available room for eating and drinking and thereby is exclusive of hotel rooms, the kitchen and the area behind the bar or counter. Also pavements are not included.

From the various size indicators in table 7.2 it appears that over the years 1994-2000[121] the average scale of HAS cafeterias is smallest and that of HAS hotels largest. The mean sales surface area in a HAS hotel amounts to 418 m^2 in 2000[122] (cafeteria: 71 m^2) and the labour volume comes to approximately 29 full-time employed (fte) persons (cafeteria: 5 fte) turning over more than 2 million Euros (cafeteria: almost € 300,000,-). For HAS hotels both lodging and the provision of meals represent a more or less equally large proportion in the total

---

[121] Of course, formally one should speak of observations in the years 1994, 1996, 1998 and 2000.

[122] As noted, exclusive of the average number of 49 hotel rooms (see table 7.1).

turnover. For the other business groups it is the main activity that clearly contributes most to sales.

Table 7.2: Some features of HAS firms per business group, 1994-2000

		1994	1996	1998	2000
Cafe sector					
N		86	97	114	104
Labour	*fte*	7.1	7.3	10.1	11.0
Sales	*€ 1,000*	426	451	576	711
Assortment mix:					
- Lodging	*%*	—	—	—	—
- Beverages	*%*	70.5	68.1	71.0	68.9
- Meals/fast food	*%*	18.4	21.2	20.4	21.3
- Remaining services	*%*	11.0	10.7	8.6	9.7
Sales surface area	*m²*	200	224	247	277
Fast food sector		**1994**	**1996**	**1998**	**2000**
N		93	88	90	83
Labour	*fte*	5.2	5.1	4.8	5.2
Sales	*€ 1,000*	274	256	245	297
Assortment mix:					
- Lodging	*%*	—	—	—	—
- Beverages	*%*	12.7	11.7	10.7	11.2
- Meals/fast food	*%*	77.6	79.8	81.4	83.8
- Remaining services	*%*	9.7	8.5	7.9	5.0
Sales surface area	*m²*	76	72	66	71
Restaurant sector		**1994**	**1996**	**1998**	**2000**
N		201	191	165	155
Labour	*fte*	10.7	10.9	12.9	12.3
Sales	*€ 1,000*	559	583	764	732
Assortment mix:					
- Lodging	*%*	—	—	—	—
- Beverages	*%*	30.1	29.6	29.5	29.2
- Meals/fast food	*%*	66.2	67.0	66.6	65.5
- Remaining services	*%*	3.6	3.3	3.9	4.4
Sales surface area	*m²*	180	166	169	217
Hotel sector		**1994**	**1996**	**1998**	**2000**
N		116	106	92	91
Labour	*fte*	27.4	20.8	26.9	28.9
Sales	*€ 1,000*	1,764	1,354	1,649	2,016
Assortment mix:					
- Lodging	*%*	37.1	38.7	36.5	36.1

- Beverages	*%*	19.3	19.9	19.4	19.3
- Meals/fast food	*%*	37.4	36.3	38.3	37.7
- Remaining services	*%*	6.2	5.1	5.9	5.8
Sales surface area	m^2	354	236	309	418

Source   : The HAS database of the Dutch Board for the Hospitality and Catering Industry.

Remarks : Sales = mean annual sales per establishment.

Labour = mean annual labour volume measured as full time employed persons (fte), including for instance all employees on the payroll, the employer and family members, but exclusive of employees from an employment agency.

Remaining services = including the receipts from charges for entrance, the revenues of slot machines, sales of smokers' requisites and the letting of rooms.

N = number of HAS participants.

Furthermore, it is observed that in the period 1994-2000 HAS cafes are scaling-up, expressed by the upward trend in the amount of labour employed, the turnover and the sales surface area. On the one hand this direction can be explained by incumbents getting larger over time and, on the other, by the dynamics of the HAS database in which entrants, on average, are operating on a larger scale than employers dropping out. The variation in sales is also partly explained by macro economics, i.e. the business cycle. Contrary to the first part, the second half of the nineties of the previous century shows substantial economic growth in the Netherlands and the boom in the last years of this time period may partly explain why the sales level of many HAS firms is particularly large in 1998 and 2000.

In the period 1994-1998 for cafeterias a decreasing scale is observed, but this trend is seen to be completely 'restored' in the last observation year. Within this business group the proportion of meals and fast food sales is getting larger and (in particular) that of the remaining services smaller. For the other business groups the assortment fractions do not reveal a pronounced direction.

7.4. The one-way error component regression model

Certain talents and attitudes of the employer and, if present, the executive staff contribute to the way in which in hospitality firms labour is employed to counter various (expected) market situations. In this context one can think of entrepreneurial and management proficiency. In addition, certain attitudes towards, for example, part-time work, flexible working hours and the use of temporary agency workers are fostered by the prevailing corporate culture.

For taking these and other unobservable firm specific effects into consideration many empirical panel data studies make use of the one-way error component regression model (see, for example, Mátyás and Sevestre (1996) and Baltagi (2002)). The corresponding specification of the labour-sales model as described in section 7.2 is as follows:

$$L_{it} = \beta_1 + \beta_2 Q_{it} + \beta_3 L_{i,t-1} + u_{it} \qquad\qquad i=1,\dots,N;\ t = 2,\dots,T \qquad (7.5)$$

with $u_{it} = \mu_i + e_{it}$. The subscript i refers to a hospitality firm and the index t to the time dimension (a particular year in the HAS data set). The μ_i ($i=1,\dots,N$) are representative of all firm specific (and time invariant) effects not included explicitly in the panel data model. Fitted to these effects are, for example, the aforementioned not (directly) observable entrepreneurial and management skills and the corporate culture. The e_{it} can be considered to be the classical error term to a regression model and because of the panel data structure varying over both i and t. The parameters β_1, β_2 and β_3 represent the magnitude of the labour threshold, the extent of labour intensity and the degree of numerical labour flexibility respectively. Theory predicts $\beta_1 > 0$, $\beta_2 > 0$ and $0 \le \beta_3 < 1$ (see section 7.2).

Empirical studies of panel data often discriminate between two versions of the one-way error component model, namely the fixed effects (*FE*) model and the random effects (*RE*) model. Characteristic of the *FE* model is that the μ_i are considered to be fixed parameters and the e_{it} as stochastic with the classical assumptions, i.e. $IID(0,\sigma_e^2)$. Furthermore, the explanatory variables are assumed to be independent of the e_{it} for all i and t. In case of classical errors the presence of a stochastic regressor $L_{i,t-1}$ in equation (7.5) does not imply correlation with e_{it} [123]. However, this regressor reduces the total number of observations in the regression model to $N(T-1)$. In a *FE* setting the labour-sales model can be rewritten as:

$$L_{it} = \beta_{1i} + \beta_2 Q_{it} + \beta_3 L_{i,t-1} + e_{it} \qquad\qquad i=1,\dots,N;\ t = 2,\dots,T \qquad (7.6)$$

with N fixed parameters $\beta_{1i} = \beta_1 + \mu_i$. With a *FE* approach the total number of model parameters to be estimated thus amounts to $N+2$ (except for an estimation of σ_e^2). For every HAS firm the height of the labour threshold is estimated separately. Under the given assumptions the application of OLS to equation (7.6) ends in BLUE estimators. Apart from "*FE* estimators", these estimators are also known as LSDV estimators (Least Squares Dummy Variables, Seddighi, Lawler and Katos (2000, p. 111)). If N is relatively large in the estimation procedure numerical problems may arise [124]. Therefore, to compute the LSDV parameter estimates use is often made of the partitioned inverse of $X'X$ (see, for example, Judge et al. (1982, p. 212)). Writing out the corresponding formulae shows that the *FE* parameters β_2 and β_3 can be estimated using OLS to a transformed model, in which all variables are expressed in terms of deviations from the individual means, i.e.:

---

[123] However, $L_{i,t-1}$ depends on $e_{i,t-j}$ j≥1. For the time being this form of correlation is ignored (see section 7.5).

[124] Here, the matrix of explanatory variables $X = [I_N \otimes \iota_{T-1}, Q, L_{-1}]$ is of dimension $N(T-1)\text{x}(N+2)$. Furthermore, I_N is the identity matrix of dimension N, ι_{T-1} a vector of ones of dimension $T-1$, $Q = (Q_1', Q_2', \dots, Q_N')'$ with $Q_i = (Q_{i2}, Q_{i3}, \dots, Q_{iT})'$ ($i=1,\dots,N$) and L_{-1} analogously. So, under the classical assumptions the rank of $X'X$ equals $(N+2)$.

$$L_{it} - \overline{L}_i = \beta_2 (Q_{it} - \overline{Q}_i) + \beta_3 (L_{i,t-1} - \overline{L}_{i,-1}) + (e_{it} - \overline{e}_i) \qquad i=1,\ldots,N; \, t = 2,\ldots,T \qquad (7.7)$$

with $\overline{L}_i = (1/(T-1))\sum_2^T L_{it}$ the mean annual labour volume in hospitality firm i and the other variables defined analogously. This so-called *within transformation* applies the variation within establishments and eliminates all time invariant elements from equation (7.6), including the intercepts β_{1i} [125]. Then, after the estimation of β_2 and β_3 the labour threshold in hospitality firm i can be estimated using the firm specific means:

$$\widetilde{\beta}_{1i} = \overline{L}_i - \widetilde{\beta}_2 \overline{Q}_i - \widetilde{\beta}_3 \overline{L}_{i,-1} \qquad\qquad i=1,\ldots,N \qquad\qquad (7.8)$$

In a *RE* setting the firm specific effects μ_i are assumed to be stochastic, in particular identically and independently distributed $(0, \sigma_\mu^2)$. It is further supposed that the μ_i are independent of the classical e_{it} for all i and t. In the *RE* model the thresholds of labour β_{1i} are thus considered to be stochastic $IID(\beta_1, \sigma_\mu^2)$. Compared to the *FE* model the *RE* approach has more degrees of freedom. Instead of $N+2$ now 3 model parameters are to be estimated, namely β_1, β_2 and β_3 (except for estimates of σ_e^2 and σ_μ^2). However, in a *RE* setting the covariance matrix of the composite error term in equation (7.5) $u = \mu \otimes \iota_{T-1} + e$ is not classically:

$$\Phi = V(u) = I_N \otimes \left[\sigma_\mu^2 \iota_{T-1} \iota'_{T-1} + \sigma_e^2 I_{T-1} \right] \qquad\qquad (7.9)$$

with $u' = (u_{12},\ldots,u_{1T},\ldots\ldots,u_{N2},\ldots,u_{NT})$ of dimension $N(T-1)$ and further the usual notation. The covariance matrix Φ is thus block-diagonal with still homoskedastic variances for all i and t, but in which the error terms corresponding to a specific HAS firm for different years show constant autocorrelation (the size of $\sigma_\mu^2/(\sigma_\mu^2 + \sigma_e^2)$). Between different HAS firms there is still independence for all t. For estimation of the *RE* model parameters GLS is a usual technique for countering the equicorrelation in Φ. Practically this method amounts to transforming all variables in such a way that the adjusted error terms again comply with the classical assumptions. It can be shown that the *RE* coefficients in the linear labour-sales relationship can be estimated applying OLS to the following transformed model:

$$L_{it} - \delta \overline{L}_i = (1-\delta)\beta_1 + \beta_2 (Q_{it} - \delta \overline{Q}_i) + \beta_3 (L_{i,t-1} - \delta \overline{L}_{i,-1}) + \varepsilon_{it} \quad i=1,\ldots,N; \, t = 2,\ldots,T \quad (7.10)$$

with:

$$\delta = 1 - \frac{\sigma_e}{\sigma_1} \text{ and } \sigma_1^2 = (T-1)\sigma_\mu^2 + \sigma_e^2 \qquad\qquad (7.11)$$

and ε_{it} classically distributed. However, equation (7.10) is not feasible, because the true variances σ_e^2 and σ_μ^2 (and with that δ) are not known. In the panel data literature different

---

[125] Also time invariant explanatory variables are removed using a within transformation and as a consequence the corresponding partial effects can not be estimated. The place of business is an example (moves excluded).

alternatives are proposed to obtain unbiased estimates of these variance components (see Judge et al. (1982, p. 492)). In this chapter we follow the method of Swamy and Arora (1972). First, σ_e^2 is estimated using the LSDV residuals: $\tilde{\sigma}_e^2 = \tilde{e}_{FE}'\tilde{e}_{FE}/(N(T-1)-(N+2))$. Next, the variance of the firm specific effects σ_μ^2 is estimated indirectly through the estimation of $\sigma_1^2/(T-1)$. For this purpose we use the residuals of the error component model, in which all variables are expressed as firm specific means:

$$\overline{L}_i = \beta_1 + \beta_2 \overline{Q}_i + \beta_3 \overline{L}_{i,-1} + \overline{u}_i \qquad\qquad i=1,\dots,N \qquad\qquad (7.12)$$

The resulting estimates of the model parameters are thus based on *N* observations. In equation (7.12) only consideration is taken into account of the variation between HAS firms. Therefore, the corresponding estimators are also known as *BE* (*between*) *estimators*. The variance of the composite error term in equation (7.12) equals:

$$\text{var}(\overline{u}_i) = \text{var}(\mu_i + \overline{e}_i) = \left(\sigma_1^2/(T-1)\right) \qquad\qquad i=1,\dots,N \qquad\qquad (7.13)$$

by which an unbiased estimator of $\sigma_1^2/(T-1)$ is obtained using the error sum of squares of the *BE* residuals and dividing this sum by the corresponding number of degrees of freedom: $\tilde{\sigma}_1^2 = ((T-1)\tilde{e}_{BE}'\tilde{e}_{BE})/(N-3)$. Next, an unbiased estimator of σ_μ^2 is obtained from $\tilde{\sigma}_\mu^2 = (\tilde{\sigma}_1^2 - \tilde{\sigma}_e^2)/(T-1)$. Finally, the Swamy-Arora feasible GLS estimators can be computed by substitution of $\tilde{\delta} = 1 - (\tilde{\sigma}_e/\tilde{\sigma}_1)$ in equation (7.10).

For the vector of *RE* estimators the following equality holds: $\tilde{\vartheta}_{RE} = A\tilde{\vartheta}_{FE} + (I-A)\tilde{\vartheta}_{BE}$ (Baltagi (2002, p. 18)). Therefore, the *RE* approach can be considered to be an efficient combination of the within and between variation of HAS firms. If $\sigma_\mu^2 = 0$ ($\delta=0$ and $\Phi = \sigma_e^2 I_{N(T-1)}$) then the *RE* perspective reduces to an OLS regression model, in which the HAS data are considered to be one sample consisting of *p* (=*N*(*T*-1)) observations. In an OLS setting equal weight is ascribed to the within and between variation (Baltagi (2002, p. 18)). If $\delta \to 1$ (e.g. if $T \to \infty$) then the matrix *A* is observed to approach the identity matrix and so the *RE* approach comes up to the assumption of *FE*.

To explore the time variation in the extent of labour productivity and numerical labour flexibility in the different business groups we distinguish two research periods: 1993-1997 (the first five years) and 1996-2000 (the last five years). By dividing up the HAS data set in this way it is attempted to take into consideration the dynamic specification of the labour-sales relationship (sufficient *T*) and at the same time limiting the overlap between both periods.

Generally, the estimation results for the linear labour-sales model assuming one-way error components show all the parameter estimates having the expected sign and in most cases differing significantly from zero. This observation holds for both assumptions (*FE* and *RE*),

both HAS periods (1993-1997 and 1996-2000) and for both the Dutch hospitality industry as a whole and the business groups separately (see tables 7.3-7.5)[126].

Table 7.3: One-way error components in the linear labour-sales model: estimation results for the Dutch hospitality industry, all HAS firms, 1993-2000

1993-1997	OLS	Between	Fixed effects	Random effects
$\tilde{\beta}_1$	0.604*	0.403*	—	0.740*
$\tilde{\beta}_2$	0.112*	0.066*	0.299*	0.226*
$\tilde{\beta}_3$	0.815*	0.891*	0.206*	0.647*
$\overline{R}^2$	0.98	0.99	0.38	0.98
$\tilde{\delta}$				0.55
Chow (H$_0$:OLS)			14.3*	
LM (H$_0$:OLS)				10.9*
AIC			-0.6	-0.2
Schwartz			-0.6	-0.2
N	—	179	179	179
T-1	—	—	4	4
N(T-1)	716	—	716	716
1996-2000				
$\tilde{\beta}_1$	0.476*	0.112	—	0.732*
$\tilde{\beta}_2$	0.083*	0.020	0.231*	0.132*
$\tilde{\beta}_3$	0.877*	0.996*	0.268*	0.788*
$\overline{R}^2$	0.97	0.99	0.40	0.99
$\hat{\delta}$				0.39
Chow (H$_0$:OLS)			11.2*	
LM (H$_0$:OLS)				0.2
AIC			-0.1	0.3
Schwartz			-0.1	0.3
N	—	186	186	186
T-1	—	—	4	4
N(T-1)	744	—	744	744

Source : The HAS database 1993-2000 of the Dutch Board for the Hospitality and Catering Industry.
Remarks : ** = Significantly at α=5%; * = at α=10%.

The flexibility parameter γ in equation (7.4) can be estimated by $(1-\tilde{\beta}_3)$. It is observed that that the degree of numerical labour flexibility in the Dutch hospitality industry is estimated to be largest under the assumption of fixed effects. This empirical finding applies to both

---

[126] Detailed estimation results for the individual business groups are available from the author upon request.

research periods and to all business groups, the entire hospitality sector included (see tables 7.3-7.4).

Table 7.4: The one-way error component model: estimated numerical labour flexibility in the Dutch hospitality industry by business group ($\tilde{\beta}_3$ presented), HAS firms, 1993-2000

1993-1997	Fixed effects	Random effects	*N*(*T*-1)
Cafe sector	0.113	0.652*	136
Fast food sector	0.245*	0.662*	120
Restaurant sector	0.003	0.548*	288
Hotel sector	0.216*	0.754*	172
1996-2000			
Cafe sector	0.427*	0.759*	156
Fast food sector	0.071	0.478*	116
Restaurant sector	0.277*	0.752*	300
Hotel sector	0.122*	0.789*	172

Source   : The HAS database 1993-2000 of the Dutch Board for the Hospitality and Catering Industry.
Remarks : ** = Significantly at α=5%; * = at α=10%.

In the period 1993-1997 the extent of numerical labour flexibility in HAS restaurants and cafes is generally somewhat higher than in hotels and cafeterias. However, in the second period cafeterias seemed to have 'catched up', by which the extent of numerical labour flexibility in the fast food sector is estimated to be largest compared to the other business groups. Comparing the two research periods and assuming *RE*, HAS cafes, restaurants and hotels show (somewhat) less flexibility in the period 1996-2000 than in the first period. Assuming *FE* this conclusion applies to HAS cafes and restaurants, while in the fast food sector and the hotel business more flexibility is observed.

Compared to the other business groups the average scale-adjusted labour intensity (*sli*) is estimated to be lowest in the hotel business and highest in cafeterias (see table 7.5). In both periods the average *sli* in HAS hotels is estimated from 0.1 to 0.2 fte. In cafeterias the *sli* amounts to approximately 0.3-0.4 fte under the assumption of random effects and 0.5-0.6 fte assuming fixed effects. In most cases the conclusion holds that the *sli* estimates are (somewhat) smaller in the period 1996-2000 than in the first HAS period.

From the initial model parameters in equation 7.4 it can be observed that numerical labour flexibility has a positive effect on labour productivity (ceteris paribus[127]) since the initial *sli* equals $\tilde{\beta} = \tilde{\beta}_2 / \tilde{\gamma}$. In accordance with the empirical findings with respect to the extent of numerical labour flexibility, the average initial scale-adjusted labour intensities in most cases are observed to be lower in a *FE* setting. Assuming fixed effects the initial *sli* in both

---

[127] Since it empirically holds that $\mathrm{cov}(\tilde{\beta}_2, \tilde{\beta}_3) < 0$.

periods is still observed to be lowest in the hotel business: averaging out at 0.3 and 0.2 fte in the first and second period respectively. However, under the assumption of random effects the initial *sli's* in all business groups exceed 0.5 fte, again being highest in cafeterias.

Table 7.5: The one-way error component model: scale-adjusted labour intensity in the Dutch hospitality industry by business group ($\tilde{\beta}_2$ presented), HAS firms, 1993-2000

1993-1997	Fixed effects	Random effects	$N(T\text{-}1)$
Cafe sector	0.538*	0.213*	136
Fast food sector	0.588*	0.320*	120
Restaurant sector	0.480*	0.279*	288
Hotel sector	0.220*	0.154*	172
1996-2000			
Cafe sector	0.346*	0.125*	156
Fast food sector	0.532*	0.374*	116
Restaurant sector	0.449*	0.176*	300
Hotel sector	0.206*	0.114*	172

Source : The HAS database 1993-2000 of the Dutch Board for the Hospitality and Catering Industry.
Remarks : ** = Significantly at α=5%; * = at α=10%.

In line with the various size indicators the average labour threshold estimated is observed to be larger in HAS restaurants and hotels than in cafes and cafeterias. This empirical finding holds for both assumptions (*FE* and *RE*) and both HAS periods. For example, assuming fixed effects the mean threshold in restaurants and hotels in the period 1993-1997 is estimated at 5 and 11 fte respectively; in both the cafe sector and the fast food sector this amounts to approximately 1 fte.

Also conforming to expectations the magnitude of the labour threshold within a business group is observed to be positively correlated with firm size. This finding is illustrated in figure 7.1 for HAS hotels in the period 1993-1997 (*N*=43). The Pearson correlation between the estimated *FE* labour thresholds and the number of hotel rooms equals 0.53 (significantly at α=0.01). The positive correlation between these thresholds and the sales surface area is also observed to be significant. Comparable results are perceived for the second HAS period and the other business groups.

For testing the 'utility' of the panel data structure of the HAS data set (H$_0$: OLS) use can be made of a relevant Chow test (Chow (1960)) or a LM test (Breusch and Pagan (1980)). Assuming fixed effects this means testing the hypothesis of constant labour thresholds (H$_0$: $\beta_{11}= \beta_{12}=\ldots= \beta_{1N}$ or equivalently H$_0$:$\mu_1=\mu_2=\ldots=\mu_N$) and with random effects as the point of departure testing the proposition of no variation in the stochastic firm specific effects μ_i (H$_0$: $\sigma_\mu^2 = 0$). Table 7.3 shows that in a *FE* setting the null hypothesis of constant labour thresholds in the Dutch hospitality industry as a whole (all HAS firms) is rejected: in both

periods the Chow value[128] exceeds the corresponding critical value of approximately 1.0 (at α=0.05). On the other hand the LM test[129] with a critical value of 3.8 only in the first research period is observed to be significant. Also for the separate business groups, the Chow test, in both HAS periods, points to heterogeneous labour thresholds. However, assuming random effects only in the restaurant sector in the period 1993-1997 the null hypothesis is rejected[130]. Summarizing, in a *FE* setting the OLS model is always rejected and assuming *RE* mostly not.

Figure 7.1: HAS hotels: FE labour thresholds and the number of rooms, 1993-1997
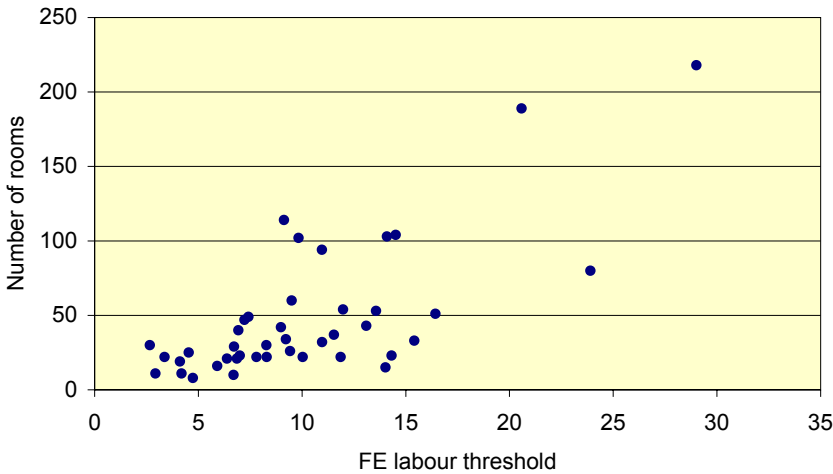
Source: The HAS database 1993-2000 of the Dutch Board for the Hospitality and Catering Industry.

Also weighed against random effects a relative preference exists for an error component regression model with fixed effects. For this inclination both theoretical and statistical arguments can be put forward. The *RE* specification is particularly suitable if we would have at our disposal a representative sample of hospitality firms since stochastic firm specific effects μ_i suppose a random sample of HAS firms by which we want to 'pass judgement'

---

[128] In a *FE* setting testing the null hypothesis of homogeneous labour thresholds amounts to the testing of *J=N*-1 linear restrictions $\beta_{11} = \beta_{1j}$ (j = 2,…,*N*). The Chow test is as follows: $F = ((RRSS - URSS)/J)/\tilde{\sigma}_e^2$, in which *URSS* equals the sum of squares of the *FE* residuals and *RRSS* that of the OLS residuals. Under the proposition of poolability of the HAS data it holds that the Chow test is *F* distributed with *J* and {*N(T*-1)-(*N*+2)} degrees of freedom respectively.

[129] The LM test for testing H$_0$: $\sigma_\mu^2 = 0$ equals $LM = k\left(\left(e'_{ols}(I_N \otimes \iota_{T-1}\iota'_{T-1})e_{ols} / RRSS \right) - 1 \right)^2$ with $k = N(T-1)/2(T-2)$. Under H$_0$ *LM* is asymptotically distributed $\chi^2(1)$.

[130] For cafes, cafeterias, restaurants and hotels the *LM* score in the period 1993-1997 equals 1.5, 2.8, 7.3 and 2.5 respectively. In the second research period *LM* never exceeds 1.

216

on the population of all hospitality firms (see Baltagi (2002, p. 15)). Obviously, the design of the HAS sample is not controlled (see section 7.3). Therefore, given the limited number of observations and the relative overrepresentation of large(r) hospitality firms in this panel assuming fixed effects seems more appropriate. In a *FE* setting the empirical findings and conclusions are confined to the specific group of HAS firms. Statistically the settlement can take place with use of, for example, the Akaike (AIC) or Schwartz criterion for model selection (see, for example, Hsiao and Sun (2000)). Table 7.3 reveals that both selection criteria in both research periods favor an error component regression model with fixed effects. For the business groups separately the same conclusion holds.

7.5. The consequences of dynamics

In empirical explorations of *static* panel data models also frequently use is made of Hausman's specification test (Hausman (1978)) to weigh an error component regression model with fixed effects against stochastic individual effects. In this case the null hypothesis tested is that of 'no correlation between the explanatory variables and the individual effects'. If correlation is present (H_1) then the *RE* estimators are not consistent. Because of the within transformation the *FE* estimators on the other hand are consistent (in a static model). Under H_0 both approaches imply consistent estimators with the *RE* estimators also being asymptotically efficient (see Mátyás and Sevestre (1996, p. 112)). The null hypothesis can be tested using the difference between the vector of *RE* and *FE* parameter estimates as a basis. If this difference is sufficiently small then it is expected H_0 to be true, while a relatively large difference points to correlation between the individual effects and the explanatory variables[131]. Therefore, rejecting H_0 seems to favor an error component regression model with fixed (firm specific) effects[132].

Given the *dynamic* specification of the linear labour-sales relationship the *RE* approach does not comply with the assumption of 'no correlation between the explanatory variables X and the composite error term u'. The endogenous variable L_{it} is dependent on the firm specific (time invariant) effects μ_i, a situation which accordingly also applies to the stochastic regressor $L_{i,t-1}$. In a dynamic error component regression model both perspectives, fixed

---

[131] The corresponding test statistic $H = (\tilde{\beta}_{RE} - \tilde{\beta}_{FE})'(V(\tilde{\beta}_{FE}) - V(\tilde{\beta}_{RE}))^{-1}(\tilde{\beta}_{RE} - \tilde{\beta}_{FE})$ under H_0 is asymptotically χ^2 distributed with k degrees of freedom, in which k equals the number of slope coefficients in the *FE* model to be estimated. Hausman and Taylor (1981, p. 1382) show that testing H_0 can also be based on the difference between the *RE* and *BE* estimates and the difference between the *FE* and *BE* estimates using the corresponding covariance matrices. In Baltagi (1989) it is proved that the empirical validity of the null hypothesis in the same way can be tested employing the difference between the *RE* and OLS estimators.

[132] However, Baltagi (2002) underlines that the specification test of Hausman by itself can not imply a distinct preference for one of both approaches. For instance, rejecting the null hypothesis using Hausman's test indicates a relative preference for an error component model with fixed effects, but before accepting this specification it is recommended to test also certain restrictions on the parameters of the FE model in reduced form (see also Chamberlain (1984, p. 1249)).

and random effects, end in biased estimates of the model parameters since in a *RE* setting $L_{i,t-1} - \delta \bar{L}_{i,-1}$ is correlated with $\varepsilon_{it} = (1-\delta)\mu_i + (e_{it} - \delta \bar{e}_i)$ [133] and assuming *FE* (δ=1), despite of the removal of all time invariant effects, $L_{i,t-1}$ in equation (7.7) is dependent on $\varepsilon_{it} = (e_{it} - \bar{e}_i)$, in particular on $\bar{e}_i$. So, although the (expected) correlation between the unobservable particulars of HAS firms and the explanatory variables in the labour-sales model at first seems to justify a specification with fixed labour thresholds (beside the before-mentioned theoretical considerations), in a dynamic framework also the *FE* approach ends in biased estimators (also when the error terms e_{it} are classical) and the consistency is dependent on *T*. Only if *T* is sufficiently large the *FE* estimators are consistent (see Baltagi (2002, p. 130)). However, in the available HAS database *T* is relatively small, by which the *FE* estimators in the dynamic labour-sales model can be considered to be biased and inconsistent.

To bring about consistency with fixed *T* in the panel data literature several procedures are proposed for estimating error component regression models in a dynamic framework. Anderson and Hsiao (1981), for instance, employ the IV methodology, in which the dynamic specification is first rewritten by taking first differences (*FD*) to eliminate the individual effects. For the labour-sales relationship this reformulation implies:

$$L_{it} - L_{i,t-1} = \beta_2 (Q_{it} - Q_{i,t-1}) + \beta_3 (L_{i,t-1} - L_{i,t-2}) + (e_{it} - e_{i,t-1}) \quad i=1,\ldots,N;\ t = 3,\ldots,T \quad (7.14)$$

Assuming classical errors e_{it} it is further proposed to use, for example, $L_{i,t-2}$ as an instrument for $L_{i,t-1} - L_{i,t-2}$ to counter the correlation with $e_{it} - e_{i,t-1}$. The Anderson and Hsiao (1982) estimators are consistent, but not efficient. In the *FD* specification of Arellano and Bond (1991) additional instruments $L_{i,t-k}$ are used and also consideration is taken into account of the MA structure of the error terms $e_{it} - e_{i,t-1}$. Within the class of IV estimators, in which lagged values of the predictand L_{it} are used as instruments the Arellano and Bond (1991) estimators are efficient (see Mátyás and Sevestre (1996, p. 129)).

The further details of the Arellano and Bond methodology for the dynamic labour-sales relationship can be summarized as follows. The first year for which the *FD* specification is observed is *t*=3:

$$L_{i3} - L_{i2} = \beta_2 (Q_{i3} - Q_{i2}) + \beta_3 (L_{i2} - L_{i1}) + (e_{i3} - e_{i2}) \qquad i=1,\ldots,N \qquad (7.15)$$

If the error terms e_{it} show no autocorrelation L_{i1} is a suitable instrument for $L_{i2} - L_{i1}$ since L_{i1} is strongly correlated with $L_{i2} - L_{i1}$ and not dependent on $e_{i3} - e_{i2}$. In the second HAS year both L_{i2} and L_{i1} are valid instruments for $L_{i3} - L_{i2}$, because $E[L_{ik}(e_{i4} - e_{i3})] = 0$ for *k*=1,2. After each year an additional instrument can continually be added, so that for the last observation year *t*=*T* in total *T*-2 valid instruments $\{L_{i1}, L_{i2}, \ldots, L_{i,T-2}\}$ can be distinguished

---

[133] Apart from this technical cause for correlation (dynamics) the firm specific effects μ_i are also expected to be correlated with the sales variable Q_{it}. Entrepreneurial and management proficiency are also likely to affect the business' performance in terms of sales and return.

using all (linear) orthogonal restrictions with respect to the lagged values of the endogenous variables L_{it} and the error term $e_{iT} - e_{i,T-1}$ (for some firm i). Therefore, for all observation years together in total ½$(T-2)(T-1)$ valid instruments are recognized. For an arbitrary hospitality firm i the complete matrix of instruments can be defined as follows (see also Mátyás and Sevestre (1996, p. 128)):

$$
P_i = \begin{pmatrix} Q_{i,95}-Q_{i,94} & 0 & 0 & \vdots & L_{i,93} & 0 & 0 & 0 & 0 & 0 \\ 0 & Q_{i,96}-Q_{i,95} & 0 & \vdots & 0 & L_{i,93} & L_{i,94} & 0 & 0 & 0 \\ 0 & 0 & Q_{i,97}-Q_{i,96} & \vdots & 0 & 0 & 0 & L_{i,93} & L_{i,94} & L_{i,95} \end{pmatrix} \qquad i=1,\ldots,N \quad (7.16)
$$

in which the period 1993-1997 serves as an example. Next it can be observed that the *FD* errors in equation (7.14) follow a MA(1) process with an unit root, so that for the first research period it holds that:

$$
V(\Delta e_i) = E(\Delta e_i \Delta e_i^{\cdot}) = \sigma_e^2 M = \sigma_e^2 \begin{pmatrix} 2 & -1 & 0 \\ -1 & 2 & -1 \\ 0 & -1 & 2 \end{pmatrix} \qquad i=1,\ldots,N \quad (7.17)
$$

with $\Delta e_i^{\cdot} = \left(e_{i3} - e_{i2}, e_{i4} - e_{i3}, \ldots, e_{iT} - e_{i,T-1}\right)$ of dimension 1x$(T-2)$ and the matrix M $(T-2)$x$(T-2)$ with the matching (co)variances. Hence, for all HAS firms together it follows that:

$$
V(\Delta e) = E(\Delta e \Delta e^{\cdot}) = \sigma_e^2 \left(I_N \otimes M\right) \tag{7.18}
$$

with $\Delta e^{\cdot} = \left(\Delta e_1^{\cdot}, \Delta e_2^{\cdot}, \ldots, \Delta e_N^{\cdot}\right)$. The Arellano and Bond (1991) consistent estimators of β_2 and β_3 can now be determined by applying GLS to the following IV specification:

$$
P' \Delta L = P' \Delta Q \beta_2 + P' \Delta L_{-1} \beta_3 + P' \Delta e \tag{7.19}
$$

with $P = (P_1^{\cdot}, P_2^{\cdot}, \ldots, P_N^{\cdot})^{\cdot}$ and the endogenous and predetermined variables defined in the same way as the error vector Δe. The corresponding parameter estimators are as follows:

$$
\begin{pmatrix} \tilde{\beta}_2 \\ \tilde{\beta}_3 \end{pmatrix} = \left[\left(\Delta Q \quad \Delta L_{-1}\right)' P \left(P'(I_N \otimes M)P\right)^{-1} P' \left(\Delta Q \quad \Delta L_{-1}\right)\right]^{-1} \left[\left(\Delta Q \quad \Delta L_{-1}\right)' P \left(P'(I_N \otimes M)P\right)^{-1} P' \Delta L\right] \tag{7.20}
$$

in which consistent estimates of the asymptotic (co)variances follow from (see also Baltagi (2002, p. 132)):

$$
V \begin{pmatrix} \tilde{\beta}_2 \\ \tilde{\beta}_3 \end{pmatrix} = \left[\left(\Delta Q \quad \Delta L_{-1}\right)' P \left(P'(I_N \otimes M)P\right)^{-1} P' \left(\Delta Q \quad \Delta L_{-1}\right)\right]^{-1} \tag{7.21}
$$

Table 7.6 shows all the estimated scale-adjusted labour intensities using the Arellano and Bond (1991) methodology having the expected sign and in most cases also being significant. As with the basic error component regression model, labour intensity in both HAS periods is observed to be smallest in the hotel sector. Also in line with the findings in table 7.5, in HAS cafes, restaurants and hotels the *sli* estimates are (somewhat) smaller in the period 1996-2000 than in the first HAS period. In this context, for cafes and hotels the estimates show resemblance to the *FE* observations and in the restaurant sector to the *RE* estimates.

Table 7.6: Arellano and Bond (1991) estimates of $\tilde{\beta}_2$ and $\tilde{\beta}_3$ in the dynamic labour-sales model per business group in the Dutch hospitality industry, HAS firms, 1993-2000

Business group	Parameter	1993-1997		1996-2000	
		Estimate	N(T-2)	Estimate	N(T-2)
Cafe	$\tilde{\beta}_2$	0.508*	102	0.310*	117
sector	$\tilde{\beta}_3$	0.025		-0.038	
Fast food	$\tilde{\beta}_2$	0.308	90	0.590*	87
sector	$\tilde{\beta}_3$	0.764		0.362	
Restaurant	$\tilde{\beta}_2$	0.269*	216	0.243*	225
sector	$\tilde{\beta}_3$	0.317		0.279*	
Hotel	$\tilde{\beta}_2$	0.225*	129	0.211*	129
sector	$\tilde{\beta}_3$	0.331*		0.086	

Source   : The HAS database of the Dutch Board for the Hospitality and Catering Industry.

Remarks : ** = Significantly at α=5% (based on the asymptotic standard errors in equation (7.21)).

The parameter estimates measuring the extent of numerical labour flexibility are observed to be significant only in two cases, i.e. in the hotel business (first HAS period) and in the restaurant sector (second period). Both estimates show resemblance to the *FE* findings.

7.6. The Klomp-Thurik model revisited

A natural extension of the one-way error component regression model is a specification, in which not only the constant term, in our case the labour threshold, but also the slope coefficients are considered to be firm specific, i.e.:

$$L_{it} = \beta_{1i} + \beta_{2i}Q_{it} + \beta_{3i}L_{i,t-1} + u_{it} \qquad i=1,\dots,N; t = 2,\dots,T \qquad (7.22)$$

To elaborate on equation (7.22) different perspectives can be followed. On the one hand, the assumptions refer to the extent of homogeneous behaviour of hospitality employers

(pointing to the extent of variation in the model coefficients[134]), on the other, they refer to the degree of homogeneous observations (pointing to the specification of the error structure). Some possible assumptions in model (7.22) are presented in table 7.7.

Table 7.7: Different sets of assumptions in the general linear labour-sales model

Specification	Assumptions
I Ordinary regression model (*OLS*)	$\beta_{ki} = \beta_k \qquad \beta_k$ fixed, k=1,2,3 and i=1,…,N $u_{it} \sim IID(0,\sigma_u^2)$
II Individual regression model (*OLS per i*)	$\beta_{ki} = \beta_{ki} \qquad \beta_{ki}$ fixed, k=1,2,3 and i=1,…,N $u_{it} \sim IID(0,\sigma_u^2)$
III Seemingly unrelated regression model (*SUR*)	$\beta_{ki} = \beta_{ki} \qquad \beta_{ki}$ fixed, k=1,2,3 and i=1,…,N $E(u_{it}) = 0$ $E(u_{it}u_{js}) = \sigma_{ij}$ if t=s, n.e.
IV One-way error component model with *FE*	$\beta_{1i} = \beta_1 + \mu_i \qquad \beta_1$ fixed, μ_i fixed and i=1,…,N $\beta_{ki} = \beta_k \qquad k$=2,3 and i=1,…,N $u_{it} \sim IID(0,\sigma_u^2)$
V One-way error component model with *RE*	$\beta_{1i} = \beta_1 + \mu_i \qquad \beta_1$ fixed, μ_i random and i=1,…,N $\beta_{ki} = \beta_k \qquad k$=2,3 and i=1,…,N $u_{it} \sim IID(0,\sigma_u^2)$
VI Random coefficient model (*RCM*)	$\beta_{ki} = \beta_k + \mu_{ki} \qquad \beta_k$ fixed, μ_{ki} random, k=1,2,3 and i=1,…,N $u_{it} \sim IID(0,\sigma_u^2)$
VII Nonlinear model (*NLR*)	$\beta_{ki} = g_k(Z_i;\theta) \qquad g_k$ k-specific function of some explanatory variables Z_i and fixed parameters θ $u_{it} \sim IID(0,\sigma_u^2)$

In the first specification (OLS) not a single form of heterogeneity of HAS firms is allowed for and therefore seems unrealistic. Specification II allows for firm specific fixed reaction terms, while observations are still assumed to be homogeneous. Actually, this model specification amounts to the application of OLS per HAS firm and implying 3*N* model parameters to be estimated (except for an estimation of σ_u^2). As with many empirical panel data studies the available HAS data are characterized by a relatively large *N* and small *T*. Specification II indicates a deficiency of parsimony and, using the HAS panel data, amounts to a considerable pressure on the number of degrees of freedom, thereby taking away from the confidence of the parameter estimates. In addition to firm specific fixed reaction terms, in specification III also a specific form of interdependency in the behaviour of hospitality

---

[134] Generally, in a panel data setting the model coefficients can vary over both dimensions: time and unit. However, in this chapter time varying parameters are not taken into consideration.

employers is assumed. In particular, it is supposed that some unobservable factors may affect the behaviour of (some of) these employers in the same year, i.e. contemporaneous correlation is assumed to be present. In the econometric literature this specification is known as seemingly unrelated regression (SUR, Zellner (1962)). Compared to specification II, SUR allows more for the heterogeneity of HAS firms. However, even more pressure is put on the confidence of the parameter estimates. In a SUR setting the total number of parameters to be estimated in equation (7.22) equals $3N+\frac{1}{2}N(N+1)$. Therefore, given the number of HAS observations SUR is not feasible. In the panel data literature the problem of lack of parsimony is countered by the development of alternative model specifications, of which the one-way error component regression model (specifications IV and V) is discussed in detail in section 7.4. Compared to specifications II and III the number of model parameters to be estimated in the one-way error component regression model is considerably smaller: $N+2$ in a *FE* setting and 3 assuming random effects. Individual effects are still allowed for by the specification of firm specific thresholds of labour. A natural extension of the *RE* approach is a specification, in which all regression coefficients are considered to be firm specific and stochastic (specification VI). In this random coefficient model (RCM, Swamy (1970) and Swamy and Tavlas (2001)) the number of degrees of freedom equals that in a *RE* setting. In a random coefficient model the expected values of the parameters β_{ki} are estimated. Finally, with specification VII the regression coefficients β_{ki} in the general linear labour-sales model are modeled as a *k*-specific function of relevant firm specific explanatory variables with matching fixed reaction terms to be estimated. Generally the resulting specification is nonlinear in the model parameters (Thurik (1984), Van der Hoeven and Thurik (1984) and Klomp (1996)).

To extent the one-way error component regression model as discussed in section 7.4 both a random coefficient model and a nonlinear regression model seem expedient. In this chapter the investigation is focused on the nonlinear setting. In particular, the following test specification is proposed:

$$L_{it} = \beta_{11}\left(\frac{siz_i}{\overline{siz}e}\right)^{\beta_{12}} + \left(\beta_{21}Q_{be,it} + \beta_{22}Q_{me,it} + \beta_{23}Q_{lo,it} + \beta_{24}Q_{re,it}\right)(CWR_i)^{\beta_{25}}\left(\frac{star_i}{\overline{star}}\right)^{\beta_{26}}$$

$$+ \beta_{31}(CWR_i)^{\beta_{32}}\left(\frac{man_i}{\overline{man}}\right)^{\beta_{33}}L_{i,t-1} + \varepsilon_{it} \qquad\qquad i=1,\dots,N;\ t=2,\dots,T \qquad (7.23)$$

with:

siz_i : Size of HAS firm i (firm specific average over t); for cafes, cafeterias and restaurants firm size is estimated by the sales surface area and for hotels by the number of rooms.

$Q_{be,it}$: Sales on beverages in firm i in year t.

$Q_{me,it}$: Sales on meals and fast food in firm i in year t.

$Q_{lo,it}$: Sales on lodging in firm i in year t.

$Q_{re,it}$: Sales on remaining services in firm i in year t.

222

The linear labour-sales model in a dynamic panel data framework

CWR_i : Corrected relative wage rate in firm i (firm specific mean), i.e. the observed wage rate is divided by the expected wage rate on the basis of total sales.

$star_i$: Number of stars of hotel i according to the 'Benelux Hotel Classification' (firm specific mean) used as a proxy for the service level. For the other business groups an indicator for the luxury level is not on hand from the HAS data set.

man_i : The operating period of firm i (median).

and further $\overline{size}$, $\overline{star}$ and $\overline{man}$ the sample means of $size_i$, $star_i$ and man_i respectively. The regressand L_{it} and the stochastic predictor $L_{i,t-1}$ are defined as before and the error term ε_{it} is assumed to be classically distributed. By definition, the sum of the sales components equals the total turnover: $Q_{it} = Q_{be,it} + Q_{me,it} + Q_{lo,it} + Q_{re,it}$.

Regression model (7.23) can be seen to be an extension of the Klomp-Thurik labour-sales model (see Klomp (1996, chapter 6)). In Klomp (1996) also the focus is on the variation in the HAS firm level labour productivity in the Dutch hospitality industry. However, Klomp estimates a labour-sales model using only one HAS year (1987). We elaborate on his specification by combining a time-series of cross-sections (panel data) and taking into consideration dynamic aspects with respect to labour demand (see section 7.2). In particular, the labour-sales model in equation (7.23) is reduced to the Klomp-Thurik model if $\beta_{12} = \beta_{31} = 0$ [135]. From equation (7.23) it is observed that the firm specific fixed model parameters in equation (7.22) can be written as follows:

$$\beta_{1i} = g_1(siz_i; \beta_{11}, \beta_{12}) = \beta_{11}\left(\frac{siz_i}{\overline{size}}\right)^{\beta_{12}} \qquad i=1,\dots,N \qquad (7.24)$$

$$\beta_{2ji} = g_2(CWR_i, star_i; \beta_{2j}, \beta_{25}, \beta_{26}) = \beta_{2j}(CWR_i)^{\beta_{25}}\left(\frac{star_i}{\overline{star}}\right)^{\beta_{26}} \qquad i=1,\dots,N; j=1,\dots,4 \qquad (7.25)$$

$$\beta_{3i} = g_3(CWR_i, man_i; \beta_{31}, \beta_{32}, \beta_{33}) = \beta_{31}(CWR_i)^{\beta_{32}}\left(\frac{man_i}{\overline{man}}\right)^{\beta_{33}} \qquad i=1,\dots,N \qquad (7.26)$$

In section 7.2 it is argued that the labour threshold β_{1i} in a hospitality firm is expected to be positively correlated with firm size. The empirical investigation using the one-way error component regression model in section 7.4 supports this hypothesis (see also figure 7.1). In equation (7.24) the parameter β_{11} can be described as the labour threshold of a HAS firm of

---

[135] Klomp (1996) allows for *additional* economies of scale by raising the total turnover component in equation (7.23) to the power of a parameter to be estimated, say λ. In this way, scale effects with respect to labour intensity (productivity) are represented by a combination of the estimated labour threshold and the estimated size of λ. However, in every business group the estimate of λ does not differ significantly from 1. So, additional scale economies are not present in the Dutch hospitality industry.

average size ($size_i = \overline{\overline{size}}$) and the parameter β_{12} as the elasticity of β_{1i} with respect to $\left(size_i / \overline{\overline{size}} \right)$. Theory predicts $\beta_{11} > 0$ and $\beta_{12} > 0$.

On the basis of the available HAS data, the scale adjusted labour intensity (*sli*) β_{2i} in equation (7.25) is supposed to be dependent on the type of service offered (four sales components are recognized) and on the quality of labour as estimated by the wage rate. In addition, for hotels the *sli* is also assumed to depend on the service level approximated by the number of stars in accordance with the 'Benelux Hotel Classification System' (see fn. 119). For the other business groups a suitable proxy for product quality is not available. As in Klomp (1996) wages CWR_i are corrected for firm size, because empirical investigations indicate that larger firms are generally offering higher wages for more or less comparable work (Oi (1990), Brown, Hamilton and Medoff (1990) and Oosterbeek and Van Praag (1995); see also chapter 5). From the discussion in section 7.2 it is expected $\beta_{2j} > 0$ (*j*=1,…,4), $\beta_{25} < 0$ and $\beta_{26} > 0$. With a richer human capital stock, neoclassically approximated by the position on the income ladder, labour productivity is expected to be higher and as the service level is upgraded labour intensity is likely to raise. In particular, the four parameters β_{2j} can be interpreted as the *partial sli* in an *average* HAS firm (see also Thurik (1984, p. 22)). In this case the term 'partial' refers to the extent of labour intensity (productivity) in the department to which is mainly pointed to by the corresponding sales component. The term 'average' points to the *sli* of a HAS firm for which it holds that $CWR_i = 1$ and for hotels also $star_i = \overline{\overline{star}}$. The parameters β_{25} and β_{26} reflect the elasticity of every *sli* β_{2ji} with respect to CWR_i and $(star_i / \overline{\overline{star}})$ respectively.

The extent to which the actual change in labour volume is in harmony with its desired change (degree of numerical labour flexibility) is, among other things, likely to be influenced by the management skills of the employer and, if present, the executive staff. For taking into consideration these unobservable individual effects, in section 7.4 we explored the one-way error component regression model. In accordance with the assumptions of specification VII in table 7.7, in this section these talents are modeled explicitly using a HAS variable, namely the operating period man_i of a HAS firm[136]. It is assumed that learning effects as a result of a longer operating period will end in more numerical labour flexibility, referencing here the actual change in labour volume being more in line with its desired change. The extent of numerical labour flexibility is also expected to be dependent on the share of secondary staff in an establishment (see chapter 6). This share is indicated by the wage variable CWR_i, by which a higher wage rate generally points to more primary employees compared to jobs with *Jedermanns Qualifikation*. As noted, the flexibility parameter γ_i particularly points to the adjustment of the amount of labour employed and because $\gamma_i = 1 - \beta_{3i}$ it is expected: $0 \leq \beta_{31} < 1$, $\beta_{32} > 0$ and $\beta_{33} < 0$. The coefficient β_{31} can be interpreted as the extent of numerical labour flexibility in a HAS firm with $man_i = \overline{man}$ and $CWR_i = 1$. The model parameters β_{32} and β_{33} reflect the elasticity of β_{3i} with respect to CWR_i and ($man_i / \overline{man}$) respectively.

---

[136] The operating period is defined as the duration of business (expressed in months) corresponding to the period for which the establishment is in the name of the same employer.

Table 7.8: Nonlinear estimation results for the dynamic labour-sales model in the Dutch hospitality industry per business group, HAS firms, 1993-2000

1993-1997 Labour threshold	Variable	Cafe sector	Fast food sector	Restaurant sector	Hotel Sector
$\tilde{\beta}_{11}$		0.107	0.546	0.709*	0.886*
$\tilde{\beta}_{12}$	Size	-0.469	-0.102	0.162	0.387
Labour intensity					
$\tilde{\beta}_{21}$	Q_{be}	0.304*	0.258*	0.336*	0.209*
$\tilde{\beta}_{22}$	Q_{me}	0.420*	0.135*	0.280*	0.165*
$\tilde{\beta}_{23}$	Q_{lo}	—	—	—	0.080*
$\tilde{\beta}_{24}$	Q_{re}	0.054	0.148	-0.044	-0.033
$\tilde{\beta}_{25}$	CWR	-0.553	-0.313	-0.171	0.659
$\tilde{\beta}_{26}$	Star	—	—	—	-0.148
Labour flexibility					
$\tilde{\beta}_{31}$		0.595*	0.709*	0.614*	0.791*
$\tilde{\beta}_{32}$	CWR	0.208	-0.053	-0.222	-0.351*
$\tilde{\beta}_{33}$	Man	-0.094*	-0.043	0.036*	0.040
Goodness of fit ρ^2		0.99	0.84	0.99	0.99
N		34	30	72	43
T-1		4	4	4	4
N(T-1)		136	120	288	172
1996-2000					
Labour threshold					
$\tilde{\beta}_{11}$		0.047	0.426	0.621*	2.586*
$\tilde{\beta}_{12}$	Size	0.006	-0.028	0.459*	0.537*
Labour intensity					
$\tilde{\beta}_{21}$	Q_{be}	0.038*	0.601*	0.157*	0.164*
$\tilde{\beta}_{22}$	Q_{me}	0.077	0.311*	0.192*	0.254*
$\tilde{\beta}_{23}$	Q_{lo}	—	—	—	0.102*
$\tilde{\beta}_{24}$	Q_{re}	-0.049	0.236	-0.002	-0.256*
$\tilde{\beta}_{25}$	CWR	-1.653	-0.917	0.199	1.201*
$\tilde{\beta}_{26}$	Star	—	—	—	0.339*
Labour flexibility					
$\tilde{\beta}_{31}$		0.957*	0.502*	0.757*	0.694*
$\tilde{\beta}_{32}$	CWR	-0.053	0.420	-0.263*	-0.483*
$\tilde{\beta}_{33}$	Man	-0.018	-0.102	-0.003	-0.002
Goodness of fit ρ^2		0.98	0.95	0.99	0.99
N		39	29	75	43
T-1		4	4	4	4
N(T-1)		156	116	300	172

Source : The HAS database of the Dutch Board for the Hospitality and Catering Industry.

Remarks   : * = Significantly at α=5% (based on asymptotic standard errors).

For estimating purposes Marquardt's algorithm is used (Marquardt (1963)). Table 7.8 presents the NLR results of equation (7.23) and reveals that most of the significant parameter estimates have the expected sign. This observation holds for both HAS periods.

Economies of scale with respect to labour productivity are observed to be present only in restaurants and hotels: in both HAS periods only for these two business groups β_{11} is significant and having the expected sign. For the elasticity of β_{1i} with respect to $\left(size_i / \overline{size}\right)$ this result only holds for the period 1996-2000 and indicating, as expected, the labour threshold in restaurants and hotels to be positively affected by firm size. The estimation results with respect to the labour threshold support the hypothesis that in cafes and cafeterias this threshold is averagely smaller than in restaurants and hotels. Furthermore, in the hotel sector β_{11} is observed to be considerably larger in the period 1996-2000 than in the first HAS period. This empirical finding may partly be explained noting the increasing scale of HAS hotels in the last years of the previous century.

In every business group it is generally observed the extent of labour intensity to be department-specific. The estimates of the average partial *sli's* vary with the sales components, by which the labour intensity is mostly seen to be smallest for those services that can be regarded to be the central function of business (e.g. the provision of lodging in hotels). It is further observed that the average partial *sli's* with respect to the main function of business are more or less in line with the parameter estimates of the error component regression model assuming random effects. The average partial *sli* with respect to the remaining services is observed to be significant only for HAS hotels in the period 1996-2000. The estimated negative sign, however, is not as expected. The same conclusion holds for the elasticity of labour intensity with respect to the wage rate. In the period 1996-2000 it is observed that a higher service level in HAS hotels has a positive and significant effect on labour intensity, taking away from the level of labour productivity.

In every business group the estimate of the 'average' degree of numerical labour flexibility (β_{31}) is observed to be positive and significant. This empirical result holds for both HAS periods. Therefore, regression model (7.23) can be seen to be a significant extension of the Klomp-Thurik labour sales model for the Dutch hospitality industry. As with the average partial *sli's*, the NLR results with respect to the average flexibility parameter β_{31} are observed to be more or less in line with the parameter estimates assuming one-way error components with random effects. In the period 1993-1997 the degree of numerical labour flexibility is higher in (average) HAS cafes and restaurants than in (average) cafeterias and hotels. Also in conformity with the empirical findings in section 7.4, in the period 1996-2000 cafeterias seemed to have 'catched up', by which the numerical flexibility in the fast food sector is estimated to be largest compared to the other business groups. Comparing the two periods, HAS cafes and restaurants, as in table 7.4, show less flexibility in the period 1996-2000 than in the first period. On the other hand, for cafeterias and hotels more flexibility is observed. With respect to the wage variable only in the restaurant sector and hotel business a significant effect on labour flexibility is observed. However, the

corresponding estimates of β_{32} seem to have the wrong sign. Finally, learning effects because of a longer operating period seem modest. Only for HAS cafes in the period 1993-1997 the corresponding estimated elasticity is significant and having the expected negative sign.

7.7. Summary, conclusions and discussion

In the present chapter we study the variation in the firm level labour productivity in the Dutch hospitality industry using the linear labour-sales model developed by Nooteboom (1980, 1982) as a starting-point. We use firm level data over the period 1993-2000 from a panel of hospitality employers participating in the Hospitality Analysis System (HAS) of the Dutch Board for the Hospitality and Catering Industry (see section 7.3). Using HAS data the same business groups can be defined as in the UWV data set (see section 3.2); though there are differences in interpretation. By entering the domain of panel data econometrics the present investigation into the Dutch hospitality industry can be considered to be an extension of earlier empirical studies of labour productivity in this branch of industry using the linear labour-sales model (see, for example, Van der Hoeven and Thurik (1984) and Klomp (1996)). Furthermore, to study differences in the degree of numerical labour flexibility between the business groups and over time we introduce dynamics in the labour-sales relationship using the concept of partial adjustment (see section 7.2). For empirical elaboration and sensitivity analysis some expedient model specifications are tested for two research periods, 1993-1997 and 1996-2000, taking into account the panel data structure of the HAS data set. Some empirical findings can be summarized as follows.

One-way error components assuming fixed and random effects – In conformity with various size indicators such as the number of employees on the payroll, the amount of sales and the sales surface area, the average labour threshold in an establishment is estimated to be larger in HAS restaurants and hotels than in cafes and cafeterias. Assuming one-way error components in the dynamic labour-sales model, this observation holds for both assumptions, fixed (*FE*) and random (*RE*) effects, and both HAS periods (see section 7.4). Not surprisingly, the threshold estimates indicate more than one independent department being present in restaurants and hotels. For example, assuming *FE* the mean threshold in HAS restaurants and hotels in the period 1993-1997 is estimated at 5 and 11 full time equivalents (fte) respectively; in cafes and cafeterias this amounts to approximately 1 fte.

Comparing the *FE* with the *RE* findings, the extent of numerical labour flexibility, i.e. pointing here to the degree of adjustment of the actual to the desired level of labour volume (see equation 7.3), is estimated to be largest assuming one-way error components with fixed effects (see table 7.4). This result holds for both research periods and for all business groups. In the period 1993-1997 the extent of numerical labour flexibility in HAS restaurants and cafes is generally somewhat higher than in hotels and cafeterias. However, in the period 1996-2000 cafeterias seemed to have 'caught up', by which the extent of numerical labour flexibility in the fast food sector is estimated to be largest compared to the other business groups. Comparing the two periods and assuming *RE*, HAS cafes, restaurants and hotels show (somewhat) less flexibility in the period 1996-2000 than in the first period. Assuming

FE this conclusion applies to HAS cafes and restaurants, while for cafeterias and hotels more flexibility is observed.

The average scale-adjusted labour intensity (*sli*) is estimated to be lowest in the hotel sector and highest in the fast food sector (see table 7.5). This observation holds for both assumptions (*FE* and *RE*) and both HAS periods. In most cases the conclusion holds that the *sli* estimates are (somewhat) smaller in the period 1996-2000 than in the first research period. For HAS hotels assuming fixed effects, for example, it is observed that an increment in sales (one unit equals approximately € 50,000,-) in the period 1993-1997 requires, on average, an increase of 0.2 full time employees. For cafeterias this rise in labour demand is almost tripling. When expressed in terms of workers rather than full time equivalents this ratio is even larger, because of the larger part time factor in cafeterias[137]. For all HAS firms together the corresponding scale-adjusted labour intensity is estimated at 0.3 fte (see table 7.3) and with approximately 1.5 workers per full time equivalent this finding implies that nearly 0.5 additional hospitality workers are required for every € 50,000,- sales. Of course, the concept of labour productivity formally deals with value added per full time equivalent[138]. Consequently, it is expected that the amount of labour required to attain a certain level of value added is considerably larger than for attaining the same level of sales[139].

One of the particulars of the HAS panel is the emphatic presence of large firms, a situation that may partly be explained by some employer characteristics such as the educational level indicating, for instance, entrepreneurial awareness and also by the formal organizational structure in larger firms to provide, with relative ease, the necessary data for HAS participation. Therefore, given the limited number of participating firms and the relative overrepresentation of large organizations (see table 7.1), one-way error components with fixed effects seem more appropriate than assuming a labour-sales model with random labour thresholds. Also statistically, using the Akaike and Schwartz criteria for model selection, in all business groups a labour-sales model with fixed effects is favoured.

One-way error components using the Arellano and Bond methodology – However, dynamics in the one-way error component regression model ends in biased estimates of the model parameters. In a *RE* setting correlation between the explanatory variables and the firm specific effects is evident, but also assuming fixed effects, despite the within transformation, the corresponding estimators can be observed to be biased and inconsistent. Therefore, in

---

[137] According to the findings of the Hospitality Employees Study one full time equivalent (fte) equals approximately 1.8 workers in cafes and cafeterias, 1.5 workers in restaurants, 1.3 employees in hotels and 1.5 workers in the Dutch hospitality industry as a whole (see Dutch Board for the Hospitality and Catering Industry (2002b)). Of course, it is assumed that these part time factors, particularly their order, are also more or less applicable for the present HAS data.

[138] From discussions with hospitality employers participating in the HAS it is observed that many employers are not 'comfortable' with the formal concept of labour productivity. For practical purposes many HAS employers prefer to work with 'neighbouring' proxies such as the wage rate or/and the sales per full time equivalent.

[139] In the Dutch hospitality industry in 2001 an average of 1.3 full time employees is required to attain € 50,000,- value added (Statistics Netherlands (2002)).

section 7.5 the basic error component regression model is reformulated following the Arellano and Bond (1991) methodology to bring about consistency in the parameter estimators. Using this methodology all the estimated scale-adjusted labour intensities are observed to have the expected sign and in most cases also being significant (see table 7.6). As with the basic error component regression model, labour intensity in both HAS periods is observed to be smallest in the hotel sector. Also in line with the findings in table 7.5, in HAS cafes, restaurants and hotels the *sli* estimates are (somewhat) smaller in the period 1996-2000 than in the first period. In this context, for cafes and hotels the Arellano and Bond estimates show resemblance to the *FE* observations and in the restaurant sector to the *RE* estimates.

The parameter estimates measuring the extent of numerical labour flexibility are observed to be significant only in two cases, i.e. in the hotel business (first HAS period) and in the restaurant sector (second period). Both estimates show resemblance to the *FE* findings.

The Klomp-Thurik model revisited, and extended – To extent the one-way error component regression model, i.e. in the dynamic labour-sales model allowing all model parameters to be dependent on the particulars of the establishment, in section 7.6 we explored an extended version of the Klomp-Thurik nonlinear labour-sales relationship (Klomp (1996)).

The estimation results of this nonlinear regression model show, as in Klomp (1996) using 1987 HAS data, economies of scale with respect to labour productivity only being present in HAS restaurants and hotels (see table 7.8). For both these business groups in the period 1996-2000 it is also observed that, as expected, scaling-up business implies a higher labour threshold.

Also in line with the findings in Klomp (1996), the extent of labour intensity within a business group generally varies with the type of services offered. That is, labour intensity is observed to be department-specific and is mostly smaller for those services that can be regarded to constitute the main function of hospitality business such as the provision of fast food in cafeterias and lodging in hotels. It is further observed that the average partial *sli* estimates with respect to the main function of business are more or less in line with the parameter estimates of an error component regression model assuming random effects. Conforming to expectations, in both HAS periods the wage rate in cafes and cafeterias has a negative impact on labour intensity. However, as in Klomp (1996), the asymptotic standard errors are too large for the corresponding parameter estimates to differ significantly from zero. Significance is only established for HAS hotels in the period 1996-2000, but the corresponding sign is perverse.

For HAS hotels Klomp (1996) did not find a significant effect of the luxury level on the degree of labour intensity. This conclusion also applies to the period 1993-1997 using HAS panel data. However, for the period 1996-2000 it is observed that a higher luxury level in HAS hotels has a positive and significant effect on labour intensity, taking away from the level of labour productivity.

The present nonlinear labour-sales model can be regarded to be a real extension of the Klomp-Thurik labour-sales relationship, since, in every business group, the extent of numerical labour flexibility in 'average' HAS firms is observed to be significant within the expected range. This finding holds for both research periods. As with the average partial

sli's for the main function of business, the regression results with respect to the average flexibility parameter are more or less in line with the parameter estimates assuming one-way error components with random effects. In the period 1993-1997 the degree of numerical labour flexibility is higher in (average) HAS cafes and restaurants than in (average) cafeterias and hotels. Also in conformity with the empirical findings in section 7.4, in the period 1996-2000 cafeterias seemed to have 'catched up', by which the numerical flexibility in the fast food sector is estimated to be largest compared to the other business groups. Comparing the two HAS periods, cafes and restaurants, as in table 7.4 assuming one-way error components, show less flexibility in the period 1996-2000 than in the first period. On the other hand, for HAS cafeterias and hotels more flexibility is observed.

CHAPTER 8

Labour market segmentation and labour mobility

An investigation into the Dutch hospitality industry

8.1. Introduction

Chapter 6 contained the expectation that in aiming for the optimum organization of their businesses, employers will strive for flexibility in their pool of employees, that is to say, strive for the *right employee at the right time in the right place*. The employer has various tools to assist in this regard, such as being able to offer temporary appointments, part-time work and additional training. In chapter 6 we saw that in the Dutch hospitality industry, in line with SLM expectations, tools that are connected with the promotion of knowledge and skills amongst personnel (functional labour flexibility) are used relatively more often in the primary labour market, whereas the stimulation of numerical manoeuvrability within the organization (numerical labour flexibility) is applied relatively more within the secondary segment. As indicated, the difference here is one of emphasis: in general the different types of labour flexibility occur at all levels of the hospitality organization. Given the observed flexibility practices in the Dutch hospitality industry, the empirical plausibility of the core-periphery representation of the flexible firm (see, for example, Atkinson (1984, 1988), Huiskamp (1999) and Goudswaard (2003)) is to a large extent not rejected. This conclusion applies to all business groups in the Dutch hospitality industry.

From the employer's perspective, labour flexibility, stimulated by structural changes in the relevant environment of the organization, has the goal of creating mobility flows within the organization, which enable an optimal (re)allocation of labour. This aim of the employer relates, on the one hand, to attracting the right employees from the external labour market and the letting go of less valued employees (external labour mobility) and, on the other hand, to reallocation or revaluing of the current pool of workers (internal labour mobility, physical and/or mental).

From the employee's perspective, tools for creating labour flexibility can be regarded as job characteristics and may influence the intention of employees to quit or not. Some employees will regard a small part-time job (including flexible working hours) as a positive working condition enabling a good balance between participation in the labour market and private activities such as attending school and childcare. In such a work situation a small part-time job, through job satisfaction, leads to less intention to quit and thereby to a smaller chance of external labour mobility (ceteris paribus). Other employees may regard a small part-time job as less alluring, with the result that mobility aspirations increase and thereby also the probability of external labour mobility. What was once an alluring part-time job may, for

example, no longer be adequate to meet household expenses due to a change in living situation, and therefore have become less alluring. Also, if a worker feels that within the organization there is little attention paid to substantive development to be able to specialise or, for example, to progress to a better position within the organization, then this work attitude can encourage thoughts of striving for a more attractive job outside the organization. For other, less ambitious employees, this incentive may not of course apply. These examples illustrate the connection between types of labour flexibility and (potential) labour mobility. Although in the present discussion this connection moves primarily from labour flexibility in the direction of labour mobility, the relationship may generally be regarded as having mutual causation, since external labour mobility can also lead to a vacancy within the organization filled, through (substantial) additional training, by a worker progressing through the organization. In this example, external labour mobility leads, via the concept of functional labour flexibility, to advancement within the organization. Outflow from the organization is also an opportunity for management, if it wishes, to strengthen the numerical manoeuvrability of the organization by, for example, altering the size of the vacant job. External mobility leads here to greater numerical flexibility.

In common with distinct wage-setting processes (chapter 5) and a different emphasis on the forms of labour flexibility (chapters 6 and 7), different mobility processes between the labour market segments and in line with SLM predictions can also be seen as an indication for the existence of labour market segmentation in the Dutch hospitality industry (see also chapter 1, step 3 in figure 1.1)). In particular, the SLM theory predicts relatively greater stability amongst primary employees than amongst employees in the secondary segment. Through relative job allure and a better quality of connection between worker and job, this primary stability manifests itself in, for example, a greater commitment to the work and the organization the worker is employed by and thereby in fewer mobility aspirations and lesser labour mobility. On the other hand, the neoclassical body of thought assumes that productivity, earnings and labour mobility are chiefly determined by the human capital stock of employees (see also Hartog, Mekkelholt and Van Ophem (1987, p. 9)). The human capital theory predicts that there are therefore no significant differences in the explanatory process for labour mobility between the labour market segments.

The primary aim of this chapter is to empirically determine the significant explanatory variables for the intention to quit and actual mobility amongst employees in the different labour market segments of the Dutch hospitality industry. Various mobility equations are estimated for this purpose. The estimation results can be used to test whether the observed mobility practices in the different submarkets differ significantly from each other and being in line with the SLM expectations or not. In the literature, various determinants of (potential) labour mobility are identified, including worker, job and firm characteristics and market conditions. This diversity of explanatory variables enables taking into account the various reasons for mobility, including the wish, the opportunity and the need to change one's labour market position, i.e. *the desire, ability and need to be mobile*. A significant addition to the mobility analyses in Hartog, Mekkelholt and Van Ophem (1987), Dekker, De Grip and Heijke (1995), De Graaf and Luijkx (1997) and, for example, De Wolff, Luijkx and Kerkhofs (2002) is the inclusion of different aspects of the *work attitude* in the mobility

equations. These work attitudes point to the different forms of the physical and mental workload experienced and are connected with, for example, work pace, aggravating conditions, freedom in work, immediate supervision, colleagues and the work organization. In addition to the 'harder' job characteristics such as the type of contract of employment and contractual working hours, it can be expected that also the different work attitudes will be (especially) determinant in the decision whether or not one wishes to change job.

A representative sample of hospitality employees from the administration of insured workers of the Implementing Body of Social Insurances ("Uitvoeringsorgaan Werknemers Verzekeringen (UWV)") serves as a basis for the mobility analyses[140]. In this chapter use is made of the PCS segmentation method for the operationalisation of relevant labour market segments in the Dutch hospitality industry, with reference to the SLM perspective of the employer, as introduced and discussed in chapter 3.

The structure of this chapter is as follows. Section 8.2 provides a description of the observed labour market transitions in the different submarkets of the Dutch hospitality industry. Section 8.3 presents a further explanation of some determinants of the intention to quit and actual mobility of employees and research is done into how far the assumed correlations find empirical support in the Dutch hospitality industry (bivariate analysis). To reach a more complete and integrated picture of the different mobility processes in the Dutch hospitality industry, in section 8.4 we explore the multivariate approach by estimating segment-specific mobility equations. Section 8.5 ends this chapter with a summary, conclusions and discussion.

8.2. A description of labour mobility in the Dutch hospitality industry

External labour mobility is a characteristic of the Dutch hospitality industry. In the period September 2000 – September 2001 (hereinafter also indicated as September '2000-2001') approximately 32 per cent of all employees on the payroll (in September 2001) found work in the hospitality sector (inflow) and 23 per cent changed jobs within the industry (through-flow, see table 8.1). A minority of the 305,500 hospitality employees in September 2001 therefore were immobile in the relevant period. In line with the segmentation theory, external labour mobility is relatively more frequent on the secondary labour market than amongst hospitality workers on the primary labour ladder (see also section 3.6.4). Also in accordance with the SLM expectations, within the secondary segment the percentage of employees entering the industry is substantially greater than those moving through it, whilst the reverse is true in the professional market. For hospitality workers with an initial professional qualification at an intermediate or high level, it can be anticipated that the bond with the hospitality industry will especially be strong, since the knowledge and skills acquired can be productively used by a relatively large number of employers within the industry. On the other hand, many employees on the secondary labour ladder will regard the

---

[140] See chapter 3 for a description of the UWV data.

hospitality job primarily as a (temporary) secondary source of income and accordingly work commitment and the bond with the present employer and the industry are expected to be much less strong than amongst the group of primary workers. The investigation in chapter 3 revealed that empirical support exists for these expected differences in commitment (see table 3.18). Illustrative of this is, for example, the observation that 56 per cent of all hospitality workers in the secondary labour market responds affirmatively to the statement *My work means a lot to me*, whilst the positive response of primary employees is almost 90 per cent. Furthermore, 53 per cent of all secondary employees expects to continue working for a relatively short time in the hospitality industry (< 2 years), whereas over 80 per cent of the professional employees and almost 60 per cent of all employees at the bottom end of the primary spectrum expect they will continue working in this branch of industry for a further five years or more.

Also in harmony with the observed differences in commitment, the actual outflow out of the hospitality industry amongst secondary employees is considerably larger than amongst employees on the primary labour ladder. Over one-third of all secondary employees in the period September '2000-2001' left the hospitality industry. Though still to be called substantially, scoring 19 per cent, industrial outflow amongst professional employees is significantly smaller. In accordance with the emphasis on temporary appointments, the inflow and outflow percentages illustrate the traditional coming and going of hospitality employees in the secondary segment. In the period September '2000-2001', both types of mobility flows together represent over 100,000 transitions from and to the secondary labour market (exclusive of multiple mobility). In the professional market these are less than 20,000 transitions.

Compared with the other submarkets, the various external transitions on the lower tier of the primary spectrum can be considered to be more in balance: in the relevant period 28 per cent entered the industry at this level, 24 per cent switched hospitality employers and 26 per cent left the industry.

In addition to the actual external transitions in the hospitality industry, a certain extent of potential external mobility amongst hospitality employees can also be observed. For example, in September 2001, 19 per cent of all hospitality employees is actively looking for work with another employer. Notably, this search behaviour amongst primary hospitality employees is relatively larger than amongst workers in the secondary segment. In harmony with the usability of the human capital within the hospitality industry, over 60 per cent of all (searching) professional employees is applying for a new position with another hospitality employer, while a similar percentage of secondary employees is searching beyond the industrial borders.

Besides external transitions, intraorganizational mobility will also contribute to the restructuring of the labour market. In September 2001, 14 per cent of all hospitality employees has moved, at least once, to another 'chair' within the present organization. In line with the observed investments in additional training in the different labour market segments, intraorganizational mobility in the primary labour market is seen more frequently

than amongst hospitality employees in the secondary segment (supporting hypothesis 12 in chapter 3).

Table 8.1: Labour mobility in the Dutch hospitality industry by labour market segment, PCS method, September 2000 – September 2001

	Secondary workers	Primary zone		Total
%		Craft workers	Professional workers	
Immobility	41.3	48.5	50.3	45.5
Through-flow	16.4	23.8	39.3	23.0
Inflow	42.3	27.7	10.4	31.5
Employment September 2001	100	100	100	100
Outflow	34.4	26.2	19.1	28.3
#				
Immobility	58,900	53,800	26,100	138,800
Through-flow	23,300	26,300	20,400	70,000
Inflow	60,400	30,800	5,400	96,700
Employment September 2001	142,600	111,000	51,900	305,500
Outflow	43,100	28,500	11,000	82,600
%				
Job search	14.4	20.4	26.4	18.6
Internal mobility	8.1	19.2	19.8	14.1
n	752	471	215	1,438

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : Immobility = employees who in the period September 2000-September 2001 remained with the same employer; through-flow = employees who in the period September 2000-September 2001 switched employers within the hospitality industry; inflow = employees in September 2001 being employed in the hospitality industry for less than one year; outflow = employees in September 2000 being employed in the hospitality industry, but not in September 2001; job search = employees who are currently (September 2001) searching for a job with another employer; internal mobility = employees who are employed at the present employer (September 2001) for a longer time period than in the present job position.

: The outflow share equals the total number of outflow workers divided by total employment in September 2000.

: n = The size of the net UWV sample.

On the basis of the observed transitions in table 8.1 it can be concluded that the external labour market dynamics in the Dutch hospitality industry are sizeable. As a consequence of this, internal dynamics are more limited. Regarding the observed transitions in the

hospitality labour market it holds that multiple mobility in the relevant period cannot be distinguished and therefore external labour mobility in the Dutch hospitality industry is expected to be even larger than measured using the UWV data.

For the purpose of bringing the empirical findings of mobility research into perspective, in the relevant literature frequently the problematic nature of comparability is pointed out when using different sources of information (see, for example, De Graaf and Luijkx (1997) and Allaart and Van Ours (2001)). Different investigations into labour mobility are not uncommonly marked by, inter alia, different definitions of labour market positions, a different type of data collection (survey or administrative basis) or different data selections such as the inclusion or not of multiple mobility, self-employed persons and temporary appointments. A comparion of mobility findings between different sources of information can also be problematic due to differences in the design of surveys and the questions inside (Price (2004, pp. 27-28)). Comparability may also be questionable because of different measurement periods, possibly showing significant different market conditions[141]. For drawing a consistent parallel of labour market transitions between the Dutch hospitality industry and other branches of industry it therefore seems advisable to use as far as possible one and the same source of information. Insofar as other empirical investigations into labour mobility give consideration to the hospitality sector, this industry, however, is not uncommonly combined with the trade and repair industry. For example, different waves of the OSA panel of labour supply ("OSA-arbeidsaanbodpanel") reveal that this combination of branches of industry in the Netherlands has a forward position regarding external labour mobility, but is scoring below average with respect to intraorganizational mobility (De Graaf and Luijkx (1997, pp. 34-35))[142]. Also from data of Statistics Netherlands it can be concluded that the external labour market dynamics in the Dutch hospitality industry, combined with trade and repair, are scoring relatively high (Hartog, Mekkelholt and Van Ophem (1987, p. 81)).

---

[141] It is clear that any questionable comparability of research findings does affect empirical research in general and is not confined to investigations on the subject of labour mobility.

[142] In their investigation into labour mobility in the Netherlands, De Graaf and Luijkx (1997) distinguish between the following (combined) branches of industry: (1) industry and agriculture, (2) construction industry, (3) hospitality industry, trade and repair, (4) transport industry, (5) commercial services, (6) medical services, (7) other services, (8) public government and (9) education. Using the OSA labour supply panel, in the period 1986-1994 it is averagely observed that 17.1 per cent of all men has a job with another employer after two years and 11.5 per cent another position with the same employer. For the hospitality industry, combined with trade and repair, these transition percentages amount to 20.3 and 9.2 per cent respectively. Regarding external labour mobility, the Dutch hospitality industry, combined with trade and repair, is only headed by the commercial services (21.8 per cent) and the construction industry (21.0 per cent) and on the subject of intraorganizational mobility followed by other services (9.0 per cent) and the construction industry (6.5 per cent). Regarding the relative position of the hospitality industry, combined with trade and repair, for women the same conclusions apply: 'taking third places'.

Labour market segmentation and labour mobility

An investigation into labour mobility in the Netherlands of which its empirical findings do make it possible to compare the labour market flows in the hospitality industry separately with those in other branches of industry in a consistent way is carried out by Van der Hoeven (1990, see table 8.2).

Table 8.2: Labour mobility in the Netherlands by branch of industry, 1984 – 1985

%	SIC code	Immobility	Through-flow	Inflow	Outflow
Agriculture and horticulture	1	93.0	1.2	5.8	4.8
Foods and luxury foods industry	20	89.8	1.1	9.1	8.6
Printing industry	27	88.7	2.0	9.3	8.0
Base metal	33	92.2	0.0	7.8	4.7
Metal products	34	84.4	1.1	14.5	9.2
Machine industry	35	88.6	0.6	10.8	7.2
Electrotechnical industry	36	88.1	0.5	11.4	6.4
Transport industry	37	87.8	0.7	11.5	7.9
Construction industry	51	85.2	4.7	10.1	12.2
Contractors, installers	52	87.6	3.1	9.3	9.2
Wholesale	61	86.7	2.1	11.3	7.7
Retail trade	65	86.6	2.7	10.7	10.5
Hospitality industry	67	80.4	4.5	15.0	13.3
Repair	68	90.9	2.0	7.0	8.8
Road transport	72	89.3	1.5	9.2	6.6
Communication	77	92.5	0.2	7.2	4.3
Banking	81	91.6	0.6	7.8	5.8
Insurance	82	90.5	0.9	8.6	5.3
Commercial services	84	82.8	3.1	14.1	9.0
Public government	90	91.8	1.2	7.0	5.7
Education	92	89.3	2.3	8.3	6.1
Medical services	93	86.8	2.8	10.4	7.5
Welfare services	94	85.4	1.1	13.5	10.2
Socio-cultural institutions	95	86.2	1.8	12.0	9.3
Total		**87.5**	**1.9**	**10.6**	**8.3**

Source : Van der Hoeven (1990) based upon the "Arbeidskrachtentelling (AKT) 1985" of Statistics Netherlands.

Remarks : The branches of industry are defined in conformity with the Standard Industrial Classification 1974 (SIC, "Standaard Bedrijfsindeling 1974 (SBI)") of Statistics Netherlands.
: Immobility, inflow and through-flow percentages are based upon total employment per branch of industry in April 1985, while the outflow shares equal the total number of outflow workers divided by total employment per branch of industry in April 1984.

The flow figures in this study relate to the period April '1984-1985' and are based on the results of the "Arbeidskrachtentelling (AKT)" of Statistics Netherlands, the precursor to the

"Enquête beroepsbevolking (EBB)". In interpreting the labour market flows per industry it is important to note that the employment in the AKT refers to all working persons (i.e. including self-employed persons and family members who help out) for whom their job is the principle activity. This therefore excludes the marginal labour force such as schoolchildren, students and housewives (and househusbands) who have a paid job in the labour market as a sideline. The exclusion of these groups obviously affects the distribution of the observed mobility flows. One can expect, for example, that the percentage of immobile persons will be greater in an AKT setting than in an investigation that includes the marginal labour force. Despite the issue of comparability[143], the findings in tables 8.1 and 8.2 support this expectation.

The differentiation of the labour mobility according to branch of industry once again illustrates the relatively strong external labour market dynamics in the Dutch hospitality industry. Of the differently-identified sectors, the flow in and out in the period April '1984-1985' is comparatively the largest in the hospitality industry: 15 per cent of all employed persons in April 1985 entered the sector in the preceding year and over 13 per cent of all persons employed in April 1984 moved out of the sector. With regard also to the movement through each sector, the hospitality sector holds a leading position, second only to the construction industry. Consequently, immobility in the Dutch hospitality industry in the period 1984-1985 is by far the smallest.

Other sectors with a relatively high inflow percentage include the metal products industry, commercial services and welfare services. Conversely, agriculture and horticulture, public government and the consumer repairs sector (e.g. shoes, household electrical repairs, clocks and watches, and jewellery) are characterised by a relatively low proportion of inflow. Furthermore, the distribution of the total inflow according to origin also has clear variations according to sector. Applying the definitions in Van der Hoeven (1990), of the total flowing into the labour market in the Netherlands in the period 1984-1985, approximately 21 per cent are schoolchildren and students and 19 per cent from the group of unemployed. Sectors with a relatively large inflow of schoolchildren and students are banking (34 per cent), retail trade (32 per cent) and, for example, medical services (31 per cent). For this category of origin, the hospitality industry scores below average with 19 per cent. Responsible for this finding is the exclusion of the marginal labour force. Only the flow into work of schoolchildren and students leading to a position in the labour market as a principle activity is taken into account. Industries with a relatively large inflow of unemployed persons are the construction industry (32 per cent), the metal products industry (31 per cent) and, for

---

[143] The external mobility flows as presented in table 8.2 are taken from the mobility tables in Van der Hoeven (1990, pp. 49-54), but whereas in Van der Hoeven the flow in and out both include movement within the industry, table 8.2 excludes this, so that the mobility flows are defined in the same way as in the Hospitality Employees Study. Significant differences between the two investigations include (1) a different observation period and accordingly different market conditions; (2) a different delineation of the hospitality sector (Hospitality Employees Study: UWV framework, AKT: SIC (SBI) framework), and (3) a different definition of employment (Hospitality Employees Study: exclusive of self-employed persons, but including jobs that are sidelines; AKT: the reverse).

example, the base metal industry (31 per cent). For this category of origin the hospitality industry scores 19 per cent, in line with the national picture for flow into the labour market.

Like the hospitality industry, the construction industry, retail trade and, for example, welfare services are characterised by a relatively large proportion of employed persons who left the relevant sector in the period 1984-1985. A relatively low percentage of outflow is observed within the communication industry, the base metal industry and agriculture and horticulture. These sectors have proportionately the highest immobility. Just as with the flow in, the pattern of those moving out varies per sector. Of the total number of persons leaving the relevant sector in the Netherlands in the period 1984-1985, 19 per cent leaves the labour market to become unemployed and 9 per cent due to retirement (Van der Hoeven (1990, p. 52)). Unemployment as a category of destination is identified relatively highly in the construction industry (40 per cent), followed some distance behind by the transport industry (29 per cent) and the consumer repairs sector (27 per cent). The Dutch hospitality industry also scores above average with regard to leaving the sector to become unemployed, with a figure of 22 per cent. Retirement as a reason for leaving the labour market is identified particularly in the communication industry (44 per cent), followed some distance behind by the base metal industry (27 per cent), public government (23 per cent) and the insurance sector (23 per cent). In harmony with the relative youthfulness of the employees, retirement as a reason for leaving the hospitality industry scores relatively the lowest (3 per cent). Other industries where retirement is relatively low is in retail trade, the construction industry and, for example, road transport.

In summary, it can be concluded that external labour mobility in the Dutch hospitality industry may be regarded as considerable and internal mobility as more limited. However, it is not clear on the face of it how these findings should be qualitatively assessed. In general it can be expected that labour mobility will have both positive and negative effects. This expectation applies to both internal and external transitions and where the assessment is dependent on the point of view. Internal mobility is often linked with more functional flexibility for the organization and the intrinsic development of workers. Alongside these positive aspects of internal mobility, one can also identify possible negative consequences, such as loss of human capital in the department (unit) from which the relevant worker leaves (to another position within the organization) and an increased workload for the workers left behind. However, it can be expected that mobility within an organization is mostly the result of constructive discussions between, and a well-considered decision by all parties involved, in which the consequences for the individual and the organization have been adequately explored. This result applies perhaps more to voluntary changes and less to internal changes in job as a result of, for example, a reorganization. Desirable and undesirable effects of external labour mobility can also be identified. For a worker, mobility to another employer can have a voluntary character since, for example, the new job may offer better chance of realising ambitions or of better working conditions than the former employer. Insofar as employee turnover is linked to the loss of poorly performing and under-committed workers, then from the perspective of the organization also external mobility may be regarded as desirable (voluntary). On the other hand, the leaving of highly valued employees hard to replace is by the organization rather likely to be regarded undesirable. In the organization

literature and applied psychology a distinction is made here between functional and dysfunctional employee turnover (see, for example, Dalton and Todor (1979), Dalton, Todor and Krackhardt (1982), Abelson and Baysinger (1984), Hollenbeck and Williams (1986) and Rosse and Noel (1996))[144]. All in all, in addition to the intensity of internal and external labour mobility, a lasting business undertaking is also expected to depend especially on the nature (quality) of the transitions.

8.3. Determinants of individual labour mobility

For the purpose of estimating the different mobility equations, a list has been compiled of several important determinants of the intention to quit and actual labour mobility of employees from the research literature. These mobility-influencing factors can be largely

---

[144] From the point of view of the organization, voluntary turnover is traditionally connected primarily with the costs related to external labour mobility (e.g. costs of recruitment and training of new personnel and employed HRM personnel). In this context, therefore, the negative consequences of employee turnover are often emphasised. Dalton and Todor (1979) are two of the first researchers to also show that it is not rare for voluntary external mobility to be linked to the departure of poorly performing workers. In such a case, the organization has the opportunity to fill vacant positions with more productive workers. In contrast to this functional turnover, the departure of strongly performing workers is identified by Dalton and Todor (1979) as being dysfunctional for the organization. Accordingly, not all personnel turnover is equally costly (Porter and Steers (1973, p. 169)). In addition to turnover frequency, the costs are also determined by the quality of the workers who leave compared with those who replace them (turnover functionality). For empirical research into the relationship between work attitudes and the frequency and functionality of employee turnover amongst 112 sales persons in a relatively large department store in the northeast of the United States, Hollenbeck and Williams (1986, p. 608) operationalise the turnover functionality as follows: $T_{funct} = T_{freq} Performance$, where T_{freq} indicates the situation whether the worker in question one year after the processing of the survey (the time when it is carried out is not mentioned) left the organization voluntarily (-1) or stayed (+1). As an indicator for the performance of workers, use is made of standardised monthly sales figures (z-scores) achieved in the three months preceding the survey. Turnover can now be described as functional (positive) if a strong-performing worker remains (perhaps it is better to refer here to functional immobility) and if a less productive employee leaves the organization. Conversely, there is negative functionality if a poorly performing worker stays (dysfunctional immobility) and if a productive employee voluntarily changes employer. Hollenbeck and Williams (1986, p. 609) conclude that through the departure of less-productive workers more than half of the observed employee turnover can be described as functional for the department store. If this functional flow out of work is replaced by new personnel with an average performance level then according to the authors the extra revenue generated easily exceeds the costs of recruiting and training new personnel. Abelson and Baysinger (1984) argue that in distinguishing between functional and dysfunctional turnover it is advisable not only to take account of the performance level and turnover costs, but also costs necessary to keep an employee within the organization, such as a salary increase, promotion or less flexibility for the organization (p. 336). These retention costs may make it functional after all for an organization to let go of a strongly performing worker with an impetus to move elsewhere and to start new recruitment. Or, as Dalton and Todor (1979, p. 226) express: "Mechanisms may be available to reduce turnover but organizations may be hesitant to utilize them. Perhaps the cost incurred to reduce turnover might exceed the cost of turnover itself. There is, for example, a characteristically high rate of turnover among waitresses. Perhaps by raising wages, the organizations could reduce the incidence of turnover. But is this strategy cost effective? It may be far less expensive to cope with turnover than to prevent it".

categorised into worker, job and firm characteristics and market conditions (Hartog, Mekkelholt and Van Ophem (1987), Dekker, De Grip and Heijke (1995), De Graaf and Luijkx (1997) and De Wolff, Luijkx and Kerkhofs (2002)). In this chapter various aspects of the work attitude as regressors in the mobility equations form a significant addition to the aforementioned empirical studies into labour mobility in the Netherlands. These aspects of work attitude relate, for example, to the work organization, direct management, freedom in work, work pace and different forms of physical workload. With this diversity of determinants, one can take account of the different causes for mobility. These causes relate, inter alia, to the distinction between the aspiration, opportunity and necessity for mobility. In the literature, for example, the expectation is often expressed that younger employees in their search for a more fulfilling work experience will relatively often choose to change jobs (aspiration, willingness). The period over which an improvement in position can be profitable is relatively long for these employees. According to the neoclassical body of thought, with this the labour market opportunities will increase as employees have richer human capital (opportunity). According to the SLM theory these probabilities of (some groups) of employees with aspirations and a high capability of mobility can nevertheless be hindered by non-economic barriers (opportunity). Market conditions also influence the opportunity of changing labour market position. On the one hand it can be expected that recession will limit the opportunities to be able to improve one's position via external mobility (opportunity), whilst on the other hand continued economic turbulence will also be a breeding ground for involuntary labour mobility caused, for example, by reorganizations and business shutdown (necessity).

On the basis of the results of the Hospitality Employees Study this section provides a description of the connections identified between the intention to quit and actually mobility of hospitality workers on the one hand and the different determinants on the other hand. In this first mobility exploration the empirical findings are not yet differentiated according to the different labour market segments. Section 8.4 serves in this regard and also expands on the bivariate investigation with a number of regression analyses.

This chapter then focuses on a number of specific forms of individual labour mobility. Firstly, a distinction is made with the situation of immobility, whereby hospitality employees in the period September '2000-2001' have not changed employer. From an economic perspective, with a central role for the concept of rationality, it can be assumed that both mobile and immobile employees will act in a calculating manner and if faced with a choice will choose the option that offers the greatest expected amount of satisfaction (utility). In deciding whether or not to change jobs, then those staying have reached the conclusion that not changing their labour market position is expected to be more profitable than changing. For the group of employees who voluntarily change jobs, the reverse conclusion can be drawn. In the matter of employer mobility in this chapter we particularly consider voluntary external mobility to a job outside the hospitality industry. We are therefore concerned here with all employees who in September 2000 according to the UWV were engaged in the hospitality industry, but who in September 2001 took the initiative to change to a job outside the scope of the Dutch hospitality industry. Various forms of movement out of the sector connected with temporary or permanent leaving the labour

market are thereby not considered. Examples include stopping work to follow a course or to look after children. The present analysis also excludes employees who retire from work or who become disabled. As an indicator for the intention to quit, we identify the group of hospitality employees that in September 2001 is actively looking for work with another employer. Behind the perceived immobility there is therefore concealed a certain element of potential labour mobility. Only where there is a real wish for immobility will mobility aspirations be absent. Finally we consider the situation of function mobility, i.e. a change of job within the organization. Given the opportunities for the UWV data, function mobility is defined as the situation in which the hospitality worker in September 2001 is employed by his current employer for a longer period than in his current position and is therefore not restricted to the period September '2000-2001'. The description of the labour market flows in the Dutch hospitality industry has shown that a clear majority of employees in September 2001 is employed by their current employer for less than a year. For this group of workers (inflow and through-flow) any intraorganizational mobility obviously did occur in the period September '2000-2001'.

8.3.1. Worker characteristics

In the research literature the age of the worker is revealed as an important determinant of intention to quit and external labour mobility. Voluntary external changes in job are particularly regarded as a preserve of the relatively young worker: "Mobility is the domain of the young." (Hartog, Mekkelholt and Van Ophem (1987, p. 23)); see also Porter and Steers (1973, p. 164) and Allaart and Van Ours (2001, p. 13). Especially at the beginning of a career it can be anticipated that the chance of a high quality connection is small. Poor connection between the qualities of labour supply and the job requirements will mostly lead to a change of job. Not only employees will strive for an improvement in the connection quality, but employers will also work towards this. It can also be expected that in the first years of working life in particular employees will try to achieve their individual job goals, since an improvement in the labour market position, including achieving certain ambitions, can produce returns over a relatively long period of employment. As age increases, so this return period becomes automatically shorter. The expectation is that aiming for personal goals in the labour market is significantly linked to external mobility, but improvements in position within the organization are, of course, also possible options here, especially within larger organizations. In the course of a career the connection quality is usually significantly improved, so that older workers, via job satisfaction, are less likely to wish to voluntarily change jobs. Labour mobility will then still occur largely within the organization, for example, to fill certain jobs for which a relatively large amount of relevant work experience is required. Glebbeek (1993) also refers to the increasing significance of internal mobility compared to external job changes as a career progresses. At the beginning of a career, of course, internal job changes are also possible. According to the job competition theory (Thurow (1972); see also chapter 2) the most preferred employees who are placed high in 'the waiting room' are recruited for a career in the internal labour market. As regards the entry job, therefore, underutilization of the qualification level is likely to be observed, but via career training these employees can keep progressing into higher positions such that this underutilization disappears (Dekker, De Grip and Heijke (1995)). A factor cited as a break

on mobility amongst older people by De Graaf and Luijkx (1997) is also the possible role of legal rights built up over time.

In line with the above considerations, search behaviour and employer mobility in the Dutch hospitality industry score above average up to age 30 and thereafter below average (see table 8.3). Of all employees on the payroll, approximately 15 per cent in the period September '2000-2001' changed from a job in the Dutch hospitality industry to a paid job in another industry. This form of job mobility is, at 20 per cent, the most frequent amongst employees in the age group 23-29 years. Thereafter this percentage falls to approximately 10 per cent for employees aged 40 years and over. The decline in rate of external mobility as age increases is also shown by the positive connection with immobility. This is not obvious, since movement within the hospitality industry (through-flow) as an alternative expression of employer mobility is not considered here. Internal job transitions are also relatively the most common in the age category 23-29 years, but also score above average amongst the older groups. The latter observation is partly the result of how internal mobility is defined. In contrast to external mobility, internal job transitions may also have occurred prior to September 2000. The results of the Hospitality Employees Study do not reveal the date of intraorganizational mobility. Since the average period of service of hospitality workers increases in line with age, it can be expected that the probability that the relevant employee has changed his job one or more times within the organization also increases.

In general males have a greater connection with the labour market than females. Despite social developments such as individualisation and emancipation it is still the case that the care of children and household chores occupy more of a woman's time. However, women with small children at home are nowadays more active in the labour market. Conditions can help to stimulate this, such as child day care, but also financial obligations, such as a mortgage. It is anticipated that there is a search here for a definite balance. Although women with small children often continue to participate in the labour market, their working hours are somewhat shortened (Statistics Netherlands (2004)). Due to this more limited connection with the labour market expectations are that employers will invest less in the human capital of the 'female arsenal', since there is a larger risk of turnover of women and insofar as women who give birth wish to remain in the labour market, it is not unusual for schooling investments to be able to provide a return (temporarily) on shorter working hours. Even where relatively young women have no wish for children, then statistical discrimination can imply that the more alluring jobs on the primary labour ladder will still be held open mainly for men. In advance, it cannot be clearly stated the extent to which external labour mobility between males and females will differ from each other. Insofar as women are less focused on improving their position due to less connection with the labour market and, for example, the current employer offers sufficient freedom to be able to adequately combine formal work with personal responsibilities, then there will be an absence of stimuli for mobility. When, however, these freedoms are insufficient, then it can be expected that women will look out for a job that properly enables task combination. It is likely here that women will not feel limited by the confines of the industry they work in. Due to greater stability, there will be relatively more male workers in the primary labour market and partly due to additional training they can be expected to change job within the organization more frequently than

females. Through a greater focus on career then internal and external mobility amongst men is expected to be more often connected with an improvement in the labour market position.

Table 8.3: Worker characteristics and some aspects of (potential) labour mobility in the Dutch hospitality industry, September 2000 – September 2001

	Immobility	Job search	Employer mobility	Internal mobility
Age (%)				
Under 23 years	34.3	18.7	15.3	10.0
23-29 years	49.3	22.5	20.4	19.3
30-39 years	51.5	16.1	12.0	15.6
40+ years	63.4	16.8	9.7	17.8
Gender (%)				
Male	45.0	19.0	14.8	16.7
Female	45.9	18.3	14.8	11.8
Native country (%)				
The Netherlands	45.2	18.6	15.5	14.8
Foreign country	47.3	18.6	9.2	9.4
Family situation (%)				
Without children at home	43.6	20.8	15.7	13.9
With children at home	51.5	11.5	11.9	15.0
Educational level (%)				
Low	41.9	16.5	12.7	10.8
Intermediate	45.7	18.7	14.4	15.0
High	56.2	25.9	22.6	21.9
Job tenure (%)				
≤ 2 years		19.7	13.4	5.5
3-5 years		15.5	21.7	27.4
6-10 years		21.4	17.9	34.3
11+ years		13.8	3.4	43.2
Completed additional training (%)				
Entrepreneurial skills	50.6	19.8	18.9	18.5
Vocational training	53.5	20.8	16.4	20.7
Safety training	54.3	17.7	17.0	22.4
Master course	41.9	17.6	16.5	25.7
Management training	52.7	22.7	19.1	32.0
(Enterprise) internal training	55.0	13.8	14.7	32.5
Administrative courses (hospitality oriented)	55.8	21.2	16.9	34.6
Total	45.5	18.6	14.8	14.1
n	515	211	213	160

Source   : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch
              Board for the Hospitality and Catering Industry (2002b)).
Remarks   : Immobility = employees who in the period September 2000-September 2001 remained with the
              same employer; job search = employees who are currently (September 2001) searching for a job
              with another employer; employer mobility = employees in September 2000 being employed in the
              hospitality industry, but who in September 2001 have switched to another branch of industry;
              internal mobility = employees who are employed at the present employer for a longer time period
              than in the present job position.
            : Educational level: low = LBO, VMBO and MAVO; intermediate = HAVO, VWO, MHS,
              apprentice system and other professional education at an intermediate level; high = HHS, university
              and other high professional education.
            : Additional training: entrepreneurial skills = general entrepreneurial skills, cafe sector, restaurant
              business and the like; vocational training = additional training addressed to aspects such as
              cooking, serving and hygiene (HACCP); safety training = BHV, EHBO, social hygiene and the
              like.
            : n = The number of observations corrected for the under- and overrepresentation in the net sample.

In the Dutch hospitality industry no significant differences are observed between males and females regarding search behaviour and employer mobility (to a job in another industry, see table 8.3). This is also true of the percentage of hospitality workers that did not change employer between September 2000 and September 2001. In line with expectations, the function mobility within the Dutch hospitality industry is significantly greater amongst men than women: 17 per cent of men changed jobs within the present organization compared to 12 per cent of women. This finding is positively linked to the overrepresentation of women on the secondary labour ladder and the strong presence of men in the professional market (see table 3.14).

It can be expected certain immigrant groups to have a relatively weak labour market position, such as the first generation of guest workers. Due to their average level of education and language barriers, for example, these immigrant groups often perform secondary work. External labour mobility will therefore be much less the result of, for example, a voluntary change of jobs to improve position, but rather driven by the instability of secondary labour relations. Expectations are that for other groups of immigrants, including some from the west, the labour market opportunities will not differ significantly from those of the indigenous population.

In the Hospitality Employees Study, 11 per cent of the respondents stated that the Netherlands is not their country of birth. These employees on the payroll can therefore be classified within the group of immigrants (Statistics Netherlands (2004)). Hospitality workers born abroad are relatively strongly represented in the lower tier of the primary labour market, i.e. with a main job in the hospitality industry but with no initial professional education at an intermediate or high level: 64 per cent of this group is positioned on the lower tier primary ladder compared to 33 per cent of workers born in the Netherlands. Less than 5 per cent of hospitality workers born abroad works in the professional market. A majority of workers born abroad is employed in the restaurant sector and for a large part one

expects (as an assisting family member) in ethnic restaurants. Apart from the restaurant sector, employees born abroad are also more than averagely employed in the hotel sector. In the cafe sector and the fast food sector this group of immigrants is relatively underrepresented. On balance, over 40 per cent of hospitality employees born abroad is employed in establishments with fewer than 10 employees, compared to approximately 25 per cent of employees born in the Netherlands. In line with this profile, internal job transitions in the Dutch hospitality industry apply relatively more to employees born in the Netherlands (see table 8.3). A multivariate investigation should reveal whether the worker's country of birth has any independent influence on internal mobility in this, or any other, regard. Immobility and search behaviour are not significantly different between the two groups of workers. However, employees born abroad do search relatively more often for a job with another hospitality employer and less outside the hospitality industry. In line with this search pattern, external mobility to a job outside the hospitality sector amongst employees born in the Netherlands is significantly larger than amongst the relevant group of immigrants. In the above, the country of birth is specifically named as a distinctive criterion, since the group of immigrant employees in the Dutch hospitality industry is actually larger. Persons born in the Netherlands but one or both of whose parents was not, are also traditionally defined as immigrants. These second generation immigrants represent approximately 8 per cent all UWV hospitality employees.

Leaving the family home, cohabitation, marriage and the arrival of children usually means that a larger income is needed to be able to remain on the same step of the welfare ladder (see chapter 3). In this traditional stage in life of rising needs, with greater obligations and responsibilities, it is expected that the need for income security increases. For certain groups of employees, this longing for security can be a reason for a change in mobility behaviour. In the Dutch hospitality industry a clear distinction is observed between the mobility aspirations and actual mobility of employees with children living at home and those without. Employees with children at home are more often immobile and less often in search of another employer, whilst actual external mobility (to a job outside the hospitality industry) is significantly lower than amongst employees without children at home (see table 8.3). This correlation between children living at home and (potential) labour mobility may illustrate the desire for security, since changes in job are often linked to feelings of insecurity. The relatively large degree of immobility may also indicate sufficient freedom to be able to combine paid work with family life.

As well as an indicator for professional skills, the educational level of the (potential) employee will also often be used by the employer as a signal of more general characteristics and skills such as reliability, commitment, intelligence, motivation, perseverance and trainability (Thurow (1972), Arrow (1973) and De Grip (1985)). It can therefore be expected that a higher level of education will generally lead to better labour market opportunities. Table 8.3 shows that mobility aspirations and the external labour mobility achieved (to a job outside the hospitality industry) are both positively linked to the educational level of the employee. In particular, the search behaviour and employer mobility of highly educated employees score above average. These findings may point to the relatively strong labour market position of employees with a high level of education: mobility aspirations can be

relatively simply implemented through a high mobility capacity (Hartog, Mekkelholt and Van Ophem (1987, pp. 83-84)). Internal job transitions in the Dutch hospitality industry also correlate positively with the educational level and this correlation may well be one of the reasons why immobility amongst the highly educated also is relatively the highest. If a better position is experienced through internal mobility then it is likely that job satisfaction will eliminate any aspiration for mobility, notwithstanding a high level of mobility capacity. De Graaf and Luijkx (1997, p. 25) distinguish four types of improvement in position: higher job level, greater occupational prestige, better hourly pay and obtaining a permanent appointment. Although for many employees these changes in position will probably contribute to greater job allure, it is argued in chapter 3 that determining this allure is primarily up to the worker himself, rather than the employer, researcher or policy maker, since job wealth is a state of mind, multidimensionally determined by the whole range of monetary and other working conditions. Secondary labour may itself stimulate job allure if, for example, variable working hours, freedom regarding the work roster and relatively simple labour (with limited mental workload) enable a good combination between a position in the labour market with a personal life. This work situation is expected to apply to a significant proportion of young people and women with a secondary job in the Dutch hospitality industry.

The line of thought whereby the human capital of employees is the primary determinant for the position on the labour ladder can be described as neoclassical. By contrast, the SLM theory emphasises the demand side of the labour market as directional for the allocation of labour. In particular, the segmentation theory assumes the presence of non-economic barriers, by which some groups of employees with sufficient human capital and the ambition to climb higher up the labour ladder are not given that chance. A high mobility capacity does not therefore make a silencing of the desire for a better position possible. It creates an underutilization of the qualification level. In the primary labour market it is expected that the influence of human capital on labour mobility is more systematic than in the secondary segment. The empirical plausibility of this hypothesis is tested in section 8.4.

In general, it can be supposed that the longer an employee works in the same organization the greater the overall job satisfaction, because of a better connection quality or, for example, the element of adaptation, i.e. a relatively long period with the same employer may also result from perceived limited opportunities to improve ones position through external mobility. An intention to quit is therefore adapted according to mobility capacity and dissatisfaction will change into an evaluation of job satisfaction: "If people fail to adapt their situation to their wishes, they adapt their wishes to their situation.", (De Graaf and Luijkx (1997, p. 18)). Limited opportunities to improve ones position via the external labour market may be due, for example, to the usability of the human capital stock. It is important to distinguish here between general and firm specific knowledge and skills (Becker (1962), see also chapter 5 and 6). In long periods of service it can be expected that the relative significance of firm specific capital increases. Longer periods of service are therefore expected to be positively connected with the probability of internal mobility. If older employees in particular have considerable firm specific proficiency and have been given less further training in general skills, then it is conceivable that employees increasingly feel that

they are imprisoned within their current job. Any aspirations will be adapted to these opportunities for the usability of the human capital and if employees at a given time are asked about job satisfaction then expectations are that overall job contentment will often be empirically identified: "The relevant mental processes have already occurred in the past. It is not nice to be dissatisfied, so most people are satisfied, whatever their situation otherwise.", (De Graaf and Luijkx (1997, p. 18)). With regard to the relationship between length of service and voluntary external mobility, also parallel influences of the age of the worker can be distinguished. Expectations are, for example, that higher age groups in relatively long periods of service are less likely to want to change jobs. Taken together, we expect a negative connection between the length of service and voluntary external change of jobs.

In accordance with the above thoughts, search behaviour and employer mobility especially amongst employees with a length of service of over 10 years score below average (see table 8.3). In September 2001, approximately 14 per cent of all hospitality workers with a long period of service (11+ years) is searching for a job outside the present organization and 3 per cent changed jobs for a job in another industry. For shorter periods of service, these percentages are (significantly) greater. Furthermore, a clear and positive connection is observed between the length of service and intraorganizational mobility. This is a logical consequence of the definition of internal labour mobility, but the perceived connection is also stimulated by to the extent that the length of service is a measurement of the significance of the firm specific capital of the employee.

To end this section, we focus on the expected relationship between additional training and labour mobility. Here too the distinction between general and firm specific training plays an important role, since the link between additional training on the one hand and search behaviour, internal and external labour mobility on the other hand is dependent on the type of post schooling. Expectations are that (substantial) firm specific training increases the probability of internal mobility and reduces the probability of search behaviour and external mobility. Conversely, it is expected that general training will provide a better chance of internal mobility as well as stimulate search behaviour and external mobility (see also Gelderblom, De Koning and Van Winden (1998) and De Wolff, Luijkx and Kerkhofs (2002); see also chapter 6). Of the various hospitality courses identified in the Hospitality Employees Study (see table 8.3) only internal training appears to be describable as more firm specific. The other (clusters of) courses are expected to have a more general character leading to knowledge and skills with a relatively large degree of usability in the hospitality industry. However, a precise distinction between the two forms of additional training is not possible (see also Dekker, De Grip and Heijke (1995) and Theeuwes (1995)).

In the present research respondents were presented with the appropriate list of courses and asked to indicate which they had completed. When the relevant investments in additional training were completed is unknown. Additional training can therefore be initiated and completed whilst working for a former, rather than current, employer. Given the sizeable external labour market flows in the Dutch hospitality industry, this appears to be a not uncommon situation. In view of the relative youthfulness of the employment structure in the Dutch hospitality industry (65 per cent is under the age of 30, see table 3.14) it can well be

expected that for many employees any additional training completed will stay still 'fresh in the mind', and be acquired by the current employer. The link between identified schooling investments on the one hand and search behaviour and actual labour mobility on the other hand is therefore not necessarily weak. Given the question as presented, it can be supposed that internal training in particular was completed while working with the current (in the case of those externally mobile – last) employer. In relation to internal labour mobility the additional problem of sequence also arises, since it is also not known when job transitions within an organization took place. Insofar as additional training is taking place with the current employer, employees may have changed job internally after completion of the course(s) in question, although it is also possible that the additional training is undergone after the internal transition. Aside from the fact that certain additional training investment increases the probability of a job transition within the organization, internal mobility can also be linked with the need for additional training in order to be able to adequately perform in the new job (Gelderblom, De Koning and Van Winden (1998) and De Wolff, Luijkx and Kerkhofs (2002), see also chapter 6).

Compared to the other courses geared to the hospitality industry, search behaviour and employer mobility score below average especially regarding internal training (see table 8.3). This finding supports the expectation that internal training is mainly firm specific and that the other courses identified have a larger degree of usability within the industry. As indicated, it can be expected internal courses in particular to relate to training with the current employer. Internal training has a greater than average connection with internal job transitions and (accordingly) immobility. These findings concerning search behaviour and the various types of mobility can point to internal training as an instrument for increasing ties to the organization. This impression fits with the finding that internal training is more geared to employees on the primary labour ladder than to employees in the secondary segment. In line with the SLM expectations, in respect of all the various courses geared to the hospitality sector the intensity of the additional training investment increases as the employees are positioned higher on the labour ladder (see table 6.1). Furthermore, the identified link between search behaviour and possession of employer skills, additional vocational training, formal management qualities and sector-focused administrative training may point to the general applicability of the additionally acquired knowledge and skills. This usability promotes mobility capacity. In line with the industry focus of additional training, employer mobility to a job outside the Dutch hospitality industry scores lower in the case of professional and administrative courses than the possession of employer skills and certified management qualities.

8.3.2. Job and firm characteristics

Due to the nature of the contract of employment, expectations are that employees with a temporary appointment are at a given point more often identified as searching than employees with a permanent contract of employment. For employers, temporary jobs particularly serve to strengthen the numerical manoeuvrability of the organization. Accordingly, employees with a temporary contract will have a smaller probability of an

internal job transition than employees with a permanent appointment. This expectation applies especially to upward internal mobility (see also De Graaf and Luijkx (1997)).

In the Dutch hospitality industry temporary jobs can be more than averagely associated with the secondary labour market and permanent appointments with the primary labour ladder (see table 3.11). In line with expectations search behaviour and employer mobility amongst employees with a temporary contract of employment score above average, and immobility and mobility within the organization are considerably smaller than amongst permanent employees (see table 8.4).

The extent to which part-time employees have greater or fewer mobility aspirations and are more or less externally mobile than employees with a full-time job is not clear on the face of it. Insofar as a person looks for a part-time job, for example, to be able to combine a place in the labour market with tasks in private life, then it is expected that incentives for mobility will be absent (ceteris paribus). When, however, this wish for such a combination cannot be adequately satisfied with the current job, then expectations are that the employee will look out for a more suitable part-time job. We expect that a situation of voluntary part-time work is often linked to the role of a partner in the household whereby the worker is not the primary income earner. Due to this more limited obligation, the desire for (job) security is possibly less and mobility aspirations will be developed more quickly than in the case of someone responsible as the main income earner. Parallel influences of the gender of the worker will play a role here. From the point of view of the employer, it can be expected that the labour relationship with the part-time worker will be generally less stable (caring) than with full-time employees. Like temporary appointments, small jobs and flexible working hours primarily serve the quantitative flexibility of the organization (see chapter 6). This goal, however, is not always applicable. Part-time jobs can be offered in the primary labour market not so much with an eye to flexibility, but rather to retain a valued core employee who has a wish to work part-time in the organization (Tilly (1991) and Dekker, De Grip and Heijke (1995)). With regard to internal mobility, we expect that part-time employees will change jobs less often within an organization than full-time employees. Again, this expectation applies chiefly to upward mobility, since substantial (firm-specific) training is especially required for a job improvement within the organization and given shorter working hours in which additional training investments can make a return, expectations are that part-time employees will take less part in additional training than full-time employees.

Small part-time jobs in the Dutch hospitality industry (including variable working hours) can be mostly linked with the secondary labour market and bigger jobs with the primary labour ladder (see table 3.11). In line with this division, internal job transitions amongst employees with a small job are relatively less prevalent than amongst employees with a bigger job. This finding also fits in with the training picture identified, in which part-time hospitality workers participate less often in additional training than employees with a full-time appointment (see table 3.16).

Table 8.4: Job/firm characteristics and some aspects of (potential) labour mobility in the Dutch hospitality industry, September 2000 – September 2001

	Immobility	Job search	Employer mobility	Internal mobility
Contract of employment (%)				
Temporary	36.4	20.3	15.9	9.5
Permanent	52.0	17.4	14.1	17.6
Contractual working hours per week (%)				
Small part-time	41.9	16.5	13.9	8.6
Large part-time	54.2	21.4	17.3	17.1
Full-time	44.9	20.2	14.4	21.7
Job level (%)				
Operative	43.7	17.7	14.7	8.6
Executive	52.6	22.2	15.2	35.7
Firm size (%)				
1-9 employees	48.5	15.9	15.4	8.3
10-19 employees	39.7	16.9	15.2	11.0
20-49 employees	44.6	22.6	15.7	17.0
50+ employees	48.4	19.3	13.1	20.7
Business group (%)				
Cafe sector	53.1	12.6	23.8	10.0
Fast food sector	40.5	18.3	20.9	11.0
Restaurant sector	43.5	20.8	17.0	14.9
Hotel sector	45.2	22.3	24.7	21.7
Department (%)				
Kitchen	45.9	20.8	8.9	18.8
Service	44.1	18.5	16.1	9.3
Other departments	48.7	16.1	18.7	21.2
Total	45.5	18.6	14.8	14.1
n	515	211	213	160

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : Immobility = employees who in the period September 2000-September 2001 remained with the same employer; job search = employees who are currently (September 2001) searching for a job with another employer; employer mobility = employees in September 2000 being employed in the hospitality industry, but who in September 2001 have switched to another branch of industry; internal mobility = employees who are employed at the present employer for a longer time period than in the present job position.

: A permanent appointment is inclusive of temporary employment with the commitment of a permanent contract.

: Small part-time work = flexible working hours or contractually for at most 11 hours per week; large part-time work = 12-37 hours per week; full-time work = 38+ hours per week.

: Other departments = reception, housekeeping, general service, management and the like.

: The mobility figures differentiated by business group are based upon the perception of workers concerning the business group being employed in. Therefore, in some cases the worker takes the view being employed in the catering industry or recreational sector, while according to the UWV the particular worker is employed within the boundaries of the traditional hospitality industry (see table 3.2). This situation explains the employer mobility in all hospitality business groups being above average. In the recreational sector (not representative), for example, the employer mobility is computed to be 10.6 per cent.

: n = The number of observations corrected for the under- and overrepresentation in the net sample.

Despite a certain connection, employees with a small job are relatively less often in search of a job with another employer and are less externally mobile (to a job outside the industry) than employees with a temporary contract. As well as being a logical consequence of the nature of the contract of employment, this observation can also point to good opportunities for employees with small jobs to combine work and private life. Employees with a bigger job tend to search more and be externally mobile. The finding that those with a full-time job are less likely to change to a job outside the Dutch hospitality industry than those with a big part-time job is possibly related to the relatively strong representation of professional employees with a full-time job. Employees in the professional market are likely to have a relatively strong connection with the hospitality industry and their search behaviour will therefore be probably largely focused on other jobs within the industry. The UWV data support this expectation: the search behaviour of a sizeable majority of employees with a full-time job relates to the search for another position within the hospitality industry.

Executives will be more than average employed in the primary labour market and operatives in the secondary segment. In line with the amount of initial and additional human capital, it is expected that employees with an executive position have (had) a greater opportunity for internal mobility than employees in operative positions. This expectation relates particularly to career opportunities within the organization. Due to the positive link between human capital and job level, executives will generally also be more often able to secure a better job in the external labour market. In operative jobs, internal and external labour mobility will more than averagely involve a horizontal change in position.

In line with the above observations, internal mobility amongst executives in the Dutch hospitality industry is significantly greater than amongst employees with an operative function: 9 per cent of the latter has changed jobs one or more times within the organization compared to 36 per cent of the former (see table 8.4). This difference can possibly be partly explained by the present definition of internal mobility. Internal job transitions are not limited to the period September '2000-2001'. For employees now identified as executives who entered employment at a lower job level (possibly before September 2000) the probability of internal mobility is therefore relatively high. If we were to define internal mobility as internal job transitions in the period September 2000 – September 2001, then it is conceivable that workers with a high job level are actually less internally mobile due to

ceiling effects. This expectation therefore mainly pertains to upward mobility (see also De Graaf and Luijkx (1997)). The findings also illustrate that executives in the Dutch hospitality industry are relatively more immobile, more often in search of a job with another employer and slightly more often move to jobs outside the hospitality industry than employees with an operative function. This difference in immobility can possibly be explained by, on the one hand, greater job satisfaction amongst executive workers (for example by obtaining a better position through an internal job transition) and, on the other hand, through greater instability in the labour relationship amongst operatives (for example due to greater emphasis on temporary appointments).

The literature often expresses the expectation that firm size contributes positively to the probability of internal mobility and negatively to the probability of voluntary external mobility (Hartog, Mekkelholt and Van Ophem (1987), Glebbeek (1993), De Graaf and Luijkx (1997) and De Wolff, Luijkx and Kerkhofs (2002)). This expectation is prompted by the link between firm size and the presence of internal labour markets. In radical economic theory a principal role is attributed to firm size as determinant to distinguish between the primary and secondary labour market (see chapter 2). The primary labour market is then particularly associated with the larger-scaled firms in which the job structure has sufficient scope to create an internal labour market. Employees in the internal labour market find no competition from employees in the external labour market and with substantial firm-specific training are able to climb the promotion ladder (see also De Grip (1985)). Applying this theory, the secondary labour market with the less alluring jobs is linked largely to the relatively small (labour intensive) firms. Expectations are that firm-specific training and prospects for improvement in position within the organization will increase ties with the firm amongst employees in the internal labour market such that voluntary external mobility will decrease.

In line with expectations, the internal labour mobility in the Dutch hospitality industry has a positive correlation with firm size (see table 8.4). In hospitality firms with fewer than 10 employees on the payroll, 8 per cent of employees has changed jobs within the organization one or more times compared to 21 per cent of employees in firms with 50+ workers. Where there are 10 employees or more on the payroll, immobility also correlates positively with firm size. In small hospitality businesses, however, immobility is relatively the same as in the largest organizations. Hartog, Mekkelholt and Van Ophem (1987) refer here to the possible "close personal relationships in small firms" (p. 41) which strengthen ties with the organization. In smaller hospitality firms employees search for a job with another employer less frequently than employees in larger firms. This finding can also be a pointer to a relatively large degree of commitment in small hospitality firms that is therefore less probably linked to observed internal mobility. All in all, it is not possible to identify a clear distinction between more alluring and less alluring jobs in the Dutch hospitality industry on the basis of firm size, at least not on the basis of the mobility figures in table 8.4. In this context there is reference in chapter 2 to the greater degree of reality ascribable to the dual labour market perspective, in which primary and secondary jobs can both be identified in one establishment, than to the institutional segmentation approach.

The empirical investigation in chapter 6 into flexibility practices in the different business groups in the Dutch hospitality industry has revealed that additional training as a tool to stimulate the content flexibility of the organization is used most in the hotel sector (see table 6.2). This applies in particular to management courses and internal training. In September 2001, 17 per cent of all hotel employees on the payroll commands formal management qualities and 16 per cent has completed at least one internal training course. The figure is approximately 5 per cent in either case for the other business groups. Confirming this, internal mobility in the hotel sector scores by far the highest (see table 8.4). Firm size will also play a role here. As noted, in larger organizations the job structure will be more extensive than in smaller firms, so that in general there are more opportunities to change job within the organization. In September 2001, compared to the other business groups firm size in the hotel sector is largest by far, scoring an average of 21 workers on the payroll per establishment. Given the more equal intensity of additional training in the restaurant sector and the cafe sector (see table 6.2) it is perhaps more the difference in the average firm size that can explain the relatively greater intraorganizational mobility in the restaurant sector: averagely 5 employees per establishment in the cafe sector compared to 14 employees in the restaurant sector. In the fast food sector, investments in additional training are the smallest and the average firm size of 7 employees per establishment can also be considered relatively small. As for immobility, the business group picture is in harmony with the findings concerning firm size. Again the exception is observed in the (usually) smallest firms: in the cafe sector immobility scores relatively highest and search behaviour lowest. Notwithstanding the possible evidence of a relatively large connection of employees with the organization in the cafe sector this observation is striking, since here more than in the other business groups there is a heavy emphasis on temporary appointments (see table 6.9). Search behaviour and employer mobility (to a job outside the hospitality industry) score above average especially in the hotel sector: 22 per cent of hotel employees is currently in search of a job with another employer and (as much as) 25 per cent has changed jobs from the hospitality industry to another branch of industry. These findings may point to the relatively strong labour market position of hotel employees. The relatively strong representation of hotel employees in the professional market leads us to expect a strong connection with the hospitality industry. In case of external mobility, due to a professional certification at an intermediate or high level it is therefore expected to identify considerable movement within the industry. However, the general human capital of many hotel employees, not uncommonly with management qualities and employer skills (see table 6.2), does also support the perceived job mobility across the border of the Dutch hospitality industry. The cafe sector and the fast food sector can be more than averagely associated with the secondary labour market: in both business groups approximately 60 per cent of the employees has a secondary job. In the hotel sector this is just half (see table 3.8). Therefore, employer mobility in the cafe sector and the fast food sector to jobs outside the hospitality industry can possibly be connected in particular with a new secondary job in another branch of industry or the transition to a 'real' job after completing studies and has less to do with a better position through general human capital at an intermediate or high level as in the hotel sector.

The kitchen and service in the Dutch hospitality industry are the most important departments with regard to employment. The kitchen can be more than averagely associated with the primary labour market, particularly the professional market, and service with the secondary labour ladder (see table 3.9). In accordance with this dichotomy, internal job transitions are more frequent in the kitchen than in service: 19 per cent of kitchen employees has changed jobs within the organization at least once compared to 9 per cent in service (see table 8.4). Within the 'other departments', internal labour mobility is the greatest, likely to relate to reception and management both being part of this remaining category. Here too there will be parallel influences from the firm size. Kitchen employees are more than averagely in search of a job with a different employer, but employer mobility to a job outside the Dutch hospitality industry lags behind the other departments. This finding ties in with the relatively strong representation of employees in the kitchen who have a professional qualification at an intermediate or high level. Not surprisingly this relates mostly to cooks, (sous) chefs and kitchen managers. The professional qualification of these employees will be of substantial usability within the hospitality industry. Kitchen employees searching for a different employer are more than averagely in search of a new position within the industry. Obviously, it is also perfectly plausible for these employees to have industry-wide employer mobility including, for example, movement to the catering industry.

8.3.3. Job satisfaction and working conditions

There is extensive literature on the relationship between job satisfaction and voluntary leaving the organization. In general, overall job satisfaction is regarded as a predictor of voluntary employee turnover. In this context, various bivariate empirical investigations support the expectation of a negative link (see, for example, reviews in Porter and Steers (1973) and Rosse and Noel (1996)). This finding also applies to the Dutch hospitality industry in September 2001 (see table 8.5). Generally, a greater pressure on overall job satisfaction correlates negatively with immobility and positively with search behaviour and voluntary employer mobility. For those immobile and job seekers, this job satisfaction relates to the current job (in September 2001) and for employees who have taken a job in another branch of industry to satisfaction with the last job in the hospitality industry. Despite the significance of the observed correlations, also scope for nuancing is identified. For a section of the employees, overall job satisfaction identified as *good* is (still) linked to search behaviour and employer mobility. Similarly, dissatisfaction with ones current job amongst a part of hospitality employees is linked with immobility and the absence of search behaviour.

Surveys of the empirical literature reveal frequent reference to a significant but moderate link between overall job satisfaction and voluntary turnover (see, for example, Locke (1976), Mobley (1977) and Rosse and Noel (1996)). Various explanations can be given for this. Employees may, for example, voluntarily leave the organization for reasons unconnected to the current work situation. In addition to (temporary) absence from the labour market to take up studies, care for someone or, for example, due to 'following ones partner (spouse)', in this framework one can also think of alternative job opportunities in the external labour market that are generally evaluated by the worker as (even) better than the

current work situation. In these examples, the worker is pulled out of the organization, so to say, without any internal impetus for external mobility (push).

Table 8.5: Overall job satisfaction and some aspects of (potential) labour mobility in the Dutch hospitality industry, September 2000 – September 2001

	Immobility	Job search	Employer mobility
Overall job satisfaction (%)			
Good	48.8	11.0	9.9
Fair	44.4	25.1	15.5
Moderate	38.1	29.8	24.2
Bad	29.4	34.6	30.4
Total	45.5	18.6	14.8
n	515	211	213

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : Immobility = employees who in the period September 2000-September 2001 remained with the same employer; job search = employees who are currently (September 2001) searching for a job with another employer; employer mobility = employees in September 2000 being employed in the hospitality industry, but who in September 2001 have switched to another branch of industry.

: Overall job satisfaction = *All in all, are you currently taking the view to be well, fairly, moderately or not well off with your work?*

: n = The number of observations corrected for the under- and overrepresentation in the net sample.

The organization literature also carefully examines the various aspects of the personality of the worker as a possible determinant of external mobility. Porter and Steers (1973) hypothesize, for example, that employees with extreme personality traits are more inclined to quit than employees with a more moderate personality[145]. Over two decades later Rosse and Noel (1996) conclude, however, that there is still little empirical evidence for this 'polar' hypothesis (p. 471). In the context of personality characteristics there is also often reference to the inclination of some employees to change jobs regularly, not so much because of the current work situation but more to be able to acquire different work experiences. These employees are also referred to in the literature as 'job hoppers' (Bernardin (1977)) or 'hobos' (Ghiselli (1974) and Hulin, Roznowski and Hachiya

---

[145] "…a tendency appears to emerge for those employees who leave the organization to manifest characteristics near polar positions at either end of various personality trait continua. For example, those who are fairly unstable emotionally or exhibit high anxiety tend to withdraw. Similarly, employees demonstrating a very high degree of independence, self-confidence, and aggressiveness, as well as those with very high career aspirations, also appear to leave more often. It can be hypothesized from these limited findings that organizations tend to retain as more permanent employees those clustering nearer the center of such continua.", (p. 167).

(1985))[146]. Expectations are that this 'openness to experience' (Rosse and Noel (1996, p. 472)) correlates negatively with the age of the worker. Generally, the older the age, the greater the obligations and responsibilities and the shorter the remaining period of employment and accordingly a shorter period for return. Therefore, it can be presumed that the inclination amongst these restless employees to regularly change jobs will be put under somewhat more pressure.

As an explanation for a limited correlation between job satisfaction and employee turnover, the literature also considers that external mobility is only one possible behavioural response to a dissatisfying work situation. In their model, Rosse and Miller (1984) generally refer to *adaptation* by the worker in response to relative dissatisfaction. Alternative behaviour in the event of (sufficient) job dissatisfaction can, for example, be grouped into types of physical withdrawal decisions such as absenteeism, poor timekeeping and quitting the current employment, as well as responses that can be described as more psychological, such as shirking, daydreaming, lounging around and taking long breaks (Rosse and Noel (1996, p. 454)). Farrell (1983) identifies four response categories amongst dissatisfied employees: exit, voice, loyalty and neglect[147]. According to this model, these behavioural options can be empirically summarised in two dimensions: active/passive and constructive/destructive. Absenteeism as a way of avoiding problems at work (neglect) can be regarded as passive and destructive, whilst discussions with an immediate supervisor to try and solve the alleged work problem (voice) are active and constructive. In the current SLM setting and applying Farrell's model, we can hypothesise that secondary employees in the Dutch hospitality industry will mainly apply exit in the case of job dissatisfaction, especially by leaving their current employer, and neglect as forms of adaptation, since they have fewer ties to the work and the organization than primary employees and we expect them to be generally regarded by the employer as 'less valued'. In this context, loyalty and voice as behaviour alternatives appear to be more the responses of employees in the primary labour market segment. However, it is perfectly possible to imagine, for example, the endurance of a dissatisfying work situation in the secondary labour market too, since secondary labour in the Dutch hospitality industry can be largely regarded as *temporary* secondary jobs, especially for

---

[146] "They do not quit a job because of low satisfaction and a presence of other jobs; they quit because they want to see what the next town or organization has to offer.", (Hulin, Roznowski and Hachiya (p. 245)). Also referred to as the 'Hobo Tendency' in Ghiselli (1974). See also Maertz (2004): "Curiosity and preference for variety or newness may lead to the endorsement of a 'change is good' value. This could extend to the realm of changing jobs (e.g., Ghiselli, 1974). In other words, openness could lead to adoption of an instrumental value that changing jobs frequently is good, based on an end value of variety and accumulation of experience.", (p. 118).

[147] Exit refers to the worker's decision to escape from the dissatisfying job by looking for another position within the present organization or, for example, by voluntary leaving the organization. Voice points to the worker's attempts to change the undesirable work situation into satisfying levels, for example, by talking to direct management and trying to repair the unfavourable state of affairs. Loyalty is characterized by (temporarily) suffering dissatisfying working conditions in hopes that things will soon improve. Finally, in response to job dissatisfaction, neglect refers to "lax and disregardful behavior" (Farrell (1983, p. 598)). Neglect responses include tardiness, absenteeism and increased errors.

teenagers at school and students. In theory the various adaptation options in response to job dissatisfaction appear available for all employees, but any specific response is encouraged by conditions such as commitment to the organization, personality, social values and previous experiences (Rosse and Noel (1996, p. 488)). From the organization's perspective, knowledge of the behaviour of dissatisfied employees is important. If the running of the organization is put under strong pressure (e.g. due to falling consumer demand), then certain destructive work attitudes such as absenteeism, carelessness and "malicious gossip" (Rosse and Noel (1996, p. 454)) can create a negative spiral putting the continuation of the business undertaking under even greater pressure.

The present analysis of the relationship between overall job satisfaction and employee turnover serves primarily to put into perspective the empirical investigation into labour mobility covered in this chapter and to thereby better interpret certain limitations. These limitations refer, inter alia, to the exclusion of pull factors and individual psychological factors (including personality). Furthermore, the "possible intermediate steps in the withdrawal decision process" (Mobley (1977, p. 237)) cannot be (fully) elucidated using the results of the Hospitality Employees Study. From a worker it can only be established, for example, whether or not his position in the Dutch hospitality industry in September 2001 is voluntary exchanged for a job in another industry. The degree to which the relevant decision-making process of the employee may be considered rational or impulsive[148] cannot be determined on the basis of the UWV data.

Although *overall* job satisfaction is traditionally regarded as an important driving force in the decision-making process of employees regarding whether or not to change job, the determinants of this satisfaction remain as yet unspecified. The literature also pays close attention to the antecedents of overall job satisfaction (see, for example, March and Simon (1958), Porter and Steers (1973), Hom and Griffeth (1995) and Price (2004)). In line with the body of thought of March and Simon (1958), overall job satisfaction is regarded as a function of fortunes and outgoings of organizational participation, where the outgoings (job contributions) of a worker refer to matters such as contribution of time, knowledge, skills and experience. In addition, foregone alternatives in the external labour market for the benefit of allegiance to the current organization (opportunity costs) may be regarded as indirect costs of organizational participation. In exchange for these various contributions, the organization provides the worker with different incentives (job inducements), in the form, for example, of salary, fringe benefits, job security, status, freedoms in work, prospects for promotion and other (non-)monetary terms of employment. The higher the inducement-contribution ratio experienced, the higher the overall job satisfaction and accordingly the

---

[148] Referring to the theoretical turnover model of Hom and Griffeth (1995), Rosse and Noel (1996, p. 455) write "Their model, …, suggests two parallel paths by which individuals may leave an organization. One is a traditional "analytical" route, in which withdrawal cognitions cause employees to explore options and compare them to the utility of their present job; the results of this analysis may lead to either exiting the organization or reconsidering the options, including trying to increase the utility of the present job. The other path, which leads directly from withdrawal cognitions to turnover, was included to account for more impulsive turnover decisions."

lower the *desirability of movement*. In addition to the desirability of leaving the organization, March and Simon (1958) argue that *ease of movement* also determines the final decision. In this framework the economy is mentioned as an important indicator of the perceived ease with which a worker can leave the organization (see section 8.3.4). In the Porter and Steers model (1973), the concept of *met expectations*[149] plays a central role in determining the degree of (dis)satisfaction with current work. The more that various aspects of the job and organization meet initial expectations, the higher the job satisfaction and accordingly the smaller the probability of turnover. According to Porter and Steers (1973), the different predictors of external labour mobility can be grouped into organizational conditions (e.g. size of the organization, salary and policy on promotion), factors in the immediate workplace (e.g. relationship with immediate supervisor and colleagues), job-content factors (e.g. independence, clarity as to role and variety of tasks) and worker characteristics (e.g. age, personality traits and home situation). Hom and Griffeth (1995) and Price (2004) also consider a large diversity of antecedents of overall job satisfaction, along with a consideration of the concept of *met expectations*.

In the context of the present investigation into labour mobility, it is important to observe that academic studies into important indicators of (overall) job satisfaction recognise and empirically support the influence of particular work attitudes[150] on the various steps in the *withdrawal process*. Within the Dutch hospitality industry also aspects of the workload can be identified that relate significantly to, for example, search behaviour and employer mobility (see table 8.6). All the different work attitudes that score positively (negatively)[151] correlate negatively (positively) with search behaviour and employer mobility. With regard to mental workload, in particular the positive perception that the management gives sufficient attention to career development (*Management and career training*) relates negatively to search behaviour and employee turnover. Conversely, frequent irritation with others at work (*Annoyed about colleagues*) correlates positively with search behaviour, whilst frequent work obstruction due to the *Absence of colleagues* relates positively to

---

[149] "The concept of met expectations may be viewed as the discrepancy between what a person encounters on this job in the way of positive and negative experiences and what he expected to encounter. Thus, since different employees can have quite different expectations with respect to payoffs or rewards in a given organizational or work organization, it would not be anticipated that a given variable (e.g. high pay, unfriendly work colleagues, etc.) would have a uniform impact on withdrawal decisions. We would predict, however, that when an individual's expectations – whatever they are – are not substantially met, his propensity to withdraw would increase.", (Porter and Steers (1973, p. 152)).

[150] As indicated in the introduction to this chapter, the term 'work attitude' is aimed in particular at the 'milder' job characteristics, with reference to the various forms of experienced physical and mental workload (see also chapter 5).

[151] Depending on the phrasing of the question, an affirmative answer regarding an aspect of work attitude sometimes points to an attractive feature of the job (e.g. *Do you have influence on the composition of the work schedule?*) and sometimes to a less alluring working condition (e.g. *During work do you often have to lift very heavy weights over 25 kilograms?*).

voluntary leaving the organization. With regard to physical workload, in particular the perception that during work one frequently has to lift very heavy weights over 25 kilograms has a positive connection with search behaviour and external mobility, followed (by some distance) by the perception of often having to work in an uncomfortable position. A number of work attitudes in table 8.6 are associated with concepts contained in the Porter-Steers model and, for example, the Price-Mueller model (see, for example, Porter and Steers (1973), Hom and Griffeth (1995) and Price (2004)). Examples include the job aspects *Work responsibility* and *Same movements,* which relate to the concepts 'Role clarity' and 'Task repetitiveness' respectively in the Porter-Steers model, whilst in the Price-Mueller model these aspects are analogous to 'Instrumental communication' and 'Routinization' respectively.

Table 8.6: Workload and some aspects of (potential) labour mobility in the Dutch hospitality industry, September 2000 – September 2001

	Immobility	Job search	Employer mobility
Mental workload			
Work responsibility	45.5	16.6	13.8
Management and style	44.4	15.5	12.7
Management and paying attention	46.0	14.0	12.9
Management and career training	44.5	12.9	10.4
Pressure of time	45.1	21.1	17.2
Absence of colleagues	52.8	24.2	21.2
Annoyed about colleagues	44.5	25.5	18.7
Pausing in work	46.6	15.0	13.8
Adjusting speed of work	47.2	15.8	12.9
Influence work schedule	46.7	16.9	14.4
Physical workload			
Lifting weights over 5 kilograms	47.4	21.1	16.0
Lifting weights over 25 kilograms	47.1	28.3	21.9
Uncomfortable working position	46.7	23.3	21.6
Same movements	44.5	19.5	15.2
Total	45.5	18.6	14.8
n	515	211	213

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : Immobility = employees who in the period September 2000-September 2001 remained with the same employer; job search = employees who are currently (September 2001) searching for a job with another employer; employer mobility = employees in September 2000 being employed in the hospitality industry, but who in September 2001 have switched to another branch of industry.

: The exact wording is as follows: work responsibility = *In your work is it always apparent to you for which you are (not) responsible for?*; management and style = *Do you experience good direct leadership?*; management and paying attention = *Does direct management sufficiently take into consideration what you are saying?*; management and career training = *Is management doing sufficiently within the scope of your career?*; pressure of time = *Do you regularly work against the clock?*; absence of colleagues = *Is your work frequently hindered by the absence of colleagues?*; annoyed about colleagues = *Do you at work frequently get annoyed about others?*; pausing in work = *If you think it is necessary, can you pause in your work?*; adjusting speed of work = *Are you able to adjust the speed of work?*; influence work schedule = *Do you have influence on the composition of the work schedule?*; lifting weights over 5 (25) kilograms = *During work do you often have to lift (very) heavy weights over 5 (25) kilograms?*; uncomfortable working position = *During work do you often have to work in uncomfortable positions?*; same movements = *During work do you often have to make the same movements with your arm, hand or fingers?* The percentages refer to the share of workers having answered the particular questions affirmatively.

: n = The number of observations corrected for the under- and overrepresentation in the net sample.

For the purpose of empirically determining the influence of the various work attitudes on overall job satisfaction, search behaviour and employer mobility in the Dutch hospitality industry, in a multivariate setting (section 8.4) use will be made of the results of the factor analyses in chapter 5. In this framework, the various indicators for physical and mental workload are summarised in a limited number of independent and interpretable principal components and corresponding estimated factor scores[152].

8.3.4. Market conditions

The literature also pays special attention to the relationship between the economy and labour mobility (see, for example, Hartog, Mekkelholt and Van Ophem (1987), De Graaf and Luijkx (1997) and Allaart and Van Ours (2001)). In this context the mobility aspirations of employees and ease of mobility are related in particular to the situation in the labour market. After a period of favourable economic conditions in the Netherlands in the second half of the nineties, during the course of 2000 a period of economic reversal is marked. This downward movement in the Dutch economy in the first years of the 21st century has worsened the situation in the labour market, resulting in fewer vacancies, less employment and more bankruptcies and a corresponding strong increase in unemployment. In this economic context of increasing uncertainty and declining expectations for the future, it can be expected more people to mark time due to increasing pessimism. As a consumer, for example, this means more limited spending willingness, whilst as a worker it means less job security and fewer opportunities experienced to improve ones position in the external labour market. As a result it can be expected that ones current job will become increasingly accepted (with open arms), even if job satisfaction is under pressure. Expectations are that in an economic recession the relative significance of voluntary external labour mobility decreases in favour of involuntary employee turnover; the reverse is true in case of an

---

[152] For a more detailed explanation see section 5.2.3.

economic revival. In this cyclical context, involuntary external mobility of employees is the result of job destruction due to cutbacks in or closure of businesses (see, for example, Van der Hoeven and Verhoeven (1994) and Allaart and Van Ours (2001)). Turnover is voluntary if on the initiative of the worker, but forced if on the initiative of the employer.

In addition to the direct influence of the economy – via perceived job alternatives in the external labour market – on voluntary personnel turnover, the literature also presumes indirect effects (see, for example, Hulin, Roznowski and Hachiya (1985) and Price (2004)). An example is the direct influence of alternative job opportunities on the satisfaction with ones current job. In favourable economic conditions, the value of the different *job contributions* (see section 8.3.3) of a worker increases. This applies in particular to opportunity costs: "During times when a large number of alternative jobs are available, the utility of alternative activities forgone in order to occupy any specific position with an organization increases.", (Hulin, Roznowski and Hachiya (1985, p. 242)). This causes the perceived inducement-contribution ratio to fall (ceteris paribus) and hence overall job satisfaction. According to this line of thought, more (less) *ease of movement* therefore leads to more (less) *desirability of movement* (March and Simon (1958)) and is related to the concept of job satisfaction as an indicator of adjustment (De Graaf and Luijkx (1997); see also section 8.3.1). In addition to this causal connection between the economy and job satisfaction, the literature also identifies a possible interaction effect of both variables on employer mobility: "That is, employees who are dissatisfied and perceive many alternative job opportunities should be more likely to quit than those who are either satisfied or perceive few opportunities.", (Hulin, Roznowski and Hachiya (1985, p. 238)).

Various studies into labour mobility in the Netherlands subscribe to the empirical validity of the expected relationship between the economy and mobility of labour. Allaart and Van Ours (2001) find supporting evidence for the period 1985-1997, De Graaf and Luijkx (1997) specifically for the period 1986-1994 (from an economic upturn to a downturn) and De Wolff, Luijkx and Kerkhofs (2002) for the period 1993-1997 (economic upturn).

In this section effort is made to get some understanding of the relationship between the economy and labour mobility in the different business groups within the Dutch hospitality industry in the more recent period 1997-2004. For this purpose we first consider the time pattern of consumer demand in these business groups and investigate which determinants can be significantly identified (see also Bispo (2005)). It is anticipated that the economic climate in the Netherlands has a significant effect on consumer behaviour in the Dutch hospitality industry and thereby on the need of employers for personnel and the labour mobility of workers. We then present a number of empirical findings from the Hospitality Employees Studies 2000, 2002 and 2004[153] and investigate the extent to which these findings

---

[153] In writing the earlier chapters, the results of the Hospitality Employees Study 2000 (refering to mobility flows in the period September '1998-1999') and 2002 (2000-2001) were available. In section 3.2 preference was given to the 2002 research for empirical analysis. As well as being more up-to-date, this choice is also based on the presence of important SLM variables not available in the 2000 research, including information relating to additional training and actual earnings of hospitality employees. For comparability the Hospitality Employees

mesh with the observed picture of the economy. The present *secondary* investigation into the relationship between the economy and labour also has the purpose of being able to place the results of the Hospitality Employees Study 2002, which serve as the basis for most of the analyses in this book, in a sequence of (hospitality) years. In carrying this out, we shall deal in greater detail with the findings for the cafe sector, whilst summarising the results for the other three business groups.

Figure 8.1: Consumer demand and consumer price in the cafe sector (monthly figures, index 2000=100), 1997/1-2004/9
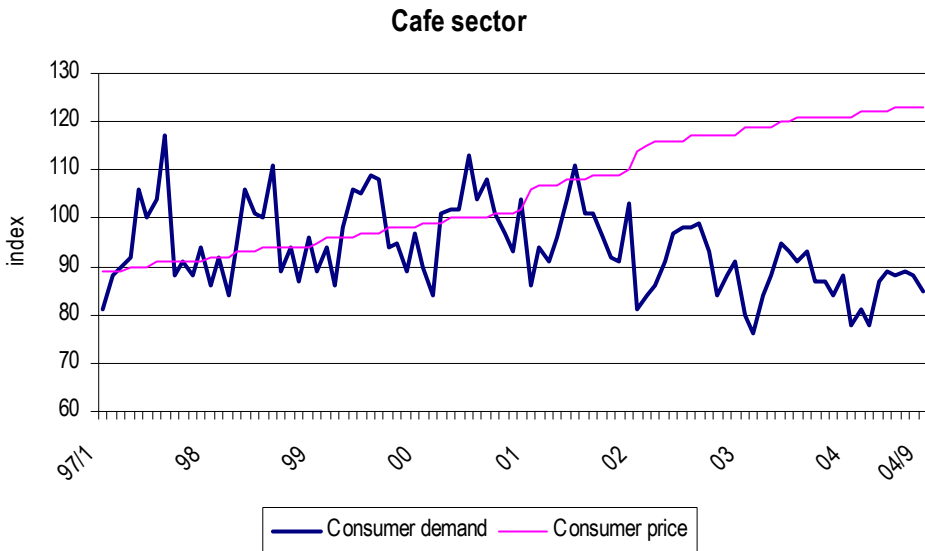
Source   : "Omzetstatistiek horeca" (Statistics Netherlands).

Study 2002 is also used as the basis for the analysis in this chapter, notwithstanding that by then the results of the 2004 research (2002-2003) also have become available. Furthermore, in the latest survey, the question of actual earnings was not repeated, nor the IEQ set again. For the secondary analysis in this section there does now exist, however, the opportunity to identify in figures some recent developments in the hospitality labour market and to relate them to certain developments in the relevant environment of the Dutch hospitality industry.

A first consideration of consumer demand[154] in the cafe sector in the period 1997-2004 reveals a seasonal pattern (see figure 8.1). In the first months of the year there is a relatively low level of economic activity. In general, the months from May up to and including August are characterised by above-average numbers of visits by consumers. After August the trend is downwards with a temporary upturn in December. The influence of the season appears to be dictated mostly by weather conditions and the amount of free time (e.g. holidays) available to the consumer. In addition to the seasonal influence, there is also a correlation identified with the economic climate. Average index figures over the months of the year reveal that consumer demand in the cafe sector increased annually over the period 1998-2000 and fell each year in the period 2001-2003[155]. From January 2002 the demand index (2000=100) no longer rose above 100. This change to a less favourable consumer picture has a positive link to the economic downturn that took hold in the Netherlands in autumn 2000.

It can also be observed that in the period 1997-2004 consumer demand in the cafe sector is highest in August 1997 (index=117), the month with the highest average temperature (20.5º) in this period. The second highest consumer demand is observed in June 2000 (index=113), the month in which Belgium and the Netherlands hosted the European Football Championship.

In addition to the season and economic climate, there are naturally other (macro) factors which one would expect to influence economic activity in the cafe sector. Demographic developments, price fixing in the cafe sector and the relative allure of the Netherlands as a holiday destination are a few examples of this[156]. Linear regression analysis is applied to investigate the systematic influence of several external variables on consumer demand in the cafe sector. The influence of a number of *derivative* factors is also researched. To estimate the influence of pricing policy in the cafe sector then alongside the *absolute* consumer price (see figure 8.1) a *relative* price is also applied, i.e. the consumer price in the cafe sector in relation to the general consumer price in the Netherlands (CPI). If either price variable increases, a negative effect on hospitality demand is expected: a higher hospitality price or one that increases faster than the general consumer price is expected to lead to less consumer demand in the cafe sector. On the face of it, both types of consumer price are candidates for inclusion, but preference for one or the other is a question of empirical assessment. In estimating the influence of factors, in addition to the distinction between absolute and

---

[154] Turnover is used as an indicator for consumer demand, with a correction for price changes. Monthly sales data for the different business groups in the Dutch hospitality industry, specified according to price and volume, are taken from Statistics Netherlands' *Sales statistics for the hospitality industry* ("Omzetstatistiek horeca") for the period January 1997 to September 2004, inclusive. These statistics define sales as all income from the sale of goods and services, including VAT. The figures also include income from sidelines. In this section the terms consumer demand, sales volume, economic activity and the demand for services are regarded as synonyms.

[155] The growth figures of consumer demand in the cafe sector equal: 1998: 0.2%, 1999: 2.5%, 2000: 2.5%, 2001: -2.8%, 2002: -6.5% and 2003: -4.0%.

[156] See also appendix A in Bispo (2005).

relative, we also have regard to the possibility that developments may not have an immediate effect, but a *delayed* effect (lag) of several months. It is conceivable that due to force of habit regarding hospitality demand, consumers will not immediately respond, for example, to worsening economic conditions and pessimistic economic forecasts. Adaptation is expected after a certain delay if a worsening situation and uncertainties (unemployment, increased job insecurity and accordingly income uncertainty) are more manifest. In the case also of an upturn in the economy, delays in adjustment are expected[157].

The empirical findings can be summarised as follows[158]. In harmony with the descriptive analysis, the pattern of monthly consumer demand in the cafe sector in the period 1997-2004 can be largely explained using regression analysis from the combination of seasonal influences, the Dutch economy and the absolute sales price in the cafe sector. The influence of the economy and consumer price here is not immediate: there is a delay in their coming into effect of approximately half a year. The partial effect of the economy and of prices on consumer demand in the cafe sector is significantly estimated at 0.634 and -0.722 respectively.

---

[157] With regard to the measurability of (influencing) variables it can be noted that there is not always a direct standard available. There are no direct figures, for example, for the relative allure of the Netherlands as a holiday destination, although proxies can be used for this such as, for example, the dollar rate and the consumer price in the Netherlands compared to the same price in the Euro zone. Obviously, the use of proxy variables as predictors introduces the econometric problem of errors-in-variables violating one of the basic assumptions in a classical linear regression model (see, for example, Maddala (1992, ch. 11) and Kennedy (2003, ch. 9)). However, in the present expedition no corrections are presented for the resulting 'biasedness towards zero'. The present regression analysis also requires (or would at least benefit from) the availability of monthly figures. Accordingly, the total national private consumption of households (volume) is used as an indicator for the state of the economy, since GDP figures for this frequency level are not directly available. It is also noted that the present investigation primarily deals with the systematic influence of the more structural economic factors on the demand for hospitality services. No account is taken of incidental (and often unpredictable) influences such as a BSE crisis and terrorist attacks, although these circumstances could temporarily increase or lower the level of consumer demand in the Dutch hospitality industry and be regarded as a partial explanation for observed differences between realization and prediction. Non-economic factors are also disregarded in the estimation picture. An example here includes the development of the image presented to consumers of the quality of the service in the Dutch hospitality industry. In this context, it is suspected that the downward trend in consumer demand in the first few years of the 21st century is also partly determined by a less positive experience amongst consumers of specific aspects of the service offered them.

[158] The estimation results of the various model specifications can be provided on request. Particular use is made of linear regression where the variables are expressed as indicator variables (e.g. season) or as level variables. No logarithmic transformations have been applied. In line with expectations, the empirical investigation shows that there is not such a thing as *the* (macro) model for consumer behaviour in the cafe sector (and other business groups). Instead, one can formulate a number of plausible industry relationships where the effect of each (or most) of the selected regressors is significant, producing the expected effect and whereby the model as a whole has a significant explanatory power. Effects of delay, for example, play an important role in many of the regression models investigated, but there is mostly no 'uniqueness of the significant lag'.

Although specific account is taken of seasonal influences, weather conditions, expressed as the number of hours of sunshine per month, as well as 'the month of December', appear to each have their own significant effect, i.e. even after correction for the state of the economy and consumer price in the cafe sector. Such a significant individual effect also applies to 'June 2000', the month, as noted, in which the Netherlands and Belgium played host to the European Football Championships. Seasonal influences, the economy and the absolute consumer price in the cafe sector together account for almost 76 per cent of the variation in consumer demand realised in the cafe sector in the period 1997-2004.

Figure 8.2: Consumer demand in the cafe sector (monthly figures, index 2000=100), realization and prediction, 1997/7-2004/9
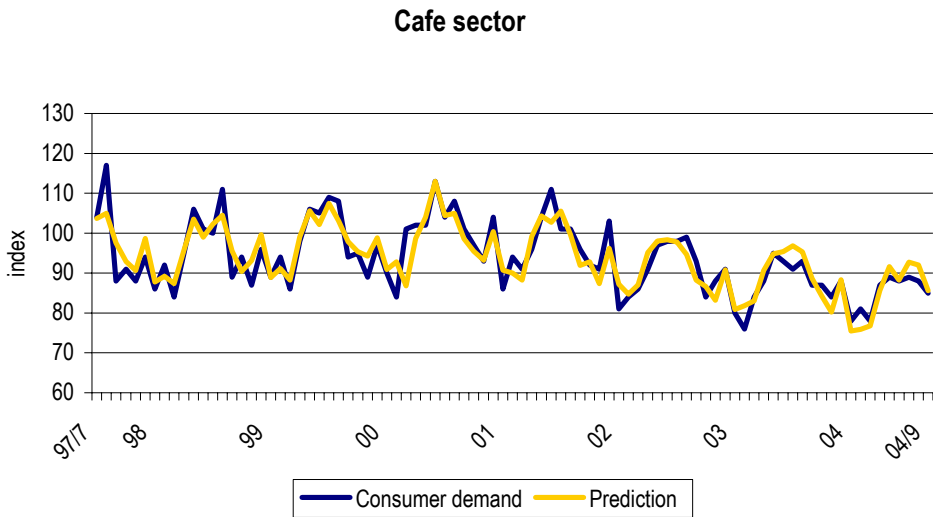
Cafe sector

Figure 8.2 reveals that the prediction line is reasonably in step with the actual pattern of consumer demand in the cafe sector. Examples of months in which there is a considerable underestimate of consumer demand are August 1997 and August 1998, when weather conditions were particularly favourable, i.e. relatively many hours of sunshine and an average high temperature. Although specific account is taken of these positive conditions, the underestimate remains valid. In these months, with regard to their visits to the cafe sector, consumers appear to have profited to a large degree from the fine weather, and visitor volume is possibly increased further due to the month of August also being a traditional holiday month. It is conceivable, and indeed probable, however, that other determinants also play a role in these underestimates. This also applies to the relatively large disparity between realisation and prediction in certain other months.

Table 8.7: Some descriptives of the labour market in the cafe sector, September 1999, September 2001 and September 2003

Mobility group (%)	September 1999	September 2001	September 2003
Immobility	54.8	53.2	55.8
Through-flow	19.5	16.8	20.1
Inflow	25.7	30.1	24.1
Job search (%)	16.3	14.8	25.2
Job characteristics (%)			
Permanent appointment	47.5	52.4	43.6
Temporary appointment	52.5	47.6	56.4
Small part-time	69.1	65.9	68.5
Large part-time	17.1	17.4	19.4
Full-time	13.7	16.7	12.0
Flexible working hours	*48.7*	*46.4*	*50.7*
Work perception (%)			
Possibility of job destruction	15.0	16.2	23.0
Possibility of unemployment	7.9	7.2	15.7
Total (%)	**100**	**100**	**100**
n	329	243	242

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 1998-1999, 2000-2001 en 2002-2003" (Dutch Board for the Hospitality and Catering Industry).

Remarks : Immobility = employees who in the period September '1998-1999' (idem: 2000-2001 and 2002-2003) remained with the same employer; through-flow = employees who in the particular period switched employers within the hospitality industry; inflow = employees in September 1999 (idem: 2001 and 2003) being employed in the hospitality industry for less than one year; job search = employees who are currently (September 1999; idem 2001 and 2003) searching for a job with another employer.

: A permanent appointment is inclusive of temporary employment with the commitment of a permanent contract.

: Small part-time work = flexible working hours or contractually for at most 11 hours per week; large part-time work = 12-37 hours per week; full-time work = 38+ hours per week.

: Possibility of job destruction = *Will your job (possibly) be discontinued?*; possibility of unemployment = *Did you run the risk to become unemployed last year?*

: n = The size of the net UWV sample.

The above examination revealed that consumer demand in the cafe sector came under great pressure especially from 2002 onwards, in Dutch Board for the Hospitality and Catering

Industry (2004) evidenced by fewer guests and guests who visit less frequently. In line with this picture of the consumer, developments are identified in the labour market in the period September '2001-2003' that point to greater reliance on numerical labour flexibility. The proportion of (UWV) workers in the cafe sector with a temporary contract of employment rose from 48 per cent in September 2001 to 56 per cent in 2003 (see table 8.7). The share of workers with variable working hours and part-time work also increased significantly in this period. Also consistent with the downward business cycle is the increase in immobility. However, significantly more workers are in search of another employer: 15 per cent in September 2001 compared to 25 per cent in 2003. Correlating with this is the increased through-flow within the cafe sector[159]. The inflow into the cafe sector from a position outside the Dutch hospitality industry has therefore dropped considerably. It is expected that due to the increased reliance on temporary contracts and consideration of the business undertaking through the decline in economic activity, the search behaviour of workers in September 2003 will be largely dictated by the need to be mobile (involuntary mobility). In line with this is the increased proportion of workers who believe that their present job will (possibly) be terminated (*Possibility of job destruction*). This also applies to the assessment of having run the risk of becoming unemployed last year (*Possibility of unemployment*). Although it is probable that these views can be largely related to the decline in economic activity there are also other causes which are plausible, such as cessation of work (leading to possible unemployment) through a consideration of the business undertaking independent of external developments. The risk of unemployment can also be stimulated by the type of contract of employment or, for example, individual performance in the job. Respondent workers will perhaps be less quick to take on board this last option. With regard to the period September '1999-2001' it appears that the reversal in the second half of 2000 into adverse economic conditions in the Netherlands has still had little effect on the labour market situation in the cafe sector. Comparing the corresponding UWV data sets, in September 2001 we actually observe more permanent contracts of employment, less working of flexible hours and, for example, more full-time work. Furthermore, the perception of a possible loss of job or organizational participation has changed relatively little in this period.

For the other business groups in the Dutch hospitality industry the empirical findings can be summarised as follows. The traditional seasonal pattern in the fast food sector is comparable with that in the cafe sector. In line with the growth of the Dutch economy, economic activity in the fast food sector also increased on average year on year in the period 1998-2000 and fell each year in the period 2001-2003[160]. Regression analysis shows (again) that the combination of season, business cycle and absolute consumer price in the fast food sector

---

[159] Although the destination of this through-flow is the cafe sector, a proportion of these workers come from a different business group in the hospitality industry. Accordingly, the term inflow here refers to the inflow into the cafe sector from a position outside the Dutch hospitality industry.

[160] The growth figures of consumer demand in the fast food sector are: 1998: 1.6%, 1999: 5.5%, 2000: 2.4%, 2001: -2.0%, 2002: -3.3% and 2003: -3.6%.

leads to a significant, sparse and interpretable explanatory model for consumer demand in the fast food sector. The explanatory power of the model is 0.86. The partial effects of the economy and the consumer price are estimated as significant at 0.877 and -0.698 respectively. Again we can identify delays in adjustment. The downward trend in consumer demand in the fast food sector too has most effect in the labour market in the period September '2001-2003'. Immobility in this period increased from 41 per cent in September 2001 to 56 per cent in 2003. This pressure on labour mobility correlates with both less through-flow and less inflow into the fast food sector. There is also a finding of a shift from full-time work to more part-time work and variable working hours. The proportion of workers who believe that over the past year they ran the risk of unemployment has increased from 10 per cent in September 2001 to 16 per cent in 2003. Despite room for nuancing, various indicators suggest a more positive picture of the labour market for the period September '1999-2001'. The expectation of possible cessation of work scores, for example, 27 per cent in September 1999 compared to 17 per cent in 2001. In addition the perceived risk of unemployment has also fallen in this period of time.

Regarding the restaurant sector, the seasonal pattern and correlation with the business cycle can be characterised in the same way as for the cafe sector and the fast food sector[161]. Again the combination of season, business cycle and absolute sales price in the restaurant sector largely explains consumer demand in this sector. The explanatory power of the model is 0.87. The partial effect of the economy is estimated as significant at 0.713 and the influence of the restaurant price at -0.529. Consumers respond here with a delay of several months following price changes. In contrast to the cafe sector and the fast food sector, in the restaurant sector the dollar exchange rate also has a significant separate effect on consumer demand. It is the expectation that this exchange rate especially mirrors the business and international elements of restaurant visits in the Netherlands. In line with the expectation, the estimated exchange rate effect is negative: a higher dollar rate (more expensive Euro) averagely puts pressure on consumer demand in the restaurant sector. It is expected that a more expensive Euro for the Euro zone leads to fewer incoming and more outgoing tourists (ceteris paribus). Both effects have a negative influence on tourism in the Netherlands and thereby indirectly on the demand for services in the Dutch hospitality industry, including the restaurant sector. An example of an incidental fact that correlates with a significant underestimation of actual consumer demand in the restaurant sector has been the introduction of the Euro. In the month preceding the transfer from the guilder to the Euro (December 2001) the index for consumer demand in the restaurant sector is approximately 106 (2000=100), compared to an estimated value of 99 using the regression results. In the restaurant sector also the influence of a reduction in consumer demand has affected the labour market especially in the period September '2001-2003'. Immobility increased in this period from 43 per cent in September 2001 to 49 per cent in 2003. There was less inflow, but especially less through-flow within the restaurant sector. In addition, within the restaurant sector as well there is a finding of greater emphasis on smaller jobs and variable

---

[161] The growth figures of consumer demand in the restaurant sector are: 1998: 5.3%, 1999: 3.4%, 2000: 2.7%, 2001: -0.3%, 2002: -2.9% and 2003: -4.7%.

working hours. The perceived risk of unemployment (over the last year) rose from 9 per cent in September 2001 to 19 per cent in 2003. The perception of possible cessation of work is the same for both UWV measurements: 21 per cent. In the period September '1999-2001' there was a significant drop in both perceptions. Likewise, neither do other relevant indicators reveal for this time period a worsening picture for the labour market.

Figure 8.3: Sales in the hotel sector (monthly figures, index 2000=100), 1997/1-2004/9
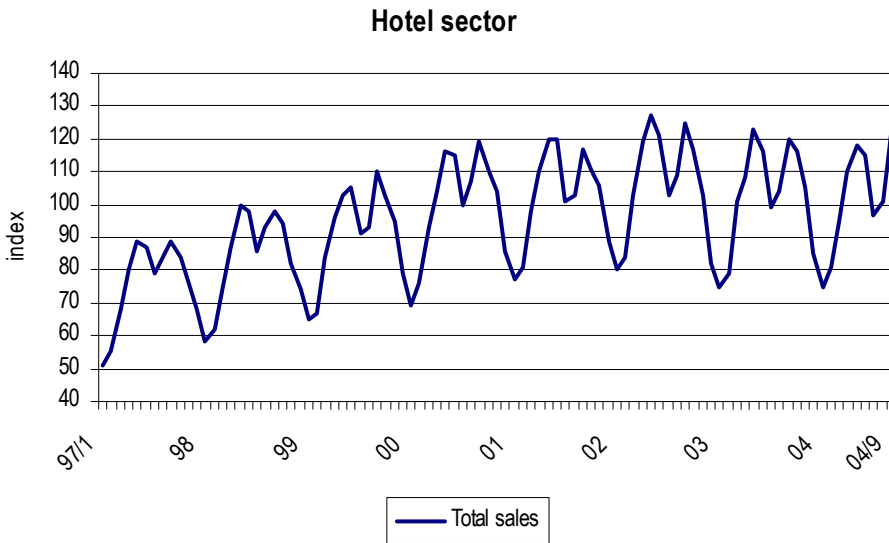
Hotel sector

Source   : "Omzetstatistiek horeca" (Statistics Netherlands).

Compared with the other business groups, the Dutch hotel sector has a somewhat different seasonal pattern (see figure 8.3). In the first months of the year turnover[162] within the hotel sector can be described as modest, but rises steadily to peak in May and June (short hotel holidays). During the high season in July and August there is a temporary reduction in turnover, but there is another peak in September. After September we see a significant downward trend. The drop in high season is explained by the summer vacations during which relatively many Dutch spend a long vacation abroad, and if long holidays are spent at home during these months they are mostly spent in the recreational sector. Furthermore, the business market is quieter during the high season. Accordingly, for total turnover in the hotel sector, in certain months the volume of demand is very important (e.g. owing to a relatively high holiday participation and intensity during school holidays), while in other periods this

---

[162] In contrast to the other business groups, on the basis of the *Sales statistics for the hospitality industry* from Statistics Netherlands there are no monthly figures available for consumer price in the hotel sector. Consumer demand in the hotel sector in this section therefore relates to turnover, including price and volume changes.

is (also) true for the expenditures per night (e.g. referencing the start of the business market in September). Conforming to expectations, in addition to the season also the business cycle has a clear correlation with the demand for services in the hotel sector: after strong turnover growth in the period 1998-2000, a weakening is observed from 2001 onwards[163]. Consumer demand came under great pressure especially in 2003. After correction for seasonal influences, the business cycle in the Netherlands on its own explains 84 per cent of actual (monthly) turnover in the hotel sector in the period 1997-2004. In common with the restaurant sector, the dollar exchange rate offers additional explanatory power and showing the expected effect. Including the exchange rate the explanatory power of the model is 0.90. The partial effect of the economy is estimated as significant at 1.447: positive growth in the Dutch economy (by one unit) leads to a greater than proportionate increase in turnover in the hotel sector (and vice versa). This influence illustrates the greater significance of the business cycle for the hotel sector than for the other business groups. Furthermore, it is expected that in addition to exchange rates, consumer prices in the holiday destinations will also influence tourism, since the effect of a favourable exchange rate can be tempered with relatively expensive tourism goods and services in the relevant destinations. The general consumer price in the Netherlands, in absolute terms and in proportion to the consumer price in the Euro zone, does not, however, offer any additional explanatory power. This is true also when possible delays in making adjustments are taken into account. As with the other business groups the decline in economic activity in the hotel sector affected the labour market particularly in the period September '2001-2003'. A comparison of both UWV measurements indicates an increase in immobility from 46 per cent in September 2001 to 55 per cent in 2003. This development is at the sole expense of the inflow into the hotel sector: 34 per cent in 2001 compared to 23 per cent in 2003. In the hotel sector there is also a finding of greater emphasis on numerical labour flexibility. The proportion of temporary contracts increased considerably in this period. Furthermore, we find a significant switch from full-time to large part-time work (12-37 hours). The proportion of hotel employees who experience a risk of unemployment rose from 12 per cent in September 2001 to 20 per cent in 2003. The perception of possible job destruction also increased: from 15 per cent in 2001 to 19 per cent in 2003. The period September '1999-2001' reveals a still predominantly positive picture of the labour market.

We can conclude that for all business groups in the hospitality industry the decline in the Dutch economy in the first years of the 21st century has significantly influenced consumer demand. Increasing pressure on turnover has also not left the labour market unaffected. This is particularly true for the period September '2001-2003'. There is an increased immobility in all business groups and greater emphasis on forms of numerical labour flexibility. In this period workers also experienced an increased level of job uncertainty. The expectation is that in all business groups within the Dutch hospitality industry the significance of involuntary employee turnover (need to be mobile) increased in this period at the expense of voluntary turnover.

---

[163] The turnover growth figures for the hotel sector are: 1998: 10.7%, 1999: 8.3%, 2000: 9.9%, 2001: 2.8%, 2002: 3.2% and 2003: -3.3%.

8.4. Job satisfaction, job search and labour mobility in a multivariate setting

This section presents a number of model analyses to provide a more complete, integral picture of the mobility processes in the Dutch hospitality industry. These multivariate analyses focus particularly on the explanation of some important cornerstones of the withdrawal process leading to a possible move away from one's present organization, namely overall job satisfaction (section 8.4.1), mobility aspirations in the form of job searching in the external labour market (section 8.4.2) and, as a specific form of employer mobility, voluntary employee turnover to a new position outside the hospitality industry (section 8.4.3). Additionally, in this multivariate setting we will also look at some predictors of intraorganizational mobility (section 8.4.4). In this section we use logistic regression as an estimation technique[164]. Although not always explicitly indicated, the parameter estimates therefore refer to the effect (of some predictor) on the *probability* of: job contentment, job search, employer mobility and internal mobility. By differentiating the regression analyses according to the PCS submarkets, we can investigate the extent to which the perceived labour market behaviour of hospitality employees in the various labour market segments differs from each other and conform to the segmentation theory.

8.4.1. Overall job satisfaction

Overall job satisfaction[165] in the Dutch hospitality industry is significantly influenced by a variety of job aspects (see table 8.8). This applies both to the hospitality sector as a whole and to the primary and secondary labour market in particular[166]. Almost all significant parameter estimates have the expected sign. The χ^2-tests reveal that the corresponding empirical satisfaction models as a whole are significant. Worker characteristics such as age, gender, country of birth, make-up of the household (whether children live at home) and the educational level have no additional explanatory power.

In line with the expectation, higher earnings lead to greater job satisfaction (see also Price (2004)). This applies only to employees with a secondary job in the hospitality industry. These *Allemansfuncties* are largely filled by students and youngsters of school age and we can expect that for this age group the financial aspect of working in the labour market represents a relatively high value and thereby a significant determinant of job satisfaction. It

---

[164] See chapter 3 for a detailed explanation of the logistic regression model.

[165] The precise question regarding overall job satisfaction is: *All in all, are you currently taking the view to be well, fairly well, moderately well or not well off in your work?* For regression purposes the first two response categories have been combined to establish overall job satisfaction: *well* and *fairly well*. Accordingly, the definition of overall job satisfaction differs here from the corresponding description in chapter 3 (see table 3.11).

[166] In estimating the various satisfaction models it does not appear possible to make a further distinction within the primary labour market between the professional market and craft market.

can be expected that in addition to the level of income the perceived sufficiency of individual earnings will also contribute to job satisfaction. This sufficiency can be assessed by relating current net earnings to the IEQ answers (see chapter 3). However, due to partial non-response and 'incorrect' answering of the income evaluation question (see section 3.4.2) this comparison cannot be made for all employees. Accordingly the perceived sufficiency of earnings is not included as a determinant in the various satisfaction models. Insofar as the degree of income sufficiency can be evaluated, a bivariate analysis shows that an increasing pressure on this form of income satisfaction has a significant negative correlation with overall job satisfaction. Of all those workers in the Dutch hospitality industry who consider that, having regard to their personal circumstances, their net earnings are sufficient (or better), over 90 per cent confirm that they are satisfied with their present work. Of all those hospitality employees who consider that their net income is insufficient (or worse) this figure is significantly lower at 70 per cent. Another indicator of income satisfaction is the experienced consistency of earnings with the work to be done. The estimation results show that this consistency also contributes separately to overall job satisfaction. Significance is again only perceived in the secondary labour market (at the 10% level).

In line with expectations, work commitment leads to greater satisfaction (Price (2004, p. 19)). This influence is found in both labour market segments, although the effect on the primary labour ladder is estimated somewhat higher.

The expectation of promotion over the next two years held by hospitality workers leads to significantly greater satisfaction with the current job. It can be assumed that the expected opportunities for promotion and accordingly the prospects of greater job allure, just like other significant predictors of overall job satisfaction, increase commitment to the organization. Although in both submarkets the estimated promotion effect is positive, it is only in the secondary labour market that significance is perceived. Given the corresponding question (see table 8.8, below) it is conceivable, however, that a proportion of the workers in answering did not have in mind an expected promotion with their current hospitality employer, but rather that they were thinking of promotion in the external labour market. This room for interpretation may possibly be a reason why the promotion effect in the primary labour market is not significant. Likewise, it can be supposed that a proportion of young people in the secondary labour market answering that question particularly had in mind a 'real job' after expected completion of studies in the coming few years.

In line with the expectation, longer periods of employment lead to greater job contentment. At the industry level, hospitality workers employed for 6 or more years are more satisfied with their current job than workers being in their job a relatively short time (reference: two years or less). A higher probability of job satisfaction with a longer period of employment may be linked with a better quality of connection (between worker and job), but can also correlate, for example, with satisfaction as an adaptation phenomenon (see section 8.3.1). A further distinction between primary and secondary workers reveals that the influence of length of employment has an explanatory power only on the primary labour ladder. In the primary labour market there is greater overall job satisfaction than in the reference group where length of employment is three years or more. In the corresponding satisfaction model the influence of length of employment of 6-10 years is just not significant at the 10% level.

Table 8.8: Overall job satisfaction in the Dutch hospitality industry by labour market segment (logit estimates), September 2001

	Secondary workers	Primary workers	Total
Net hourly wage	0.333 **	0.008	0.128 **
Salary consistent with work	0.643 *	0.325	0.438 *
Work commitment	0.685 *	0.881 **	0.736 **
Promotional chances	2.569 **	0.500	0.951 **
Job tenure (≤ 2 years)			
3-5 years	-0.615	1.480 **	0.453
6-10 years	2.722	1.047	1.010 *
11+ years	0.999	1.431 **	0.973 *
Additional training			
General training (intensity)	-0.181	0.120	0.070
(Enterprise) specific training	1.848	1.059	1.087 *
Contract of employment (temporary)			
Permanent	-0.104	0.403	0.253
Contractual working hours per week (small part-time)			
Large part-time	-0.117	0.102	0.040
Full-time	-0.084	-0.030	-0.190
Education fitting in with work (the right education)			
Too high an education	-0.524	-0.673 *	-0.597 **
Too low an education	-0.332	0.748	0.245
Firm size (50+ employees)			
1-9 employees	-0.793	-0.251	-0.548
10-19 employees	-1.086 **	0.098	-0.515
20-49 employees	-0.357	-0.322	-0.287
Business group (fast food sector)			
Cafe sector	0.396	0.509	0.507
Restaurant sector	-0.031	0.010	0.143
Hotel sector	-0.376	-0.018	-0.120
Labour market segment (craft workers)			
Professional workers			-0.329
Secondary workers			0.443
Physical workload			
Handling weights over 5 kilograms	-0.149	0.515 **	0.156
Handling weights over 25 kilograms	0.020	0.047	0.098
Working in uncomfortable positions	-0.141	-0.517 **	-0.255 **
Standing/walking uninterruptedly	-0.008	-0.193	-0.142
Recurring work	0.203	0.238	0.243 **
Mental workload			

Work organization and direct management	-0.916 **	-1.192 **	-0.996 **
Work pace	0.463 **	0.811 **	0.551 **
Colleagues and unforeseen situations	0.509 **	0.466 **	0.436 **
Discrimination	0.227	0.237 **	0.236 **
Freedom in work: work pace	-0.388 *	-0.662 **	-0.462 **
Guests	0.060	0.162	0.092
Freedom in work: work versus private matters	-0.563 **	-0.337 **	-0.410 **
Constant	1.000	1.176	0.866
$X^2(k)$	135.58 (32) **	225.60 (32) **	324.13 (34) **
Correct classified cases (%)	90.5	89.6	89.8

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : The exact wording is as follows: salary consistent with work = *Do you think your salary being in line with the work to be done?*; work commitment = *My work means a lot to me*; promotional chances = *Do you expect to get promotion in the next two years?*

: General training is measured by the number of completed training courses tuned to the hospitality practice (see table 8.3, but exclusive of enterprise specific training).

: A permanent appointment is inclusive of temporary employment with the commitment of a permanent contract.

: Small part-time work = flexible working hours or contractually for at most 11 hours per week; large part-time work = 12-37 hours per week; full-time work = 38+ hours per week.

: Regarding the relationship between work and education the exact wording is as follows: *Within the scope of your work do you have too high, too low or the right education*?

: The indicators of the physical and mental workload equal to the factor scores as estimated in chapter 5.

: ** = Significantly at α=5%; * = significantly at α=10%.

At the industry level it is perceived that hospitality employees who have completed one or more internal courses are more satisfied than workers without this specific form of additional training. This finding is consistent with the expectation that (substantial) firm specific training, through greater opportunities for promotion and thereby greater commitment to the organization, increases the probability of internal mobility and reduces the probability of search behaviour and external mobility. This expectation applies principally to the primary labour market, but in this submarket there is just no significance observed. The intensity of general additional training (number of hospitality courses) has no influence on job satisfaction. Compensating influences possibly play a role here. On the one hand it can be expected that (substantial) general additional schooling also increases the probability of a change of job within an organization (greater satisfaction), whilst on the other hand we can assume that general hospitality training leads to proficiency with a large degree of usability within the hospitality sector. This usability in the external labour market can lead to a lower experienced inducement-contribution ratio relating to the present work (less satisfaction, see section 8.3.3).

Satisfaction with current work is not significantly influenced by the type of contract of employment, the size of the job and the business group in which the worker is employed. These conclusions apply to both labour market segments. Firm size also makes almost no difference to overall job satisfaction. Only hospitality employees in the secondary labour market working in establishments with 10-19 workers are less satisfied than workers in the largest firms (50+ employees).

In chapter 3 we found that there is a perception of underutilization of the qualification level at all levels of the hospitality organization. Several possible antecedents can be put forward for this finding, in line with both the neoclassical and SLM schools of thought (see section 3.6.5). Consistent with the dual labour market theory, in the present multivariate setting underutilization is observed to lead to less job satisfaction and this influence is particularly felt in the primary labour market. These estimation results support hypothesis 14 (14a and 14b) in chapter 3.

Overall job satisfaction is also significantly influenced by specific aspects of experienced physical and mental workload. For an empirical analysis of the effect of working conditions on overall job satisfaction use is made of the results of the factor analyses in chapter 5. For most estimated factor scores, a higher value leads to the assumption of a more positive perception amongst workers of the underlying (summarized) work aspects[167]. Only the working conditions described as *Work organization and direct management*, *Freedom in work: work pace* and *Freedom in work: work versus private matters* is there a negative correlation between the estmated factor score and work attitude (see also section 5.3.1). The estimation results reveal that it is especially work aspects assumed to primarily affect mental workload that have a significant effect on overall job satisfaction. Within this category of work attitudes, all significant parameter estimates have the expected sign. For the hospitality industry as a whole the opinion on the work organization and direct management has the largest effect on overall job satisfaction, followed at a distance by work pace (and pressure of work). This order is the same in the primary labour market. By contrast, job satisfaction in the secondary labour market, after the judgment about work organization and direct management, is particularly determined by perceived opportunities to harmonise work and private spheres. Expectations are that this harmonisation amongst young people mostly refers to the opportunity to create a good combination of the secondary job in the Dutch hospitality industry and schooling, and, in the case of women, also with child care and household chores. It is not only the perceived pressure of work, but also the opinion on the freedom to relieve this pressure, which has more effect on overall job satisfaction in the primary labour market than in the secondary segment. Job satisfaction is also significantly influenced by the working relationship with colleagues and the degree to which hindrance at work is experienced due to unforeseen situations and the absence of colleagues. This influence is of similar weight in both labour market segments. Aggravating circumstances in the form of discrimination at work on the basis of skin colour or gender also influence job

---

[167] This assumption follows from the corresponding individual work attitude questions in the Hospitality Employees Study which are summarized in the relevant factor scores. See section 5.2.3 for the precise wording of these attitude questions.

contentment. Despite a comparable effect it is only in the primary labour market that a significant discrimination effect is observed.

As far as the influence of physical workload on job satisfaction is concerned, the estimation results for the entire Dutch hospitality industry reveal significance only for *Working in uncomfortable positions* and *Recurring work*. Of all the significant parameter estimates in the various satisfaction models, it is only the estimated effect of the perception of requirement to work frequently in uncomfortable positions that does not conform to the expectation: greater discomfort (lower factor score) leading to greater satisfaction. During work the requirement to repeat frequently the same movements or stay for long period in the same position (labelled *Recurring work*) leads to less job satisfaction. Despite comparable effects, however, there is an absence in both labour market segments of significance in this work aspect. In the secondary labour market none of the specific (summarized) aspects of physical workload have a significant effect on overall job satisfaction. In the primary labour market job satisfaction is also determined by the perception of having to frequently deal with weights in excess of five kilograms (lifting, carrying, pushing or pulling).

The estimation results for the entire hospitality industry show that if account is taken at the same time of various job and firm characteristics (as well as personal characteristics) then overall job satisfaction is not influenced by the labour market segment in which one is employed. We can, however, identify (partly) distinct explanatory processes between the two submarkets. On the basis of the present estimation results, referencing the employment situation in September 2001, significant predictors of overall job satisfaction can be discerned that are unique to a particular labour market segment. This applies, for example, to individual earnings and firm size in the secondary labour market and to length of employment and perception of underutilization of the qualification level on the primary labour ladder. Furthermore, determinants of job satisfaction can be identified that show significance in both submarkets, but where the size of the effect is different. This applies, for example, to (freedom regarding) work pace and perceived freedom to be able to harmonise work and personal spheres.

To summarise, the various empirical satisfaction models for the Dutch hospitality industry illustrate the presence of (segment-specific) job aspects that are significant predictors of overall job satisfaction. These aspects can possibly serve as points of reference for (segment-specific) Human Resources Management.

In the case of a dissatisfying work situation we can distinguish several forms of adaptation, such as exit, voice, loyalty and neglect (see section 8.3.3). The investigation in the following section shows what job, firm and personal characteristics stimulate search behaviour towards a job with another employer and thereby contribute to a following step in the withdrawal process towards possibly leaving the current organization.

8.4.2. Job search

Searching for a job in the external labour market can be a manifestation of dissatisfaction with the present work. It signifies a few steps further in the withdrawal process towards employee turnover (Mobley (1977, p. 238)). We can therefore expect that specific factors that are significant predictors of overall job (dis)satisfaction will also influence search

behaviour. As indicated, dissatisfaction with the current work situation can also lead to other forms of adaptation. Furthermore, the choice of looking for a new job or not can be unrelated to the present work situation, resulting, for example, from individual psychological characteristics or personal circumstances (children living at home, etc.). According to the neoclassical theory, mobility aspirations are stimulated by a relatively high mobility power, i.e. determined by accumulated human capital that can be productively employed by various employers. According to the segmentation theory this influence of the wealth in human capital applies particularly to the primary labour market. It can further be expected that at a given point in time a more than average number of workers will be identified as being in search of a job who have relatively limited opportunities in the labour market[168]. On the other hand, it can be assumed that underprivileged workers who fail to find a new employer will relatively quickly abandon their mobility aspirations (see also De Graaf and Luijkx (1997)). Which of the two arguments predominates is expected to be dependent on the distinction between wishing to be, and having to be, mobile.

The multivariate analyses to describe search behaviour of workers in the Dutch hospitality industry reveal that most of the significant parameter estimates have the expected sign (see table 8.9). In accordance with the concept of a segmented labour market the relevant predictors mostly are significant only for a specific worker group.

Applying the χ^2-test we can conclude that the various empirical search models as a whole are significant, albeit in the secondary labour market at the 10% level.

Higher earnings lead to greater job satisfaction. This applies in particular to workers with a secondary job in the Dutch hospitality industry (see table 8.8). Therefore, it is striking to observe that higher individual earnings in the secondary labour market lead to a higher probability of searching for a new job, although this income effect can be described as limited. The perception of conformity between salary and work leads to less mobility aspirations. Again, significance is observed only in the secondary labour market, in which the effect of this form of income satisfaction is significantly greater than the influence of the level of income.

Work commitment leads to less search behaviour, but this has no significance in any of the PCS submarkets.

Insofar as anticipation of promotion refers to an expected improvement in position with the current employer (see section 8.4.1), the estimated partial effect in the professional market and in the secondary segment has the expected negative sign. In both submarkets, however, there is no finding of significance. On the lower tier of the primary labour ladder also, the expected promotional chances have no explanatory power.

We can expect from various job aspects that a positive perception, via greater job satisfaction (mediator), leads to more commitment to the organization (see also Price (2004)). The estimation results show that organizational commitment also has a separate effect on mobility aspirations. In all PCS submarkets greater commitment to the

---

[168] Hartog, Mekkelholt and Van Ophem (1987, p. 119) describe this type of selectivity as follows: "Relatively underprivileged workers will on average have to spend longer searching than relatively privileged workers. This means that underprivileged workers with an intention to quit have more chance of being identified as searching, whereas privileged workers have a relatively small chance of being perceived as searching."

organization leads to less search behaviour, but only in the secondary labour market is there a finding of significance.

The length of employment has a significant effect on searching for a new job only in the lower tier of the primary labour market. This is especially true for workers with a duration of employment of 3-5 years. In line with the empirical findings regarding job satisfaction, these workers are less often in search of a new employer than workers who are in employment for a relatively short period (reference: two years or less). Conversely, workers who are employed by the same employer for 11 years or more are more satisfied than workers in the reference group, but there is no significance with regard to the corresponding negative effect of the length of the period of employment on search behaviour.

In line with the segmentation theory, the influence of human capital in the form of additional training on search behaviour in the primary labour market is more systematic than in the secondary segment. This conclusion applies in particular to a comparison between workers with a main job (but without an initial professional qualification at an intermediate or high level) and with a secondary job in the Dutch hospitality industry. Conforming to the expectation of more promotional chances and greater commitment to the organization, hospitality employees on the lower tier of the primary labour ladder who have completed one or more internal courses are less often in search of a new job in the external labour market than workers without firm specific training. Conversely, an increase in the number of completed general courses tuned to the hospitality practice leads to more frequent searching for a new job. This finding conforms to the expectation that (substantial) general training correlates with the acquirement of human capital with a relatively high degree of usability within the hospitality industry (and possibly also beyond). It is notable that in the professional market there is no finding of a significant effect of additional training on search behaviour. Where internal training is also used to stimulate commitment to the organization, it appears that this strategy mostly has such an effect amongst workers on the lower tier of the primary labour ladder.

In line with the expectation, workers with a temporary appointment are more often in search of a new employer than workers with a permanent contract of employment. This finding is identified across all labour market segments, but only on the lower tier of the primary spectrum significance is perceived.

Overall job satisfaction is not influenced by the size of the job (see table 8.8), although this job aspect does have a significant effect on the mobility aspirations in the primary labour market. In the professional market workers in full-time or large part-time work (12-37 hours) are less often searching for a new job than hospitality workers with a small part-time job (including variable working hours). The primary responsibility for household income lying mostly with men (see table 3.14) can play a role here. The negative effect of large part-time work on search behaviour can also indicate the plausibility of the assumption that employers also offer part-time jobs not so much to create labour flexibility, but more to retain within the organization a valued professional wishing to work part-time. On the other hand, in the lower tier of the primary labour market large part-time workers are more often in search of a new job.

Table 8.9: Job search in the Dutch hospitality industry by labour market segment (logit estimates), PCS method, September 2001

	Secondary workers	Craft workers	Professional workers	Total
Net hourly wage	0.157 **	0.002	-0.087	0.079 *
Salary consistent with work	-0.501 *	-0.299	-0.766	-0.418 **
Work commitment	-0.043	-0.311	-0.876	-0.083
Promotional chances	-0.037	0.020	-0.322	-0.016
Organizational commitment	-0.655 **	-0.430	-0.617	-0.366 *
Job tenure (≤ 2 years)				
3-5 years	-0.234	-1.190 *	0.431	-0.297
6-10 years	-0.514	0.684	-1.078	0.237
11+ years	0.086	-0.370	-0.231	-0.394
Additional training				
General training (intensity)	0.051	0.222 *	-0.128	0.009
(Enterprise) specific training	-1.257	-1.402 *	0.462	-0.458
Contract of employment (temporary)				
Permanent	-0.300	-0.830 **	-0.850	-0.403 *
Contractual working hours per week (small part-time)				
Large part-time	0.017	1.163 **	-2.671 **	0.257
Full-time	-0.129	-0.048	-1.722 **	-0.140
Education fitting in with work (the right education)				
Too high an education	-0.078	0.240	-0.868	0.206
Too low an education	-0.654	0.504	2.161 *	0.309
Firm size (50+ employees)				
1-9 employees	-0.196	-0.989 **	-0.030	-0.192
10-19 employees	-0.080	-0.492	-0.337	-0.214
20-49 employees	0.510	0.110	0.437	0.244
Business group (fast food sector)				
Cafe sector	-0.542	-0.979 *	0.417	-0.503 *
Restaurant sector	0.025	-0.629	1.079	0.020
Hotel sector	-0.899	0.218	1.778 *	0.127
Department (other departments)				
Kitchen	-0.958	1.012 *	1.387	0.429
Service	-0.137	0.765	0.404	0.463 *
Labour market segment (craft workers)				
Professional workers				0.537 *
Secondary workers				-0.666 **
Physical workload				
Handling weights over 5 kilograms	0.020	-0.198	0.622 **	0.001

Handling weights over 25 kilograms	-0.101	-0.218	0.051	-0.114
Working in uncomfortable positions	0.408 **	0.198	-0.871 **	0.112
Standing/walking uninterruptedly	-0.167	0.049	0.365	0.018
Recurring work	-0.120	-0.009	-0.120	-0.058
Mental workload				
Work organization and direct management	0.117	0.499 **	0.106	0.338 **
Work pace	0.135	-0.036	-0.280	-0.028
Colleagues and unforeseen situations	0.247	-0.158	-0.545 *	-0.079
Discrimination	-0.103	0.215	0.010	0.027
Freedom in work: work pace	0.147	0.170	0.447 *	0.187 **
Guests	-0.172	0.352 *	0.124	-0.030
Freedom in work: work versus private matters	0.031	0.137	0.077	0.106
Age (30-39 years)				
Under 23 years	-0.279	-0.178	-0.010	0.065
23-29 years	-0.074	-0.267	0.530	-0.022
40+ years	-0.856	0.164	-0.330	0.267
Gender (female)				
Male	-0.479	0.282	0.748	-0.105
Native country (the Netherlands)				
Foreign country	0.044	0.967 **	-2.709	0.164
Family situation (without children at home)				
With children at home	-1.007	-2.197 **	0.283	-1.123 **
Educational level (high)				
Low	-0.300	-0.998		-0.499 *
Intermediate	-0.719 *	-0.888	1.504	-0.643 **
Constant	-0.443	0.186	-0.487	-0.738
$X^2(k)$	55.39 (43) *	114.05 (50) **	72.75 (42) **	132.41 (45) **
Correct classified cases (%)	84.9	82.9	81.6	82.4

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : The exact wording is as follows: salary consistent with work = *Do you think your salary being in line with the work to be done?*; work commitment = *My work means a lot to me (yes/no)*; promotional chances = *Do you expect to get promotion in the next two years?*; organizational commitment = *I really have this organization at heart (yes/no)*.

: General training is measured by the number of completed training courses tuned to the hospitality practice (see table 8.3, but exclusive of enterprise specific training).

: A permanent appointment is inclusive of temporary employment with the commitment of a permanent contract.

: Small part-time work = flexible working hours or contractually for at most 11 hours per week; large part-time work = 12-37 hours per week; full-time work = 38+ hours per week.

: Regarding the relationship between work and education the exact wording is as follows: *Within the scope of your work do you have too high, too low or the right education*?

: The indicators of the physical and mental workload equal to the factor scores as estimated in chapter 5.

: Educational level: low = LBO, VMBO and MAVO; intermediate = HAVO, VWO, MHS, apprentice system and other professional education at an intermediate level; high = HHS, university and other high professional education.

: ** = Significantly at α=5%; * = significantly at α=10%.

The perception of underutilization of the qualification level leads to less job satisfaction (see table 8.8). This finding applies especially to workers in the primary labour market, but has no influence on the search for a new job. Job dissatisfaction in this context possibly correlates with alternative withdrawal behaviour. Furthermore, professional employees who believe they have a level of schooling that is too low for their current position are searching for a new job more often than workers with the right educational level. We can expect this limited quality of connection to be largely tied in with the need to be mobile.

Firm size and the business group have no separate effect on search behaviour in the secondary labour market. The same is true for the department in which a person spends most of his time working. For lower tier primary hospitality workers, however, there is a finding of significance for these three aspects. Consistent with the bivariate findings, craft employees in small establishments (1-9 employees) are less often in search of a new job than workers in larger hospitality firms. This observation can point to "close personal relationships in small firms" (Hartog, Mekkelholt and Van Ophem (1987, p. 41)) which stimulate commitment to the organization. Also in line with the bivariate analysis, craft employees in the cafe sector are less often in search of a job with another employer than workers in the fast food sector and kitchen workers are more often in search than workers in the 'other departments' (reference group). In the professional market hotel employees are more often in search of a new job than workers in the other business groups. This finding possibly indicate a relatively strong labour market position of hotel employees with a professional qualification at an intermediate or high level (see section 8.3.2).

In line with expectations, not all aspects of experienced physical and mental workload with a significant effect on overall job satisfaction also influence the search for a new job. This finding is probably tied in with alternative withdrawal decisions. With regard to mental workload, only the view on the work organization and direct management and the freedom regarding work pace are significant predictors of search behaviour in the Dutch hospitality industry. Both work aspects have here the expected effect. The opinion of workers on work organization and direct management has the greatest effect not only on job contentment, but also on the probability of searching for a new job. At the industry level, the search efforts are not significantly influenced by aspects of physical workload. In distinguishing the various labour market segments the search pattern is more nuanced. In the secondary labour market, of all the separate work attitudes (being factor scores), it is only the experience to work frequently in uncomfortable working positions that is a significant determinant of search behaviour. The estimated effect does not conform, however, with the expectation. In the professional market this job aspect has the comparatively largest effect on the search for a new job: the perception of frequently having to work in uncomfortable positions leads to

greater search behaviour (and vice versa, ceteris paribus). Search behaviour amongst professional workers is also significantly influenced by the perceived working relationship with colleagues, the degree to which inconvenience at work is experienced due to unexpected situations and the absence of colleagues (*Colleagues and unforeseen situations*), and by *Freedom in work: work pace*. The corresponding parameter estimates have the expected sign. This does not apply to the observed significant effect of the perception of frequently having to work with loads exceeding 5 kilograms. In line with the estimation results for the entire hospitality industry, on the lower tier of the primary labour ladder the probability of searching for a new paid job is not influenced by aspects of physical workload. With regard to mental workload, search behaviour in this labour market segment is primarily determined by the judgment about the work organization and direct management, followed at some distance behind by the perception of being required to work frequently with difficult and aggressive guests. Only the former work aspect has the expected effect on search behaviour.

After correction for the aforementioned job and firm characteristics, some worker characteristics also have a separate effect on job seach. This particularly applies to country of birth, composition of household (whether there are children living at home) and the initial educational level. Contrary to the description in section 8.3.1, younger employees are not searching in the external labour market any more frequently than their older colleagues. This finding applies to all labour market segments. Conforming to the bivariate exploration, however, the search behaviour of males and females is not significantly different. This finding also applies to all PCS submarkets. Almost two-thirds of all workers born outside the Netherlands have a main job in the Dutch hospitality industry (but without initial professional certification). The search behaviour of this group of workers born abroad is more intensive than that of workers born in the Netherlands. It is conceivable that the earlier mentioned selectivity plays a role here, whereby people with relatively fewer labour market opportunities have a higher probability of being in search of a new job. There is some empirical support for this expectation in the Hospitality Employees Survey. When craft employees born abroad who are in search of a job are asked about their assessment of quickly finding a new job inside or outside the hospitality industry, 54 per cent of them answers negatively, compared to 43 per cent when born in the Netherlands. Conforming to the expectation, hospitality employees with children living at home are less frequently searching for a new job than workers without children living at home. This finding applies to the secondary labour market and to the lower tier of the primary labour ladder, but only in the latter segment significance is perceived. In line with the results of the bivariate analysis, workers with an initial high level of schooling are more often searching for another job than workers educated at a lower level. This can be described as a neoclassical finding, but when differentiated according to the different labour market segments it is only in the secondary labour market, however, where significance is observed. These search efforts by highly educated secondary employees are possibly connected with the hospitality industry as a bridging opportunity in the search for a job appropriate to the knowledge and skills acquired through initial education (see also section 3.6.2).

The estimation results for the Dutch hospitality industry as a whole also reveal that when at the same time account is taken of various job, firm and worker characteristics, the probability of searching for a new job in the external labour market is significantly

influenced by the labour market segment in which the person is employed. Having regard, for example, to differences in human capital (able to be mobile) and the type of contract of employment (need to be mobile), professional employees are more often in search of another employer than lower tier primary workers, who are in turn more often in search of another employer than secondary employees.

Summing up, we can conclude that the estimation results to describe job search behaviour in the PCS submarkets of the Dutch hospitality industry, just as with the multivariate analysis of overall job satisfaction, empirically support the concept of labour market segmentation. Also at this level of the decision making process towards possibly leaving the present employer, we can identify the possibility of segment-specific Human Resources Management.

8.4.3. Employer mobility

The changeover from a job in the Dutch hospitality industry to a paid job in another branch of industry on the initiative of the worker can be regarded as one of the possible outcomes of a withdrawal process pursuant to a dissatisfying work situation (see section 8.3.3). It can therefore be expected that specific factors that are significantly determinant for overall job satisfaction and search behaviour also influence (this type of) employer mobility. We can, however, make a few observations with regard to this expectation. In addition to the concept of overall job satisfaction as a predictor of employee turnover, in the case of discontentment we can distinguish several forms of adaptation as indicated, by which the correlation between job dissatisfaction and job mobility is expected to be less strong than that between search behaviour and turnover. Furthermore, search efforts will not always be successful and can lead to a reconsideration of the present job. Job mobility can also find its origins in driving forces that are independent of the current (better: former) work situation. Personal circumstances, individual psychological factors and alternative opportunities in the external labour market are some examples.

Any small correlation between, on the one hand, overall job dissatisfaction and search efforts and, on the other hand, employer mobility, may possibly also partly be explained in the present investigation by the design of the Hospitality Employees Study, which refers to one measurement moment (September 2001) on the basis of which all mobility groups are drawn up. The analysis of job satisfaction and search behaviour relates to all workers employed in the Dutch hospitality industry in September 2001. Accordingly, this is a different worker group than workers who exchanged their jobs in the hospitality sector in September 2001 for a job in another branch of industry. It is not possible to differentiate 'all' the steps taken by a particular employee in the UWV data set in the withdrawal process from job dissatisfaction to employee turnover (see also section 8.3.3).

At the core of this section is a multivariate analysis of workers who in September 2001 voluntarily moved from a job in the hospitality industry to a job in another branch of industry. Indicators such as (external) mobility, job mobility and related descriptions therefore pertain here to this specific form of employer mobility. Employee turnover in the form of changing of jobs within the Dutch hospitality industry (through-flow) is disregarded, since there is insufficient information available about the hospitality jobs of this worker group prior to the change to the new position in the hospitality sector. With regard to

through-flowers, the research data relate principally to current work in September 2001 and, with regard to workers who have left to work in another industry, to the last job they had in the hospitality sector in the period September '2000-2001'.

Logistic regression reveals that various job, firm and worker characteristics are significantly determinant for the observed employer mobility in the Dutch hospitality industry (see table 8.10). This applies to the hospitality sector as a whole and to the PCS submarkets in particular. Most of the significant parameter estimates here have the expected sign and the empirical mobility models as a whole are significant (at the 5% level).

Higher earnings reduce the probability of a move to a job outside the hospitality industry (and vice versa, ceteris paribus). This income effect is perceived in all labour market segments, but is only significant in the professional market.

Income satisfaction in the form of consistency of salary with work has no significant effect on job mobility. This finding applies to all PCS submarkets. Where the perception of consistency of salary in the secondary labour market correlates positively with overall job satisfaction and negatively with search behaviour, there is therefore an absence of significance with regard to the probability of a transition to a new position outside the hospitality industry. Although it arises relatively less often (see table 8.1) there is possibly a significant correlation with through-flow within the hospitality industry. However, a comparable analysis for this form of employer mobility is not possible.

In the professional market commitment to the work leads to greater job satisfaction (see table 8.8) and to a smaller probability of leaving the organization for a job outside the hospitality industry. Although not under consideration here, we can assume that job motivation in the professional market, due to greater organizational commitment, also reduces the probability of through-flow within the hospitality sector.

Insofar as expectations of promotion in the next two years relate to an expected improved position with the current employer, the estimated partial effect on job mobility in all labour market segments has the expected negative sign. In none of the PCS submarkets, however, is significance perceived.

As with the multivariate analysis of search efforts (see table 8.9) the organizational commitment of hospitality workers also has a separate effect on the probability of employer mobility. In all labour market segments greater commitment to the organization leads to less external mobility. For professional employees the estimated effect is just not significant at the 10% level.

Conforming both to the regression results explaining overall job satisfaction and to the bivariate findings, workers employed for 11 years or more are less often externally mobile than workers who have been employed for a relatively short period (two years or less). A smaller probability of a voluntary move from a hospitality job to a job in another branch of industry amongst workers who have been employed by the same employer for relatively long times is identified particularly on the lower tier of the primary labour ladder. This is possibly explained by the accumulation of rights, a dwindling working life and more limited usability of their human capital in the external labour market (see section 8.3.1). Specific account is taken in the mobility equations of improved quality of connection as a possible explanation, in the form of effective use of the qualification level. On the other hand, leaving for a job outside the hospitality industry is identified relatively the most frequently in this labour market segment amongst workers employed 6-10 years. In the professional market

this applies to workers employed between 3-5 years by the same employer. Likewise in the secondary labour market workers employed 3-5 years are more often externally mobile than workers employed for a shorter period. It is likely that these secondary transitions are largely related to the move by many young people to their first 'real' job after completing initial schooling.

Table 8.10: Employer mobility in the Dutch hospitality industry by labour market segment (logit estimates), PCS method, September 2000 – September 2001

	Secondary workers	Craft workers	Professional workers	Total
Net hourly wage	-0.044	-0.141	-0.537 **	-0.098 **
Salary consistent with work	-0.163	-0.137	1.164	-0.101
Work commitment	0.131	0.334	-1.646 *	0.256
Promotional chances	-0.490	-0.132	-0.169	-0.220
Organizational commitment	-0.638 **	-0.980 **	-1.175	-0.739 **
Job tenure (≤ 2 years)				
3-5 years	1.157 **	0.223	2.707 **	0.722 **
6-10 years	-0.420	0.784 *	0.959	0.501
11+ years	1.355	-2.651 *		-1.197 *
Additional training				
General training (intensity)	0.307 **	0.235 **	-0.206	0.174 **
(Enterprise) specific training	-1.001	-1.345 *	1.561	-0.495
Contract of employment (temporary)				
Permanent	-0.253	0.411	-1.443	-0.136
Contractual working hours per week (small part-time)				
Large part-time	0.500	0.463	-1.719	0.548 **
Full-time	0.144	-0.070	-1.135	0.072
Education fitting in with work (the right education)				
Too high an education	0.226	-0.220	-2.108	-0.077
Too low an education	0.381	0.586	-0.100	0.385
Firm size (50+ employees)				
1-9 employees	0.931 **	-0.201	0.920	0.367
10-19 employees	1.016 **	-0.786	-0.628	0.332
20-49 employees	0.216	-0.511	0.279	0.019
Business group (fast food sector)				
Cafe sector	-0.046	0.824 *	2.488 *	0.408
Restaurant sector	0.440	-0.257	0.284	0.150
Hotel sector	1.054 **	0.576	1.794	0.540 *
Department (other departments)				
Kitchen	-1.104 **	-0.666	-2.270 *	-1.015 **
Service	-0.336	-0.519	-1.763	-0.494 **

Labour market segment (craft workers)				
Professional workers				-0.109
Secondary workers				-0.173
Physical workload				
Handling weights over 5 kilograms	-0.068	0.089	-0.571	0.018
Handling weights over 25 kilograms	-0.095	0.165	-0.700 **	-0.046
Working in uncomfortable positions	-0.059	-0.117	-0.107	-0.136
Standing/walking uninterruptedly	-0.032	0.390 **	-1.065 **	-0.017
Recurring work	-0.160	-0.303 **	-1.048 **	-0.194 **
Mental workload				
Work organization and direct management	-0.207	-0.011	0.900 **	0.081
Work pace	-0.245	-0.002	-0.256	-0.063
Freedom in work: work pace	-0.096	0.304 *	-0.445	0.018
Discrimination	-0.169	-0.112	0.090	-0.080
Guests	-0.319 **	-0.029	-0.538 *	-0.251 **
Freedom in work: work versus private matters	0.249 *	0.161	-0.431	0.125
Age (30-39 years)				
Under 23 years	1.716 **	0.453	0.043	0.549 *
23-29 years	2.236 **	0.034	0.967	0.645 **
40+ years	-0.102	-0.536	-0.212	-0.017
Gender (female)				
Male	0.217	-0.159	-0.187	0.006
Native country (the Netherlands)				
Foreign country	-1.481 *	-0.398		-0.830 **
Family situation (without children at home)				
With children at home	0.784	-0.031	-0.218	0.003
Educational level (high)				
Low	-0.078	-1.482 **		-0.528 *
Intermediate	-0.128	-1.393 **	-0.577	-0.542 **
Constant	-3.866 **	0.745	3.499	-1.044 *
$X^2(k)$	99.44 (42) **	86.39 (42) **	95.54 (39) **	148.70 (44) **
Correct classified cases (%)	86.5	86.4	92.8	85.8

Source : "Werknemersonderzoek horeca, verblijfsrecreatie en contractcateringbranche 2000-2001" (Dutch Board for the Hospitality and Catering Industry (2002b)).

Remarks : The exact wording is as follows: salary consistent with work = *Do you think your salary being in line with the work to be done?*; work commitment = *My work means a lot to me (yes/no)*; promotional chances = *Do you expect to get promotion in the next two years?*; organizational commitment = *I really have this organization at heart (yes/no)*.

: General training is measured by the number of completed training courses tuned to the hospitality practice (see table 8.3, but exclusive of enterprise specific training).

: A permanent appointment is inclusive of temporary employment with the commitment of a permanent contract.

: Small part-time work = flexible working hours or contractually for at most 11 hours per week; large part-time work = 12-37 hours per week; full-time work = 38+ hours per week.

: Regarding the relationship between work and education the exact wording is as follows: *Within the scope of your work do you have too high, too low or the right education*?

: The indicators of the physical and mental workload equal to the factor scores based upon principal components analysis with varimax rotation (see also chapter 5). Because of a different point of departure (i.e. including outflow to another branch of industry) these scores are actually different from those estimated in chapter 5.

: Educational level: low = LBO, VMBO and MAVO; intermediate = HAVO, VWO, MHS, apprentice system and other professional education at an intermediate level; high = HHS, university and other high professional education.

: ** = Significantly at α=5%; * = significantly at α=10%.

For craft employees additional training aimed at working in the hospitality industry has a significant effect on the probability of employer mobility. In conformity with the regression results explaining job search an increase in the number of completed general training courses leads to greater external mobility and the completion of one or more internal courses to less job mobility. Both schooling effects conform to the expectation (see section 8.3.2). Although we can initially expect significant usability of general additional training within the hospitality industry, we can also, of course, conceive of hospitality-related functions outside the hospitality sector where these schooling investments are profitable. Furthermore, additional training could perhaps also be useful in other types of functions, as a result of, for example, management training and courses learning entrepreneurial skills. In the secondary labour market comparable parameter estimates are perceived, but we only identify significance with regard to the influence of general training. Also fitting in with the empirical findings regarding search behaviour, additional training has no significant effect on the probability of employer mobility in the professional market. The SLM prediction whereby the influence of human capital, in the form here of additional schooling, is more systematic on individual labour mobility in the primary labour market than in the secondary segment appears to be only partially empirically supported in the case of change of job to a new job in a different branch of industry. The question as to how far both additional schooling indicators in the different submarkets have a significant effect on through-flow within the hospitality industry requires a separate investigation.

Compared with the other labour market segments it is especially professionally trained hospitality workers with a temporary appointment who have a higher probability of changing their job in the hospitality sector for a job in a different industry than workers with a permanent contract of employment. However, there is just no finding of significance here (at the 10% level). Nor is there significance perceived in the other submarkets.

In line with the description in section 8.3.2, workers with a large part-time job more frequently change to a job in another branch of industry than workers with small part-time work (including variable working hours). By further differentiation according to the PCS

submarkets, however, the size of the job has no effect on the probability of employer mobility. In the professional market the corresponding parameter estimates are nevertheless in accordance with the estimation results of the search model.

Also in line with the multivariate findings regarding search behaviour the perception of underutilization of the qualification level does not lead to greater job mobility. Since a limited quality of connection in this context does, however, lead to greater job dissatisfaction, especially in the primary labour market, then, as indicated, there are perhaps other forms of adaptation that are applicable (Farrell (1983)). In the primary labour market it can be assumed that loyalty and voice are important alternative behaviours. We can also think of exit in the form of searching for a new position within the current organization. Given the emphatic smallness in the Dutch hospitality industry perhaps there is less frequent opportunity to choose this last option. The various types of adjustment to a dissatisfying work situation are expected to be available to all types of workers, but the specific choice will be determined by, for example, the commitment to the organization, personality and previous experiences (see also section 8.3.3).

Firm size only influences the probability of employer mobility in the secondary labour market. Consistent with the empirical findings of the satisfaction model, secondary employees in smaller establishments (1-19 employees) are externally mobile to a job in another branch of industry more often than workers in larger establishments. At the industry level, firm size has no significant effect on job contentment, job search and employer mobility.

In the cafe sector workers in both primary submarkets make the change to a job outside the hospitality industry more often than workers in the fast food sector (and other business groups). In the hotel sector this is only significant for workers in the secondary segment. These differences in mobility between the business groups apply after correction for differences in, for example, mobility power (initial schooling level and additional training). We anticipate that non-measured factors (business culture, etc.) can partly explain these differences in the probability of employer mobility.

In harmony with a professional qualification with considerable usability within the hospitality industry, (searching) kitchen workers are more than averagely in search of a new job within the hospitality sector. Conforming to this search pattern the probability of an external transition to a position outside the hospitality sector for kitchen workers is smaller than for workers in the 'other departments' (management etc.). This finding applies to all PCS submarkets, but there is only a finding of significance in the professional market and the secondary segment. In service too there is a smaller probability of employer mobility than in the 'other departments', but in none of the labour market segments is significance perceived.

Various work attitudes towards the last hospitality job (in the period September '2000-2001') correlate significantly with the probability of a transition to a new position in another branch of industry. Of the different aspects of physical and mental workload most of the significant parameter estimates have the expected sign. It is notable in this context that the search efforts and employer mobility have no shared significant predictors. With regard to physical workload, at the industry level only recurring work has a significant mobility effect. This applies in particular to both primary labour market segments. In the professional market in particular the perception of being required to frequently make repetitive movements

during work or to remain in the same position for long periods leads to greater job mobility. Furthermore, in the professional market the probability of employer mobility correlates positively with the experience of being frequently required to work with very heavy weights exceeding 25 kilograms and to stand or walk for long periods at a time. With regard to the latter work aspect there is also a finding of significance for workers with a (previous) main job in the Dutch hospitality industry, but does not thereby have the expected effect. In the secondary labour market none of the aspects of physical workload has a significant mobility effect. With regard to mental workload, aspects can be identified that are significantly determinant of the probability of employer mobility only for a specific worker group. In the professional market these include the view of workers on the work organization and direct management, for craft employees the perceived opportunities to control pressure of work, and in the secondary labour market the perceived opportunities to harmonise work and private life. Accordingly all estimated effects on employer mobility are in line with expectations. The transition to a job outside the hospitality industry is also further stimulated by the perception of being frequently required to work with difficult and aggressive guests. This finding applies especially to workers in the professional market and in the secondary segment. Looking at all distinguished aspects of physical and mental workload we can also identify work aspects that have no influence in any of the labour market segments on the probability of a change to a job in another branch of industry. These include the perception of being frequently required to work with weights of more than five kilograms, of being required to work frequently in uncomfortable positions, for the perceived pressure of work and aggravating circumstances in the form of discrimination at work due to skin colour or gender.

The estimation results show that certain personal characteristics also have additional explanatory power for the probability of employer mobility. These include age, country of birth and the educational level of the worker. Despite flanking influences of the length of employment and in line with the bivariate findings, young workers up to age 30 are more frequently externally mobile than workers in the reference group (30-39 years). There is only significance observed here in the secondary labour market. We can expect these secondary transitions to a job outside the hospitality industry, just as with the length of employment, to be largely related to the completion of initial schooling. Also in line with the description in section 8.3.1 and conforming to the regression results explaining job search, there is no significant difference in job mobility between males and females. Over 70 per cent of workers born outside the Netherlands who are in search of a new job in the external labour market try to obtain a new position within the hospitality industry. Conforming to this search pattern and to the bivariate findings, workers born in the Netherlands change to a job in another industry more often than workers born abroad, although there is only a significant effect in the secondary labour market. The presence of children living at home is not determinant of the probability of employer mobility. This finding applies to all PCS submarkets and does not fit in with the description in section 8.3.1 and the regression results explaining search behaviour. At the industry level, workers with an initially high level of education are more often in search of a new job and more often externally mobile than workers with a lower level of education. This neoclassical combination may indicate a relatively strong labour market position of workers who are highly trained. In further differentiating between the various labour market segments it is only on the lower tier of the

primary spectrum that there is a finding of significance here regarding the probability of job mobility. In the case of search efforts this was observed only in the secondary labour market. If we take at the same time into account the aforementioned predictors of employer mobility, including, the worker's age, the type of contract of employment and the composition of the human capital, then the probability of leaving the hospitality sector for a job in another branch of industry is not dependent upon the labour market segment in which the worker is (was) employed. It is clear that the estimation results of the various mobility models in this section cannot be directly related to the external mobility predictions in chapter 3 (hypothesis 11), since the empirical investigation in chapter 3 does not take account of workers who left the hospitality sector (outflow) in September 2001. This also applies therefore to the employer mobility studied here.

In summary, we can conclude that just as for overall job satisfaction and search behaviour we can also identify in actual employer mobility (to a job outside the hospitality industry) mobility processes that are in part segment-specific. In this light, the characterisation of the labour market in the Dutch hospitality industry as being segmented appears appropriate.

8.4.4. Internal mobility

Besides external transitions, changes of job within an organization can also contribute to an optimal (re)allocation of labour. As an addition to the description in section 8.3, in this section we discuss internal mobility in the Dutch hospitality industry in a multivariate setting. The structure of the Hospitality Employees Study, however, prevents an appropriate analysis of internal mobility. Given the available data, the occurrence of intraorganizational mobility can only be indirectly defined as the situation in which a worker in September 2001 is employed by the current employer for longer than he works in the present job. It is not possible to establish when the most recent and any previous changes in job within the organization occurred. With the exception of constant profiles, such as gender and country of birth, we cannot therefore identify the job, firm and employee characteristics applicable at the relevant time with regard to intraorganizational mobility. Even if the moments of function mobility were known, it is still not possible to indicate the relevant characteristics and circumstances, since it is mainly only data with respect to the current work situation (September 2001) that is available. This is the case in regard, for example, to the type of contract of employment, the size of the job, the function level and the department in which the employee spends most time working. Only regarding completed additional training is this obviously data relating to the (recent) past. In common with the internal job changes, the time of completion of hospitality courses is also not known. In contrast to the observed internal mobility, it may happen that certain courses were completed whilst working for a previous employer. Accordingly, it is not possible to establish whether certain training courses have led to an internal change in job or indeed are the consequence of such an internal transition.

The analysis of internal mobility in section 8.3 makes the implicit assumption that the work situation and personal circumstances in September 2001 also apply at the time of the most recent internal change in job. It is clear that this assumption is not an obvious one in respect of all mobility groups and job characteristics. In September 2001, inflowers and through-

flowers are employed for less than a year with the relevant employer (see table 8.1). For these mobility groups the assumption of more or less similar circumstances is perhaps more plausible than for the group of workers who did not change employer in the period September '2000-2001'. Non-movers are employed on average for over five years with the same employer in September 2001 (see table 3.18), so that internal mobility for this worker group is not limited to transitions in the last year. Section 8.2 describes how 14 per cent of all hospitality employees in September 2001 changed their job internally at least once. Three-quarters of these more than 40,000 internally mobile workers belongs to the group of non-movers and therefore approximately a quarter of them to the groups of inflowers and through-flowers.

Despite the limitations to the data, some regression analyses are nevertheless carried out, particularly in order to estimate the influence of (more or less) constant profiles on the probability of internal mobility in a more integrate setting. Some estimation results can be summarised as follows[169]. Various (current) job, firm and worker characteristics are significant predictors of the probability of intraorganizational mobility. This conclusion holds true for the Dutch hospitality industry as a whole and for the PCS submarkets in particular. Furthermore, the various empirical internal mobility models as a whole are significant. It can generally be assumed that internal mobility in the secondary segment is frequently coupled with a horizontal transition, whilst in the primary labour market it has a more frequent link with an improvement in position. However, the design of the Hospitality Employees Study does not enable a distinction to be made between horizontal and vertical function mobility.

After correction for, inter alia, the business group and firm size, at the industry level the probability of internal mobility amongst employees born abroad is significantly smaller than amongst workers born in the Netherlands. This finding is in line with the description in table 8.3. By further differentiation according to the PCS submarkets, it is only on the lower tier of the primary labour ladder that significance is perceived. Although the lagging behind of workers born outside the Netherlands with regard to internal job changes can be linked to the type of work traditionally performed, we cannot exclude that in line with the segmentation theory there is also an incidence of discriminatory factors. Taking into account, for example, additional training completed, men are not internally mobile any more frequently than women. There is no finding of significance here in any of the labour market segments. Despite the definition of internal mobility, the probability of an internal job transition is not significantly different between the various age groups. This finding applies to all labour market segments. It is clear that at the time of the most recent (and previous) internal change in job the worker was (somewhat) younger than at the time he completed the questionnaire. With the exception of borderline cases we can assume the same age group for both inflowers and through-flowers. For non-movers there is a higher probability that at the time of the most recent internal transition the relevant worker was in a younger age category. The probability of function mobility increases in proportion to the level of initial schooling of the worker. This neoclassical finding at the industry level is in accordance with the description in section 8.3.1. On the primary labour ladder this influence of the human capital

---

[169] The results of the various logistic regressions can be provided on request.

is only perceived in the professional market. Not in harmony with the segmentation theory, significance is also observed in the secondary labour market segment. Insofar as additional training can be regarded as a predictor of internal labour mobility, the estimation results at the industry level conform to the expectation: the completion of both one or more internal training courses and of an increasing number of general courses tuned to the hospitality practice lead to a greater probability of intraorganizational mobility. However, there is only a finding of significance with regard to the influence of general training. Neither form of additional hospitality training has a significant effect on function mobility on the primary labour ladder. In the secondary labour market it is only the completion of one or more internal training courses that leads to greater internal mobility. These findings are not consistent with the segmentation theory. Given the limitations of the data, obviously an appropriate analysis is required for a more convincing conclusion.

In accordance with the description in section 8.3.2, hospitality employees in larger establishments are more often internally mobile than in smaller organizations. This finding at the industry level is, however, more nuanced when we differentiate according to the different labour market segments. It is notable that in the professional market firm size is not significantly determinant of the probability of internal mobility. On the lower tier of the primary labour ladder only workers in the smallest establishments (1-9 employees) have a substantially smaller probability of an internal transition than workers in the reference group (50+ employees). For secondary workers this only applies in establishments with 20-49 employees. Although the number of workers in a firm will change over time, we can nevertheless assume a certain constancy with respect to the relevant firm size group, so that, with the exception of borderline situations, the firm can probably often be allocated to the same size class both at the moment of the last internal job transition and at the present time (September 2001). This constancy possibly applies even more to the business group. Only in the professional market do workers in the hotel sector have a significantly higher probability of internal mobility than workers in the fast food sector (and other business groups). In the other two labour market segments the business group is not significantly determinant of internal labour mobility. In section 8.3.2 the observed differences in function mobility between the business groups are particularly connected with differences in firm size and additional training completed. In this multivariate setting, however, account is already taken of both these predictors. Conforming to the bivariate findings, kitchen employees are as frequently internally mobile as workers in the reference group (management etc.) and in this comparison service workers have a significantly smaller probability of an internal transition. In all labour market segments the parameter estimates here have the expected sign. It can be expected that many of the internal changes in job will occur within the same department, but transitions between departments are also perfectly conceivable. Other (current) job characteristics, such as the type of contract of employment and job size have no additional explanatory power.

The estimation results at the industry level show that the labour market segment being employed in has also a separate effect on the probability of intraorganizational mobility. In accordance with hypothesis 12 in chapter 3, workers on the secondary labour ladder are less frequently internally mobile than primary employees. Within the primary domain it is notable that workers in the lower tier have a significantly higher probability of a change in job within the organization than professionally trained workers.

In summary, we can conclude that in an 'internal setting' too we can identify significant differences in the explanatory process of labour mobility between the PCS submarkets. The perceived differences are not, however, always in harmony with the SLM predictions. In chapter 2 we discussed the expectation that empirical investigations will not infrequently be characterised by limitations in data. In this chapter we can identify serious shortcomings in the available data particularly for an accurate analysis of internal mobility in the Dutch hospitality industry. The discussion in this section offers here various leads for improving the design of the Hospitality Employees Study in the near future.

8.5. Summary, conclusions and discussion

The final topic of this thesis is an empirical investigation of labour mobility in the Dutch hospitality industry. As with different wage-setting processes (chapter 5) and a different emphasis on forms of labour flexibility (chapters 6 and 7), different mobility processes between worker groups and being consistent with the SLM expectations can also be regarded as an indication of the empirical plausibility of a segmented labour market. Neoclassical theory does not assume the presence of labour market segments and predicts that positions on the labour ladder are primarily determined by the wealth in human capital of workers. According to the segmentation theory, the influence of this capital on labour mobility in the primary labour market is more systematic than for workers on the secondary labour ladder. To investigate the extent to which the mobility practices perceived in the Dutch hospitality industry are dependent on the labour market segment with which a worker is identified, a number of multivariate analyses of intention to quit and actual labour mobility have been worked through, differentiated according to the professional, craft and secondary market (PCS submarkets, see chapter 3). Research literature reveals that different influencing factors can be identified for (potential) individual labour mobility, including various worker, job and firm characteristics and market conditions (see section 8.3). This range of determinants enables account to be taken of various reasons for mobility. These reasons include the wish, the ability and the need to be mobile. An important addition to the empirical studies into labour mobility in the Netherlands in Hartog, Mekkelholt and Van Ophem (1987), Dekker, De Grip and Heijke (1995), De Graaf and Luijkx (1997) and, for example, De Wolff, Luijkx and Kerkhofs (2002) is the inclusion of various aspects of physical and mental workload as predictors of (potential) mobility in the various regression equations. These working conditions relate, for example, to the opinion of the worker on the work organization, direct management, colleagues, guests, freedom in work, pressure of work and various forms of physical workload. Alongside other (more objective) job characteristics, such as the type of contract of employment and job size, we can expect that work attitudes also influence the "the balance of satisfactions and dissatisfactions" (Price (2004, p. 6)) and thereby mobility thought and behaviour. As a starting point for the present investigation into labour mobility in the Dutch hospitality industry use is made of the Hospitality Employees Study 2002 (see chapter 3), with reference to the employment situation in September 2001 and external mobility flows in the period September 2000 – September 2001 (excluding multiple mobility). Some empirical findings can be summarised as follows.

External labour mobility is characteristic of the Dutch hospitality industry. Over half of all 305,500 hospitality workers employed in September 2001 can be described as 'fresh blood': 32 per cent joined this branch of industry in the period September '2000-2001' (inflow) and 23 per cent changed employer within the hospitality sector (through-flow, see table 8.1). In line with the SLM predictions concerning the stability of jobs and workers (see chapter 2), external labour mobility in the Dutch hospitality industry occurs relatively more often in the secondary labour market segment than amongst primary employees. Also in line with the segmentation theory, the inflow in the secondary segment is considerably greater than the through-flow, whereas in the professional market the opposite is true. For workers with an initial professional qualification at an intermediate or high level, we can expect that initially it is the connection with the hospitality industry that will be strong, since the acquired productive knowledge and skills can be profited from by a relatively large number of employers within the sector. For workers with a secondary job in the Dutch hospitality industry, connection with the work, the organization and the industry is expected to be less strong than within the primary worker group. A case in point is the finding that 56 per cent of all secondary employees responds affirmatively to the statement *My work means a lot to me*, whereas this figure is almost 90 per cent in both primary submarkets. Furthermore, 82 per cent of the professionally trained workers and almost 60 per cent of the workers in the lower tier of the primary labour market believe they will work, as from now, for a relatively long period (5+ years) in the Dutch hospitality industry, whereas over half of all secondary employees think their time still be working in this sector will be short (< 2 years). In line with these expectations, the actual outflow of secondary workers from the hospitality industry in the period September '2000-2001' is significantly greater than that of workers on the primary labour ladder: 34 per cent compared, for example, to 19 per cent in the professional market, respectively. Conforming to the emphasis on temporary appointments and the connection with work, the firm and the industry, the inflow and outflow figures illustrate the traditional coming and going of secondary workers: in the period September '2000-2001' there are over 100,000 transitions from and to the secondary labour market segment (excluding multiple mobility), compared to under 20,000 in the professional market (see table 8.1). Also compared with other branches of industry in the Netherlands we can conclude that the external labour market dynamic in the hospitality sector is strong (see, for example, Hartog, Mekkelholt and Van Ophem (1987), Van der Hoeven (1990) and De Graaf and Luijkx (1997); see also table 8.2).

Overall job satisfaction – The literature regards overall job satisfaction as an important indicator in the decision-forming process of workers as to whether or not they wish to leave their current organization (see, for example, Mobley (1977), Porter and Steers (1973), Rosse and Noel (1996) and Price (2004)). For the entire Dutch hospitality industry also, larger pressure on overall satisfaction with work has a negative correlation with immobility and a positive correlation with job search behaviour and voluntary employer mobility (to a job in another branch of industry, see table 8.5). These findings accord with the assumption of Price (2004, p. 6) that "More dissatisfactions than satisfactions, for instance, means a situation that is costly to the employees. It is assumed that employees will attempt to leave a costly situation.". In terms of March and Simon (1958) this *desirability of movement* is

determined by the inducement-contribution ratio experienced and in the Porter-Steers model by the degree of *met expectations* (see section 8.3.3). With regard to the antecedents of overall job satisfaction in the Dutch hospitality industry, the logit estimates of the various satisfaction models demonstrate that specific job aspects can be identified as significant predictors of job contentment (see table 8.8). This applies to both the hospitality industry as a whole and to the primary and secondary labour market in particular (see fn. 166). A short discussion of some determinants follows below; for greater detail see section 8.4.1.

Higher earnings lead to greater (probability of) overall job satisfaction. It is notable that there is only significance perceived here for secondary employees. These *Allemansfuncties* are largely filled by students and youngsters of school age and we can expect that such age groups place a relatively high value on the monetary aspect of paid work, i.e. being a part of his or her *expectation set* (Porter and Steers (1973)).

Conforming to expectations, longer periods of employment lead to greater job satisfaction. At the industry level, hospitality workers employed for six years or more are more satisfied with their current work than employees who are in their jobs for a relatively short period (two years or less). A greater probability of job contentment with longer periods of employment can relate to a better connection quality (between worker and job), but also be connected, for example, with satisfaction as a sign of adaptation (see section 8.3.1). The influence of the length of employment on job satisfaction only has explanatory power in the primary labour market segment.

For the hospitality industry as a whole, workers who have completed one or more internal courses are more satisfied with their current work than workers without this form of additional training. This finding is in line with the expectation that through greater opportunities for promotion and thereby greater commitment to the organization, (substantial) firm specific training increases the probability of internal mobility and reduces the probability of search behaviour and external mobility. This expectation applies particularly to the primary labour market, although in this labour market segment there is just no significance observed (at the 10% level). Nor is there significance on the secondary labour ladder.

The number of completed general courses tuned to the hospitality practice has no significant effect on overall job satisfaction. This also applies to both submarkets. It is possible that compensating influences are at play here. On the one hand we can expect that just as with firm specific training, adequate general training likewise increases the probability of (vertical) internal mobility (greater satisfaction), whilst on the other hand we can assume that general additional training leads to greater knowledge and skills with a large degree of usability within the hospitality industry (and possibly outside) and thereby to a lower inducement-contribution ratio experienced with regard to current work (less satisfaction).

The perception of underutilization of the qualification level occurs at all layers of the hospitality organization. Chapter 3 offers a number of explanations for this finding, conforming to both the segmentation theory and the neoclassical line of thought. In accordance with the dual labour market theory, underutilization in the Dutch hospitality industry leads to less job contentment. This applies particularly to workers in the primary labour market segment. Despite more or less comparable parameter estimates there is no finding of significance on the secondary labour ladder. These estimation results support hypothesis 14 in chapter 3.

Satisfaction with current work is also determined by the assessment of workers of specific aspects of physical and mental workload. The estimation results reveal that many work aspects that we can assume to affect primarily mental workload have a significant effect on overall job satisfaction. All significant parameter estimates have here the expected sign. For the hospitality industry as a whole the opinion on work organization and direct management has the largest effect on job satisfaction, some way ahead of perceived pressure of work. This sequence also applies to the primary labour market. By contrast, the overall job satisfaction of secondary employees in the Dutch hospitality industry is largely determined, after the view on work organization and direct management, by perceived opportunities to harmonise work and private life. For young people, it is expected that this harmonisation relates especially to the opportunities to combine the secondary job effectively with education and in the case of (older) women with child care and household responsibilities. Given the use of estimated factor scores in the various logistic regressions in section 8.4, the different aspects of workload refer not to the specific questions in the Hospitality Employees Study, but each such score to a number of underlying strongly correlating work aspects (see chapter 5). Thus, for example, the opinion of the worker about work organization and direct management specifically relates to seven individual work aspects, identified as: work organization, work progress, work responsibility, management and style, management and image of worker, management and paying attention and management and career training (see table 5.5). Both the pressure of work and the space in which to unwind from this pressure have considerably greater influence on job satisfaction in the primary labour market than in the secondary segment. Satisfaction with current work is also significantly influenced by the working relationship with colleagues and the degree to which problems at work are experienced due to unforeseen situations and the absence of colleagues (as a factor score labelled *Colleagues and unforeseen situations*). The estimated effect is of a comparable order in both labour market segments. Furthermore, discrimination at work due to skin colour or gender has a negative effect on job satisfaction, although it is only in the primary labour market where there is a finding of significance.

With regard to physical workload, at the industry level hospitality employees with the view that during work they are frequently required to make repeated movements or to work in the same position for long periods (labelled *Recurring work*) are less satisfied. Despite comparable parameter estimates, however, there is an absence of significance for this work aspect in both submarkets. For workers with a secondary job in the Dutch hospitality industry none of the five (summarized) aspects of physical workload has a significant effect on job satisfaction. In the primary labour market only the perception of being required to work frequently with weights of over five kilograms has a significant effect on job satisfaction together with the expected sign: greater physical workload leading to less contentment.

Overall job satisfaction is not dependent on the type of contract of employment, job size and the business group being employed in. These empirical findings hold for the hospitality industry as a whole and for the two worker groups in particular. Furthermore, firm size has only explanatory power in the secondary labour market: workers in establishments of 10-19 employees are significantly less satisfied than workers in the largest size class (50+ employees).

After correction for the various job and firm characteristics, worker characteristics such as age, gender, country of birth, composition of household (with or without children living at home) and the initial schooling level attained provide no additional explanatory power.

Summing up, the estimation results illustrate a partly different explanatory process of overall job satisfaction between primary and secondary worker groups in the Dutch hospitality industry. We can identify job aspects as predictors of job contentment that are unique to a labour market segment, such as individual earnings for secondary employees and the perception of underutilization of the qualification level for workers on the primary labour ladder. We can also distinguish determinants that are significant for both worker groups, but where the estimated partial effect is clearly different. Examples include experienced pressure of work, the freedoms in this regard and the opportunities to effectively combine formal employment with tasks in the private sphere. We can further identify job characteristics that have no significant influence on overall job satisfaction for either worker group. This applies, for example, for the type of contract of employment and job size (as instruments of labour flexibility). To stimulate functional immobility, i.e. to retain valued workers within the organization (see fn. 144), knowledge of their expectation set is important. In this context the regression results of the satisfaction models possibly offer some starting points for segment-specific Human Resources Management; at any rate in this setting for a representative worker in the relevant submarket.

Alternative withdrawal behaviour – The empirical literature often refers to a significant but limited correlation between overall job satisfaction and voluntary employee turnover. Various explanations can be put forward for this. A worker leaving his current organization voluntarily is only one possible form of behaviour as a result of (sufficient) job dissatisfaction. Adaptation in response to a dissatisfying work situation can take various forms, including physical withdrawal behaviour such as absence from work, turning up late and voluntary leaving, and also include responses of a more psychological nature such as malingering and day dreaming (see, for example, Rosse and Miller (1984)). In Farrell's model (1983) job dissatisfaction is expressed in four separate response categories: exit, voice, loyalty and neglect (see fn. 147). In the present SLM setting we can assume that in the secondary labour market segment job dissatisfaction will be mostly exhibited by the hospitality worker through exit and neglect, whereas loyalty and voice will be the behavioural alternatives more reserved to workers on the primary labour ladder (see section 8.3.3). In theory, however, the different response options for job dissatisfaction seem available to all workers, but the specific withdrawal behaviour will be determined by circumstances such as commitment to the organization, personality and previous experiences. Expectations are that destructive work attitudes such as "lax and disregardful behavior" (Farrell (1983, p. 598)) and "malicious gossip" (Rosse and Noel (1996, p. 454)) can cause substantial harm to a business undertaking. Therefore, for this reason too the job contentment of workers should be a continuing focus of attention for the policy agenda of an organization.

Voluntary employee turnover unrelated to the current work situation – Another source of a possible weak correlation between overall job satisfaction and voluntary turnover is the finding that workers can voluntarily leave the organization for reasons other than the current

work situation. Examples include (temporary) withdrawal from the labour market to study, take care of another or follow ones partner (i.e. "commitment to a kinship role" (Price (2004, p. 9))) and alternative job opportunities in the external labour market that the worker generally regard as (even) more attractive than the current job. The worker is here, so to speak, pulled from the organization without there being possibly internal reasons for external mobility (being pushed). The organization literature also focuses specific attention on the personality of the employee as a predictor of voluntary turnover (see, for example, Porter and Steers (1973), Rosse and Noel (1996) and Maertz (2004)). As an example, some workers will regularly wish to change job, not so much influenced by their current work situation but, on the basis of a "change is good" value (Maertz (2004, p. 118)), to have different work experiences. These restless workers are described in the literature as "job hoppers" (Bernardin (1977)) or "hobos" (see, for example, Ghiselli (1974) and Hulin, Roznowski and Hachiya (1985)).

Job search – As an indicator of intention to quit, the search for a job with another employer, just like job satisfaction, can be regarded as a pillar in the withdrawal process towards a possible leaving of the current organization. Based on the above-mentioned differentiations regarding the correlation between job contentment and employee turnover it is clear that workers may, for various reasons, be in search of a job in the external labour market. Insofar as this search behaviour is determined by the current work situation (push), we can expect that certain factors that are significantly determinant for overall job satisfaction also influence this manifestation of intention to quit; "thoughts of quitting" is another manifestation of mobility aspirations (Mobley (1977, p. 237)). Logistic regression reveals that various job, firm and worker characteristics can be identified as having a significant effect on the probability that employees in the Dutch hospitality industry currently (September 2001) are searching for a new job (see table 8.9). Most of the significant parameter estimates have the expected sign. Conforming to the concept of a segmented labour market, the relevant determinants mostly have explanatory power only for a specific worker group. Insofar as these are controllable work aspects for an organization, then on this level in the withdrawal process too we can identify the opportunity for segment-specific staff policy. Some empirical findings can be summarized as follows; see section 8.4.2 for more detail.

In line with the SLM predictions, the influence of human capital in the form of additional training on the probability that workers are currently looking for a job with another employer in the primary labour market is more systematic than in the secondary segment. This conclusion particularly holds in a comparison of hospitality employees on the lower tier of the primary labour ladder and workers with a secondary job. Conforming to the expectation of greater opportunities for promotion and organizational commitment, craft workers in the Dutch hospitality industry who have completed one or more internal training courses are less frequently in search of a job than workers without this specific training. On the other hand, an increase in the number of general courses completed within this primary worker group leads to an intensifying of search behaviour. This finding conforms to the expectation that general training correlates with the acquisition of productive knowledge and skills with a relatively large degree of usability within the hospitality industry (and possibly also beyond). It is notable that the search efforts in the professional market are not

dependent on completed additional training. Insofar as internal training is also used to stimulate commitment to the organization, this strategy therefore appears to be particularly effective in the lower tier of the primary labour market.

Although underutilization of the qualification level in the primary labour market leads to significantly less job satisfaction, this perception has no influence on the search for a new job. It is possible that dissatisfaction with current work is linked in this context to alternative withdrawal behaviour.

In the professional market workers who believe that they have an inadequate level of initial schooling for their current job (despite a formal professional qualification at an intermediate or high level) are observed to be more often searching than with just the right education. The expectation is that this limited quality of connection correlates to a large degree with the need to be mobile.

Not all workload experienced having a significant effect on overall job satisfaction also influence the search behaviour for a new job. At the industry level, for example, six of the seven summarized aspects (factor scores) of mental workload are significantly determinant of satisfaction with current work. For search behaviour this is reduced to two work aspects. Alternative response categories, destructive and constructive (Farrell (1983)), are probably the reason for this reduction. With regard to mental workload it is particularly the view about the work organization and direct management and freedoms in work concerning pressure of work that are significantly determinant of search behaviour. Both determinants have here the expected effect. At the industry level, the view of workers about the work organization and direct management not only has the largest effect on overall job satisfaction, but also on the probability that workers are searching for a new job. Search behaviour at the industry level is not significantly influenced by aspects of the physical workload.

In differentiating between the various worker groups, job search in response to experienced workload is more nuanced. The search behaviour of secondary employees in the Dutch hospitality industry is not influenced by most aspects of the physical and mental workload. In the professional market of all (twelve) summarized aspects of the workload, the perception of being required to work frequently in uncomfortable positions has the greatest influence on search behaviour and the expected effect: the more often this work experience, the greater the probability of being in search of a new job (and vice versa, ceteris paribus). The search for a job with another employer is also significantly influenced in the professional market by the working relationship with colleagues and the degree to which problems at work are caused by unforeseen situations and the absence of colleagues and by the opportunity to be able to control work pressure oneself. Here also the corresponding parameter estimates have the expected sign. By contrast, for hospitality employees in the lower tier of the primary labour market search behaviour is particularly determined by the view as to work organization and direct management. It is only for this worker group that this work aspect is significantly determinant for the search for a new job and having the expected effect. In line with the estimation results for the entire hospitality industry, search behaviour on the lower tier of the primary labour ladder is not dependent on aspects of the physical workload.

In contrast to the empirical findings regarding overall job satisfaction, there are also some employee characteristics with additional explanatory power for search behaviour, namely

country of birth, composition of household and the initial educational level attained. The age and gender of the worker are not significant predictors of search behaviour.

Almost two-thirds of workers born outside the Netherlands has a main job in the Dutch hospitality industry (but no initial professional qualification at an intermediate or high level). These employees are more often in search of a job with another employer than workers in the reference group (born in the Netherlands). It is possible that selectivity plays a role here, whereby people with relatively fewer labour market opportunities have a higher probability of being identified at a given point in time as job searching (see fn. 168). There is some empirical support for this possibility: when job-searching workers in the lower tier of the primary labour market are asked for their assessment of ability to quickly find another job within or outside the hospitality industry, 54 per cent of the workers born outside the Netherlands answers negatively compared to 43 per cent of the workers in the reference group.

In accordance with the bivariate examination in section 8.3.1, workers with children living at home are less often searching for a new job than workers with no children living at home. This finding applies to workers with a secondary job and to workers on the lower tier of the primary labour ladder, although significance is only perceived in the latter labour market segment.

Also in line with the picture in section 8.3.1, workers with a high level of initial schooling are more often identified as searching than workers with a lower educational level. In differentiating the various worker groups significance is only observed in the secondary labour market. The search efforts of these highly-educated workers with a secondary job in the Dutch hospitality industry may possibly relate to the hospitality sector seen as offering transitional work in the search for a more appropriate job in line with the knowledge and skills acquired in general education (see also section 3.6.2).

In contrast to the logit estimates of overall job satisfaction, the estimation results regarding current job search behaviour at the industry level show that if at the same time the various job, firm and worker characteristics are taken into account then the probability of searching for a job with another employer is significantly influenced by the labour market segment with which a worker is identified. Taking account of, for example, the variations in the wealth of human capital (able to be mobile) and the type of contract of employment (need to be mobile), professionally-trained workers have a higher probability of being identified as job searching than workers in the lower tier of the primary labour market, who in turn have a higher probability than workers with a secondary job in the Dutch hospitality industry. In September 2001, 19 per cent of all hospitality employees is searching for a job with another employer (see table 8.1). In the professional market this is 26 per cent, compared, for example, to 14 per cent in the secondary labour market. Consistent with the relatively large degree of usability of the acquired productive knowledge and skills within the hospitality industry, over 60 per cent of searching professional employees is searching for a new position within the industry, whereas a comparable proportion of the workers with a secondary job are looking outside the hospitality industry to move, for example, to another secondary job or a job more appropriate for the initial schooling investments.

Employer mobility – One form of employer mobility which this chapter particularly focuses on for a multivariate investigation is the change from a job in the Dutch hospitality

industry to a job in another branch of industry on the initiative of the worker. In the context of maintaining both sufficiently and an adequate number of qualified employees in the hospitality industry, this is an important subject in terms of policy. Due to the design of the Hospitality Employees Study an appropriate analysis of through-flow within the hospitality sector as an alternative manifestation of employer mobility is not possible (see section 8.4.3). Therefore, without additional explanation employer mobility and related terms hereinafter specifically refer to a move from a job in the Dutch hospitality industry to a job in another industry.

Voluntary quitting of an organization can be regarded as one of the possible results of a withdrawal process caused by a dissatisfying work situation. We can therefore expect that certain factors that are significantly determinant of overall job satisfaction and search efforts in the external labour market are also determinant of employee turnover. Given the possible alternative behaviours in the event of job dissatisfaction we can expect that the correlation between job discontentment and employee turnover will be less strong than that between search efforts and leaving the organization. The search for a job with another employer will not always, however, be successful and can lead to a reconsideration of the current job. Furthermore, as indicated, employer mobility may find its origins also in factors unrelated to the current work situation.

Looked at from the last job in the Dutch hospitality industry, logit estimates reveal that various job and firm characteristics can be identified as significant predictors of the probability of employer mobility. This applies also to certain worker characteristics (see table 8.10). Most of the significant parameter estimates have here the expected sign and the estimated mobility model as a whole is significant for each worker group. Some determinants can be explained as follows; see section 8.4.3 for more detail.

Higher earnings reduce the probability of employer mobility (and vice versa, ceteris paribus). This income effect applies to all worker groups, but it is only significant in the professional market.

In the professional market, commitment to work leads to greater job satisfaction (see table 8.8) and to a smaller probability of quitting the organization for a job outside the hospitality industry. Although not under consideration here, we can assume that job motivation in the professional market, through greater organizational commitment, also reduces the probability of through-flow within the hospitality industry.

In line with the logit estimates of overall job satisfaction and the description in section 8.3.1, workers employed for 11 or more years are less frequently externally mobile than workers who have been employed for a relatively short period (two years or less). There is a finding of a smaller probability of employer mobility amongst workers with relatively long periods of employment especially on the lower tier of the primary labour ladder. This is possibly explained by a limited usability in the external labour market of the human capital built up within the organization, acquired rights and a period of declining working life. On the other hand, job mobility in this labour market segment is relatively most frequent amongst workers employed between 6-10 years. In the professional market this holds for workers who have been employed 3-5 years by the same employer. In the secondary labour market also, workers employed 3-5 years are more often externally mobile than workers with a shorter period of employment. These secondary transitions are probably largely connected to

the move by many young people to their first 'real' job after completing their initial education.

Consistent with the logit estimates of search behaviour, an increase in the number of completed general hospitality courses in the lower tier of the primary labour market leads to greater employer mobility and the completion of one or more internal training courses to less turnover. Although we can initially expect a large degree of usability within the hospitality industry from general training, it is naturally also conceivable there are hospitality-related jobs outside the hospitality sector where these schooling investments could be profitable. Furthermore, additional training with a general character could also be of possible use in other kinds of jobs, as a result of, for example, management training and courses learning entrepreneurial skills. Comparable parameter estimates are perceived for employees with a (previous) secondary job in the Dutch hospitality industry, but there is only significance for the effect of general additional training. Also conforming to the estimation results of the search model, additional schooling investments in the professional market are not significantly determinant of the probability of employer mobility.

In line with the empirical findings for search behaviour the perception of underutilization of the qualification level does not lead to greater employee turnover. Since a limited quality of connection in this context does, however, lead to greater job dissatisfaction, especially in the primary labour market then, as indicated, other response categories are perhaps in order.

Conforming to a professional qualification with a large degree of usability within the hospitality industry, (searching) kitchen workers are more than averagely in search of a new job within the hospitality sector. In line with this search pattern the probability of employer mobility to a new job outside the hospitality industry is significant smaller for kitchen employees than for workers in the reference group (management etc.). This finding applies to all worker groups, although significance is only perceived in the professional and secondary labour market segment.

Various work attitudes towards the last hospitality job are (have been) also significantly determinant of the probability of voluntary quitting to find a job in another branch of industry. Of the various summarized aspects of physical and mental workload (factor scores) most of the significant parameter estimates have the expected sign. With regard to physical workload, job mobility in the professional market correlates positively with the perception of being frequently required to stand or walk for long periods at a time at work, of often being required to make repetitive movements or to remain in the same position for a long time during work (labelled *Recurring work*) and the perception of often being required to work with very heavy weights of over 25 kilograms. In the lower tier of the primary labour market only *Recurring work* has a significant mobility effect together with the expected sign, although the estimated partial effect is considerably smaller than in the professional market. In the secondary labour market none of the summarized aspects of physical workload has a significant effect on employee turnover.

With regard to mental workload, we can identify aspects that are significant predictors of employer mobility only for a specific worker group. In the professional market this is the opinion of workers about the work organization and direct management, whereas for workers in the lower tier of the primary labour market it is the perceived opportunities to regulate work pressure oneself, and in the secondary labour market the perceived opportunities to be able to combine work and private life. All the parameter estimates have

here the expected effect. Furthermore the change to a job outside the hospitality industry is also stimulated by the perception of often being required to deal with difficult and aggressive guests. This finding particularly holds for workers in the professional market and in the secondary segment. In surveying all differentiated aspects of physical and mental workload we can also identify working conditions that have no significant influence on the probability of a change to a job in another branch of industry for any of the worker groups. This applies to the perception of having to work frequently with weights of over five kilograms, the requirement to often work in uncomfortable positions, the perception of pressure of work and aggravating circumstances in the form of discrimination at work.

After correction for the various job and firm characteristics some worker characteristics also have additional explanatory power for the probability of employer mobility, namely age, country of birth and the educational level of the worker.

Despite flanking influences of the length of period of employment and in line with the description in section 8.3.1, younger workers to age 30 are more often externally mobile than workers in the reference group (30-39 years). There is only a finding of significance here for the secondary labour market and these job changes are expected to be substantially related to the completion of the initial education.

Insofar as employees born outside the Netherlands are in search of a job with another employer, over 70 per cent of them is trying to obtain a new job within the hospitality industry. Conforming to this search pattern and the bivariate findings in table 8.3, workers born in the Netherlands make the transition to a job in another branch of industry more often than employees born abroad, although this is only of significant effect in the secondary labour market.

At the industry level workers with an initially high level of education are more frequently in search of another job and more often externally mobile than workers with a lower level of education. This could indicate a relatively strong labour market position of highly educated workers. In differentiating according to the various worker groups, with regard to the probability of employer mobility in this schooling context it is only in the lower tier of the primary labour market that significance is perceived; for the search efforts this applied only to the secondary labour market.

Consistent with the concept of a segmented labour market we can conclude in summary that for actual employer mobility, as for overall job satisfaction and search efforts in the external labour market, on the basis of the various logit estimates partially different explanatory processes between the worker groups can be identified. We therefore expect that Human Resources Management, in which specific account is taken of the presence of various types of workers (worker groups) having different expectation sets will contribute to a sustained business undertaking.

Met expectations – We expect that employers will aim for functional immobility, i.e. wish to avoid as far as possible dysfunctional employee turnover (see section 8.2). Accordingly, we expect that the job contentment of valued employees, secondary and primary, will be a particularly important focus of attention for many employers. Given the strong external labour market dynamic in the Dutch hospitality industry, in which relatively many workers at any point in time are employed within an organization for only a relatively short time period, we can assume that in this context the concept of *met expectations* especially in this

branch of industry will possibly play an important role. A significant share of employer mobility is push-related: 45 per cent of all workers who have voluntarily changed their job in the Dutch hospitality industry for a job in another branch of industry, indicates, in summary, that this step was largely the result of the annoying aspects of the former (i.e. hospitality) job. In the professional market this is 56 per cent, in the lower tier of the primary labour market 41 per cent and in the secondary segment 42 per cent. Through-flow within the hospitality industry is also largely the result of "more dissatisfactions than satisfactions" in the old job. Total clarity on the part of the organization towards potential employees regarding the various required contributions to and possible inducements from the hospitality job may in this context, via more realistic job expectations, perhaps contribute to the degree of met expectations, thereby reducing the *desirability of movement* and consequently possibly also avoid some part of the undesired employee turnover: "Prior information concerning the nature of the job can lead to more realistic expectations on the part of many new employees as to what type of job environment they are entering. Such prior knowledge can allow the job applicant to know what is to be expected of him if he joins as well as what types of rewards are possible in exchange for his participation. Thus, we would expect some individuals to conclude prior to employment that the rewards offered by the organization did not justify the effort and to decide not to join in the first place. Those who did accept employment with such prior knowledge, on the other hand, would have a more accurate picture of the required efforts and possible rewards, resulting in a greater degree of congruence between individual role and reward expectations and later job experiences. Since rewards would be perceived here as being far more equitable with the employee's adjusted (and presumably more realistic) expectations, turnover due to unmet expectations should tend to diminish.", (Porter and Steers (1973, p. 164)). Making the concept of *(dis)functional employee turnover* operational as, for example, in Hollenbeck and Williams (1986) is not possible using the results of the Hospitality Employees Study. With the aim of also being able to qualitatively describe the strong external labour market dynamic in the Dutch hospitality industry, this is an issue that demands to be worked through in the future. Expectations are that in addition to the frequency of employee turnover, the quality of labour mobility is also especially determinant for a sustained business undertaking.

Internal mobility – These expectations not only concern external transitions in the labour market. Changes in job within organizations can also contribute to a restructuring of the labour market. In aiming to have *the right worker in the right place at the right time* we can expect that employers will want to create mobility flows within the organization to achieve an optimum (re)allocation of labour. These transitions involve, on the one hand, attracting the right workers from the external labour market and saying goodbye to less-valued employees (functional turnover) and, on the other hand, a redeployment or revaluation of valued employees (physical and/or mental). Partly due to the strong external labour market dynamic, internal changes in job in the Dutch hospitality industry are more limited. The emphatic smallness in the hospitality industry is also an influence here. In September 2001, 14 per cent of all hospitality employees changed jobs at least once with their current employer. In line with the SLM predictions, this is above average in the primary labour market and below average in the secondary segment (see table 8.1). Contrary to the observed

external transitions, given the design of the Hospitality Employees Study internal changes in job can also have occurred before September 2000. Although this chapter specifically focuses on various predictors of internal mobility in the Dutch hospitality industry, it is also contended that a proper analysis of this form of labour mobility is not possible given the current design of the employees survey (see section 8.4.4). Despite the limitations in the UWV data, some multivariate analyses have nevertheless been performed as an addition to the bivariate examination in section 8.3, especially in order to estimate in a more integral setting the influence of constant profiles such as gender and country of birth on the probability of intraorganizational mobility.

In summary, the logit estimates show that various job, firm and worker characteristics can be identified as being significantly determinant of the probability of internal mobility and that in harmony with the concept of a segmented labour market in an 'internal setting' too partially different mobility processes between the worker groups can be identified. The perceived differences do not always appear, however, to be in accordance with the SLM predictions. These empirical findings concerning intraorganizational mobility must be understood, however, in the light of the serious limitations of the data. The discussion in section 8.4.4 offers in this regard various starting points to enable in the future a more appropriate investigation of internal labour mobility in the Dutch hospitality industry.

References

Aarts, L., De Neubourg, C. and L. Paul (1983), *Arbeidsmarktsegmentatie in Nederland: een empirische benadering*, Economisch en Sociaal Tijdschrift, 37, pp. 209-227.

Abelson, M.A. and B.D. Baysinger (1984), *Optimal and Dysfunctional Turnover: Toward an Organizational Level Model*, Academy of Management Review, 9, pp. 331-341.

Achterberg, P., Houtman, D. and B. Jetten (2003), *Arbeidstevredenheid: een aanpassingsfenomeen?*, Tijdschrift voor Arbeidsvraagstukken, 19, pp. 214-227.

Aldenderfer, M.S. and R.K. Blashfield (1984), *Cluster analysis*, Beverly Hills: Sage.

Allaart, P.C. and J.C. van Ours (2001), *Stromen op de Nederlandse arbeidsmarkt*, Organisatie voor Strategisch Arbeidsmarktonderzoek, Tilburg.

Altonji, J.G. and T.A. Dunn (1996a), *Using Siblings to Estimate the Effect of School Quality on Wages*, The Review of Economics and Statistics, 78, pp. 665-671.

Altonji, J.G. and T.A. Dunn (1996b), *The Effects of Family Characteristics on the Return to Education*, The Review of Economics and Statistics, 78, pp. 692-704.

Anderson, K.H., Butler, J.S. and F.A. Sloan (1987), *Labor Market Segmentation: A Cluster Analysis of Job Groupings and Barriers to Entry*, Southern Economic Journal, 53, pp. 571-590.

Anderson, T.W. and C. Hsiao (1981), *Estimation of dynamic models with error components*, Journal of the American Statistical Association, 76, pp. 598-606.

Anderson, T.W. and C. Hsiao (1982), *Formulation and estimation of dynamic models using panel data,* Journal of Econometrics, 18, pp. 47-82.

Angrist, J.D. and A.B. Krueger (1991), *Does Compulsory Schooling Attendance Affect Schooling and Earnings?*, Quarterly Journal of Economics, 106, pp. 979-1014.

Arellano, M. and S. Bond (1991), *Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations,* Review of Economic Studies, 58, pp. 277-297.

Arrow, K. (1973), *Higher education as a filter*, Journal of Public Economics, 2, pp. 193-216.

Ashenfelter, O. and D.J. Zimmerman (1993), *Estimates of the Returns to Schooling from Sibling Data: Fathers, Sons, and Brothers*, NBER, Working Paper No. 4491.

Ashenfelter, O. and A.B. Krueger (1994), *Estimates of the Economic Return to Schooling from a New Sample of Twins*, American Economic Review, 84, pp. 1157-1173.

Atkinson, J. (1984), *Manpower strategies for flexible organisations*, Personnel Management, 16, pp. 28-31.

Atkinson, J. (1988), *Flexibilisering van de arbeid in de Engelse industrie en dienstverlening*, in: Te Elfder Ure 41, Het ontwerpen van arbeidsprocessen, pp. 181-200.

Baltagi, B.H. (1989), *The equivalence of the Boothe-MacKinnon and the Hausman specification tests in the context of panel data*, Econometric Theory, 5, p. 454.

Baltagi, B.H. (2002), *Econometric Analysis of Panel Data*, Second Edition, John Wiley & Sons Ltd, England.

Becker, G.S. (1962), *Human Capital: A Theoretical and Empirical Analysis*, Journal of Political Economy, 70, pp. 9-46.

Becker, G.S. (1964), *Human Capital*, New York: NBER.

Becker, G.S. (1967), *Human Capital and the Personal Distribution of Income*, W.S. Woytinsky Lecture No. 1, Ann Arbor: University of Michigan.

Belman, D. and J.S. Heywood (1991), *Sheepskin Effects in the Returns to Education: An Examination of Women and Minorities*, The Review of Economics and Statistics, 73, pp. 720-724.

Ben-Porath, Y. (1967), *The Production of Human Capital and the Life-Cycle of Earnings*, Journal of Political Economy.

Berg, N. van den, Blees-Booij, A., Ploeg, S. van der and M. Meesters (1996), *De opbrengst van MBO en HBO: trajecten en stations*, Organisatie voor Strategisch Arbeidsmarktonderzoek (D2), Den Haag.

Berkhout, E., Graaf, D. de, Heyma, A. and J. Theeuwes (2001), *Loondifferentiatie in Nederland: de vraagkant*, Organisatie voor Strategisch Arbeidsmarktonderzoek (A183), Den Haag.

Bernardin, H.J. (1977), *The relationship of personality variables to organizational withdrawal*, Personnel Psychology, 30, pp. 17-27.

Bispo, A. (2005), *Bedrijfstakrelaties en –prognoses voor de Nederlandse horeca*, *Consumentenvraag 1997-2010*, bedrijfschap Horeca en Catering, Zoetermeer.

References

Blossfeld, H.P. and K.U. Mayer (1988), *Labor market segmentation in the Federal Republic of Germany: an empirical study of segmentation theories from a life course perspective*, European Sociological Review, 4, pp. 123-140.

Bluestone, B. (1971), *The Personal Earnings Distribution: Individual and Institutional Determinants*, Econometric Society Winter Meeting, December 1971.

Boer. P. den and B. Hövels (2002), *Werken en leren in arbeidsorganisaties*, Den Haag: OSA (A187).

Boston, Th.D. (1990), *Segmented Labor Markets: New Evidence From A Study Of Four Race-Gender Groups*, Industrial and Labor Relations Review, 44, pp. 99-115.

Bowles, S. and H. Gintis (1976), *The problem with human capital theory, a Marxian critique*, The American Economic Review, 65, pp. 74-82.

Boyer, R. (1987), *Labour flexibilities: many forms, uncertain effects*, Labour and Society, 12, pp. 107-129.

Breusch, T.S. and A.R. Pagan (1980), *The LaGrange Multiplier Test and Its Applications to Model Specification in Econometrics*, Review of Economic Studies, 47, pp. 239-254.

Brodsky, M.M. (1994), *Labor market flexibility: a changing international perspective*, Monthly Labor Review, 117, pp. 53-60.

Brouwer, E., Groot, W., Muizelaar, J. and C. Teulings (1992), *Segmentatie op de Arbeidsmarkt, Beloning en Baanduur*, Stichting voor Economisch Onderzoek, Universiteit van Amsterdam, Amsterdam.

Brown, C. (1980), *Equalizing Differences in the Labor Market*, The Quarterly Journal of Economics, 94, pp. 113-134.

Brown, C. and J. Medoff (1989), *The employer size wage effect*, Journal of Political Economy, October, pp. 1027-1059.

Brown, C., Hamilton, J. and J. Medoff (1990), *Employers large and small*, Harvard University Press, Massachusetts.

Buchele, R. (1981), *Sex Discrimination and Labour Market Segmentation*, in: F. Wilkinson (ed.), *The dynamics of labour market segmentation*, Academic Press, London.

Cain, G.G. (1976), *The Challenge of Segmented Labor Market Theories to Orthodox Theory : A Survey*, Journal of Economic Literature, 14, pp. 1215-1257.

Cairnes, J.E. (1874), *Some Leading Principles of Political Economy Newly Expanded*, London, McMillan.

Card, D. and A.B. Krueger (1992), *Does School Quality Matter? Returns to Education and the Characteristics of Public Schools in the United States*, Journal of Political Economy, 100, pp. 1-40.

Card, D. (1993), *Using Geographic Variation in College Proximity to Estimate the Return to Schooling*, NBER, Working Paper No. 4483.

Card, D. (1999), *The Causal Effect of Education on Earnings*, in: O. Ashenfelter and D. Card (eds.), Handbook of Labor Economics, Volume 3A, Chapter 30, Elsevier Science Publishers B.V.

Chamberlain, G. (1984), *Panel Data*, in: Handbook of Econometrics, Chapter 22, pp. 1247-1318, North-Holland: Amsterdam.

Chow, G. (1960), *Tests of equality between sets of coefficients in two linear regressions*, Econometrica, 28, pp. 591-605.

Dalen, J. van, Koerts, J. and A.R. Thurik (1990), *The Measurement of Labour Productivity in Wholesaling*, The International Journal of Research in Marketing, 7, pp. 21-34.

Dalton, D.R. and W.D. Todor (1979), *Turnover turned over: An expanded and positive perspective*, Academy of Management Review, 4, pp. 225-235.

Dalton, D.R., Todor, W.D. and D.M. Krackhardt (1982), *Turnover overstated: The functional taxonomy*, Acadamy of Management Review, 7, pp. 117-123.

Dekker, R.J.P., de Grip, A. and J.A.M. Heijke (1995), *Arbeidsmarktsegmentatie en arbeidsmarktgedrag*, Organisatie voor Strategisch Arbeidsmarktonderzoek, Den Haag.

Deleeck, H., Berghman, J. and P. Janssens (1984), *Sociale Zekerheid: Inkomensverdeling en Doelmatigheid Anno 1982*, De Gids Op Maatschappelijk Gebied, 75, pp. 595-623.

Dialogic (2005), *Innovatie in de horeca, catering en recreatie. Onderzoek naar de innovativiteit van de bedrijfstak*, Zoetermeer.

Dickens, W.T. and K. Lang (1985), *A Test of Dual Labor Market Theory*, The American Economic Review, 75, pp. 792-805.

Doeringer, P.B. and M.J. Piore (1970), *Equal Employment Opportunity in Boston*, Industrial Relations, 9, pp. 324-339.

References

Doeringer, P.B. and M.J. Piore (1971), *Internal labor markets and manpower analysis*, Health Lexington Books, Lexington, Massachusetts.

Dunlop, J.T. (1957), *The Task of Contemporary Wage Theory*, in G.W. Taylor and F.C. Pierson (eds.), *New Concepts in Wage Discrimination*, New York: McGraw-Hill, pp. 117-139.

Dunnewijk, T.J.A. and A. Lammertsma (1999), *De onstuimige groei van flexibele arbeid*, ESB, 84, pp. 157-158.

Dutch Board for the Hospitality and Catering Industry (1996a), *Bekendheid en naleving van de Horeca-CAO*, Zoetermeer.

Dutch Board for the Hospitality and Catering Industry (1996b), *Informatiesysteem Arbeidsmarktontwikkeling Horeca (ISAH), Rapportage 1996*, Zoetermeer.

Dutch Board for the Hospitality and Catering Industry (2001), *Trendrapport 2001, Werkgelegenheidsstructuur Bedrijfstak Horeca 1994-2000*, Zoetermeer.

Dutch Board for the Hospitality and Catering Industry (2002a), *Trendrapport Horecaconsument 1998-2000*, Zoetermeer.

Dutch Board for the Hospitality and Catering Industry (2002b), *Trendrapport Werknemers-onderzoek 2000-2001*, Zoetermeer.

Dutch Board for the Hospitality and Catering Industry (2003a), *Trendrapport Werkgelegenheidsstructuur, deel 2: bedrijven en ondernemers*, Zoetermeer.

Dutch Board for the Hospitality and Catering Industry (2003b), *HappyHoreca Werkwijzer*, Zoetermeer.

Dutch Board for the Hospitality and Catering Industry (2003c), *Normen Nederlandse Hotel Classificatie*, Zoetermeer.

Dutch Board for the Hospitality and Catering Industry (2004), *Consumentenbezoek in de Nederlandse horecabranche 2002-2003*, Zoetermeer.

Dutch Board for the Hospitality and Catering Industry (2005), *Kompas voor beleid. Trendstudie voor de Nederlandse horeca*, Zoetermeer.

Dutch Board for the Hospitality and Catering Industry (2006), *Horeca in Cijfers 2006*, Zoetermeer.

EIM (2003), *Arbeidsproductiviteitsontwikkeling in de horeca en catering; ontwikkelingen, determinanten en verwachtingen*, Zoetermeer.

Ellingson, J.E., Gruys, M.L. and P.R. Sackett (1998), *Factors Related to the Satisfaction and Performance of Temporary Employees*, Journal of Applied Psychology, 83, pp. 913-921.

Everitt, B.S. (1993), *Cluster Analysis*, New York: Halsted Press.

Farrell, D. (1983), *Exit, Voice, Loyalty and Neglect as Responses to Job Dissatisfaction: A Multidimensional Scaling Study*, Academy of Management Journal, 26, pp. 596-607.

Feyter, M. de, Smulders, P. and E. de Vroome (2001), *De inzetbaarheid van mannelijke en vrouwelijke werknemers: kenmerken van invloed*, Tijdschrift voor Arbeidsvraagstukken, 17, pp. 47-59.

Flik, R.J. and B.M.S. van Praag (1991), *Subjective Poverty Line Definitions*, De Economist, 139, pp. 311-330.

Frenk, J.B.G., Thurik, A.R. and C.A. Bout (1991), *Labour Costs and Queueing Theory in Retailing*, European Journal of Operations Research, 55, pp. 260-267.

Galan, C. de and A.J.M. van Miltenburg (1991), *Economie van de arbeid*, 3^e druk, Alphen a/d Rijn: Samsom Tjeenk Willink.

Garen, J. (1984), *The Returns to Schooling: A Selectivity Bias Approach with a Continuous Choice Variable*, Econometrica, 52, pp. 1199-1218.

Gelderblom, A., 't Hoen, N.B.J.G. and J. de Koning (1994), *Wat wordt men wijzer van onderwijs?*, Den Haag: OSA (W120).

Gelderblom, A. and J. de Koning (1994), *Leren, batig investeren?*, Den Haag: OSA (V41).

Gelderblom, A. (1995), *Financieel rendement van opleiding*, in: Rendement van opleiding en allocatie van arbeid, OSA (W133), Den Haag.

Gelderblom, A., de Koning, J. and P. van Winden (1998), *Integratie van leren en werken*, Den Haag: OSA (W162).

Ghiselli, E.E. (1974), *Some perspectives for industrial psychology*, American Psychologist, 80, pp. 80-87.

Gifi, A. (1990), *Nonlinear multivariate analysis*, Chichester: John Wiley and Sons.

Glebbeek, A.C. (1993), *Perspectieven op loopbanen*, Groningen.

Go, F.M., Monachello, M.L. and T. Baum (1996), *Human Resource Management in the Hospitality Industry,* New York: John Wiley.

References

Goedhart, T., Halberstadt, V., Kapteyn, A. and B.M.S. van Praag (1977), *The Poverty Line: Concept and Measurement*, The Journal of Human Resources, 12, pp. 503-520.

Goodman, J.D. (1979), *The Economic Returns of Education: An Assessment of Alternative Models*, Social Science Quarterly, 60, pp. 269-283.

Gordon, D.M., Edwards, R. and M. Reich (1982), *Segmented work, divided workers*; *The historical transformation of labor in the United States*, Cambridge: Cambridge University Press.

Goudswaard, A. (2003), *Flexibele arbeid – duurzame arbeid?. De stand van zaken na twintig jaar flexibilisering van arbeid*, proefschrift, Hoofddorp: TNO Arbeid.

Gower, J.C. (1971), *A general coefficient of similarity and some of its properties*, Biometrics, 27, pp. 857-872.

Graaf, P.M. de and R. Luijkx (1997), *Structurele veranderingen, aspiraties en arbeidsmobiliteit*, Organisatie voor Strategisch Arbeidsmarktonderzoek, Den Haag.

Graham, J. and D.M. Shakow (1990), *Labor Market Segmentation and Job-Related Risk: Differences in Risk and Compensation Between Primary and Secondary Labor Markets,* American Journal of Economics and Sociology, 49, pp. 307-323.

Griliches, Z. (1977), *Estimating the Returns to Schooling: Some Econometric Problems*, Econometrica, 45, pp. 1-22.

Griliches, Z. (1986), *Economic Data Issues*, in Z. Griliches and M.D. Intriligator (eds.), Handbook of Econometrics, Volume III, pp. 1465-1514.

Grip, A. de (1985), *Interne arbeidsmarkttheorieën: een overzicht*, Maandschrift Economie, 49, pp. 333-345.

Groot, W. and H. Oosterbeek (1994), *Earnings Effects of Different Components of Schooling; Human Capital versus Screening*, Review of Economics and Statistics, 76, pp. 317-321.

Hagenaars, A.J.M. and B.M.S. van Praag (1985), *A Synthesis of Poverty Line Definitions,* Review of Income and Wealth, 31, pp. 139-154.

Harmon, C. and I. Walker (1995), *Estimates of the Economic Return to Schooling for the United Kingdom*, The American Economic Review, 85, pp. 1278-1286.

Harrison, B. and A. Sum (1979), *The Theory of 'Dual' or Segmented Labor Markets*, Journal of Economic Issues, 13, pp. 687-706.

Hartgers, M. and A. Boelens (2002), *Veel jongeren en vrouwen doen flexwerk*, CBS: webmagazine.

Hartog, J., Mekkelholt, E. and H. van Ophem (1987), *Een empirische studie naar de arbeidsmobiliteit in Nederland*, Organisatie voor Strategisch Arbeidsmarktonderzoek, Den Haag.

Hausman, J.A. (1978), *Specification tests in econometrics*, Econometrica, 46, pp. 1251-1271.

Hausman, J.A. and W.E. Taylor (1981), *Panel data and unobservable individual effects*, Econometrica, 49, pp. 1377-1398.

Haveman, R.H. and B.L. Wolfe (1984), *Schooling and economic well-being: the role of non-market effects*, Journal of Human Resources, pp. 377-407.

Heckman, J.J. and S. Polachek (1974), *Empirical Evidence on the Functional Form of the Earnings-Schooling Relationship*, Journal of the American Statistical Association, 69, pp. 350-354.

Heckman, J.J. (1979), *Sample Selection Bias as a Specification Error*, Econometrica, 47, pp. 153-161.

Hoeven, W.H.M. van der and A.R. Thurik (1984), *Labour Productivity in the Hotel Business*, The Service Industries Journal, 4, pp. 161-173.

Hoeven, W.H.M. van der (1990), *Arbeidsmobiliteit naar bedrijfs- en grootteklasse*, EIM, Zoetermeer.

Hoeven, W.H.M. van der and W.H.J. Verhoeven (1994), *Creatie en teloorgang van arbeidsplaatsen*, Den Haag: OSA (W123).

Hofman, W.H.A., Steijn, A.J. and L. van der Laan (1997), *Verstarring op de arbeidsmarkt*, Erasmus Centre for Labour Market Analysis, Van Gorcum, Assen.

Hollenbeck, J.R. and C.R. Williams (1986), *Turnover Functionality Versus Turnover Frequency: A Note on Work Attitudes and Organizational Effectiveness*, Journal of Applied Psychology, 71, pp. 606-611.

Hom, P.W. and R.W. Griffeth (1995), *Employee turnover*, Cincinnati, OH: South-Western.

Hsiao, C. and B. Sun (2000), *To pool or not to pool panel data*, Chapter 9 in J. Krishnakumar and E. Ronchetti, eds., *Panel Data Econometrics: Future Directions*, North-Holland, Amsterdam, pp. 181-198.

References

Huiskamp, M.J. (1999), *Arbeidsflexibiliteit en uitbesteding in de onderneming. Een kritiek op het schillenmodel als representatie van de 'flexibele' onderneming*, M&O, 1, pp. 9-23.

Hulin, C.L., Roznowski, M. and D. Hachiya (1985), *Alternative Opportunities and Withdrawal Decisions: Empirical and Theoretical Discrepancies and an Integration*, Psychological Bulletin, 97, pp. 233-250.

Hungerford, T. and G. Solon (1987), *Sheepskin Effects in the Returns to Education*, The Review of Economics and Statistics, 69, pp. 175-178.

Hunter, L., McGregor, A., MacInnes, J. and A. Sproull (1993), *The ´Flexible Firm´: Strategy and Segmentation*, British Journal of Industrial Relations, 31, pp. 383-407.

Judge, G.G., Hill, R.C., Griffiths, W.E., Lütkepohl, H. and T-C Lee (1982), *Introduction to the theory and practice of econometrics*, New York: John Wiley and Sons.

Kapteyn, A., Kooreman, P. and R. Willemse (1988), *Some Methodological Issues in the Implementation of Subjective Poverty Definitions*, The Journal of Human Resources, 23, pp. 222-242.

Katz, L.F. and L.H. Summers (1989), *Industry rents: evidence and implications*, Brookings Papers on Economic Activity, Microeconomics, pp. 209-275.

Kennedy, P. (2003), *A Guide to Econometrics*, Blackwell Publishing.

Kerr, C. (1954), *The Balkanization of Labor Markets*, in Labor Mobility and Economic Opportunities, edited by E.W. Bakke et al., New York: John Wiley and Sons, pp. 92-110.

Klomp, L. (1996), *Empirical Studies in the Hospitality Sector*, Ph.D., Ridderkerk.

Kroft, D.B.E. (2003), *'Check Please', een onderzoek naar de inrichting van de interne besturing in de hotelsector*, thesis, Dutch Board for the Hospitality and Catering Industry, Zoetermeer.

Krueger, A.B. and L.J. Summers (1988), *Efficiency wages and the inter-industry wage structure*, Econometrica, 56, pp. 259-293.

Kruse, D. (1992), *Supervision, working conditions, and the employer size effect*, Industrial Relations, 31, pp. 229-249.

Lagos, R.A. (1994), *Labour market flexibility: what does it really mean?*, Cepal Review, 54, pp. 81-95.

Landelijke Bedrijfscommissie voor het Horecabedrijf (1993), *Handboek Referentiefuncties Bedrijfstak Horeca*, Zoetermeer.

Landelijke Bedrijfscommissie voor het Horecabedrijf (2000), *CAO voor het Horecabedrijf, van 1 juli 2000 tot 1 juli 2002*, Zoetermeer.

Langley, P.C. (1978), *An Empirical Study of Labor Market Segmentation, Comment*, Industrial and Labor Relations Review, 32, pp. 86-94.

Leeuw, J. de and J. van Rijckevorsel (1980), *HOMALS and PRINCALS – Some generalizations of principal components analysis*, in: *Data Analysis and Informatics*, E. Diday et al., eds. Amsterdam: North-Holland.

Lewbel, A. (1989), *Household Equivalence Scales and Welfare Comparisons*, Journal of Public Economics, 39, pp. 377-391.

Locke, E.A. (1976), *The nature and consequences of job satisfaction*, in: M.D. Dunnette (ed.), Handbook of industrial and organizational psychology, Chicago: Rand-McNally.

Lutz, B. and W. Sengenberger (1974), *Arbeitsmarktstrukturen und öffentliche Arbeitsmarktpolitik*, Otto Schwartz & Co., Göttingen.

Maddala, G.S. (1983), *Limited-dependent and qualitative variables in econometrics*, Cambridge University Press, Cambridge.

Maddala, G.S. (1992), *Introduction to Econometrics, second edition,* Macmillan Publishing Company, New York.

Maertz, C.P., Jr. (2004), *Five Antecedents Neglected in Employee Turnover Models: Identifying Theoretical Linkages to Turnover for Personality, Culture, Organizational Performance, Occupational Attachment, and Location Attachment*, in: R. Griffeth and P. Hom (eds.), Innovative Theory and Empirical Research on Employee Turnover, Information Age Publishing Inc.

March, J.G. and H.A. Simon (1958), *Organizations*, New York: Wiley.

Marquardt, D.W. (1963), *An Algorithm for Least Squares Estimation of Non-Linear Parameters*, Journal of the Society for Industrial and Applied Mathematics, 11, pp. 431-441.

Marshall, A. (1890), *Principles of Economics*, London: Macmillan.

Mátyás, L. and P. Sevestre (1996), *The Econometrics of Panel Data: A Handbook of the Theory with Applications*, Kluwer Academic Publishers, Dordrecht.

References

Mayhew, K. and B. Rosewell (1979), *Labour Market Segmentation in Britain*, Oxford Bulletin of Economics and Statistics, 41, pp. 81-116.

McLean, R.A., Wendling, W.R. and P.R. Neergaard (1978), *Compensating Wage Differentials for Hazardous Work: An Empirical Analysis*, Quarterly Review of Economics and Business, 18, pp. 97-107.

McNabb, R. and G. Psacharopoulos (1981), *Further Evidence on the Relevance of the Dual Labour Market Theory for the U.K.*, Journal of Human Resources, 16, pp. 442-448.

McNabb, R. (1987), *Testing for Labour Market Segmentation in Britain*, The Manchester School of Economic and Social Studies, 55, pp. 257-273.

McNabb, R. and P. Ryan (1990), *Segmented labour markets*, in: Current issues in labour economics, McMillan Education Ltd, pp. 151-177.

Mellow, W. (1982), *Employer size and wages*, Review of Economics and Statistics, 54, pp. 495-501.

Mill, J.S. (1848), *Principles of Political Economy with some of their Applications to Social Philosophy*, London.

Mincer, J. (1974), *Schooling, Experience and Earnings*, National Bureau of Economic Research, New York.

Mobley, W.H. (1977), *Intermediate Linkages in the Relationship Between Job Satisfaction and Employee Turnover*, Journal of Applied Psychology, 62, pp. 237-240.

Mojena, R. (1977), *Hierarchical Grouping Methods and Stopping Rules: An Evaluation*, Computer Journal, November, pp. 359-363.

Mok, A.L. (1975), *Is er een dubbele arbeidsmarkt in Nederland?*, in: Pre-adviezen voor de Vereniging van Staatshuishoudkunde, Leiden: Stenfert Kroese.

Murphy, K.M. and F. Welch (1990), *Empirical Age-Earnings Profiles*, Journal of Labor Economics, 8, pp. 202-229.

Neuman, S. and A. Viderman (1986), *Testing the Dual Labor Market Hypotheses*, Journal of Human Resources XXI, 2, pp. 230-237.

Nooteboom, B. (1980), *Retailing: Applied Analysis in the Theory of the Firm*, PhD-thesis, Uithoorn: J.C. Gieben.

Nooteboom, B. (1982), *A New Theory on Retailing Costs*, European Economic Review, 17, pp. 163-186.

Odink, J.G. (1995), *Financieel rendement van opleiding*, in: Rendement van opleiding en allocatie van arbeid, OSA (W133), Den Haag.

Oi, W.Y. (1990), *Employment relations in dual labor markets*, Journal of Labor Economics, 8, pp. 124-149.

Oi, W.Y. and T.L. Idson (1999), *Firm Size and Wages*, in: O. Ashenfelter and D. Card (eds.), Handbook of Labor Economics, Volume 3B, Chapter 33, Elsevier Science Publishers B.V.

Oosterbeek, H. and C.M. van Praag (1995), *Firm-Size Wage Differentials in the Netherlands*, Small Business Economics, 7, pp. 173-182.

Ophem, H. van (1987), *An empirical test of the segmented labour market theory for the Netherlands*, Applied Economics, 19, pp. 1497-1514.

OSA (1995), *Rendement van opleiding en allocatie van arbeid*, Den Haag: OSA (W133).

Osberg, L., Apostle, R. and D. Clairmont (1987), *Segmented labour markets and the estimation of wage functions*, Applied Economics, 19, pp. 1603-1624.

Osterman, P. (1975), *An Empirical Study of Labor Market Segmentation*, Industrial and Labor Relations Review, 28, pp. 508-523.

Pine, B.J. and J.H. Gilmore (1999), *The Experience Economy, Work Is Theatre & Every Business a Stage*, Harvard Business School Press, Boston.

Piore, M.J. (1975), *Notes for a Theory of Labor Market Stratification*, in Edwards, R.C., Reich, M. and D.M. Gordon (eds.), *Labor Market Segmentation*, D.C. Heath and Company, Lexington, Massachusetts, pp. 125-150.

Platzbeecker R. and M. van het Erve (2005), *The presence of a dual labour market in the House of Monatic: a clothing manufacturer in Cape Town, South Africa*, University of Tilburg.

Plotnick, R.D. and F. Skidmore (1975), *Progress against poverty*, New York: Academic Press.

Porter, L.W. and R.M. Steers (1973), *Organizational, work, and personal factors in employee turnover and absenteeism*, Psychological Bulletin, 80, pp. 151-176.

Porter, M.E. (1980), *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, New York: The Free Press.

References

Porter, M.E. (1985), *Competitive Advantage: Creating and Sustaining Superior Performance*, New York: The Free Press.

Porter, M.E. (1999), *Porter over concurrentie*, Uitgeverij Contact, Amsterdam/Antwerpen.

Praag, B.M.S. van (1968), *Individual Welfare Functions and Consumer Behavior*, Amsterdam.

Praag, B.M.S. van (1971), *The Welfare Function of Income in Belgium: An Empirical Investigation*, European Economic Review, 2, pp. 337-369.

Praag, B.M.S. van and A. Kapteyn (1973), *Further Evidence on the Individual Welfare Function of Income: An Empirical Investigation in The Netherlands*, European Economic Review, 4, pp. 33-62.

Praag, B.M.S. van, Kapteyn, A. and F.G. van Herwaarden (1978), *The Individual Welfare Function of Income: A Lognormal Distribution Function*, European Economic Review, 11, pp. 395-402.

Praag, B.M.S. van (1991), *Ordinal and Cardinal Utility: An Integration of the Two Dimensions of the Welfare Concept*, Journal of Econometrics, 50, pp. 69-89.

Praag, B.M.S. van, Bispo, A. and P.J.A. Stam (1993), *Armoede in Nederland. Een verkennend onderzoek naar aspecten van armoede en armoedebeleving in Nederland*, 's-Gravenhage: Ministerie van Sociale Zaken en Werkgelegenheid.

Price, J.L. (2004), *The Development of a Causal Model of Voluntary Turnover*, in: R. Griffeth and P. Hom (eds.), Innovative Theory and Empirical Research on Employee Turnover, Information Age Publishing Inc.

Psacharopoulos, G. (1981), *Returns to Education: An Updated International Comparison*, Comparative Education, 17, pp. 321-341.

Psacharopoulos, G. (1985), *Returns to Education: A Further International Update and Implications*, The Journal of Human Resources, 20, pp. 583-604.

Psacharopoulos, G. (1994), *Returns to Investment in Education: A Global Update*, World Development, 22, pp. 1325-1343.

Reich, M., Gordon, D.M. and R.C. Edwards (1973), *A Theory of Labor Market Segmentation*, American Economic Review, 63, pp. 359-365.

Romesburg, C.H. (1984), *Cluster Analysis for Researchers*, Lifetime Learning Publications Belmont.

Rosen, S. (1986), *The Theory of Equalizing Differences*, in: O. Ashenfelter and R. Layard (eds.), Handbook of Labor Economics, Volume 1, Chapter 12, Elsevier Science Publishers B.V.

Rosenberg, S. (1989), *From segmentation to flexibility*, Labour and Society, 14, 4, pp. 363-407.

Rosse, J.G. and H.E. Miller (1984), *Relationship between absenteeism and other employee behaviors*, in: P.S. Goodman, R.S. Atkin and Associates, Absenteeism: New approaches to understanding, measuring and managing employee absence, San Francisco: Jossey-Bass.

Rosse, J.G. and T.W. Noel (1996), *Leaving the Organization*, in K.R. Murphy (ed.): Individual Differences and Behavior in Organizations, Chapter Twelve, San Francisco: Jossey-Bass.

Ryan, P. (1980), *The Empirical Analysis of Labour Market Segmentation*, a paper presented at the Conference on Low Pay and Labour Market Segmentation in Advanced Countries, Berlin.

Sar, N.L. van der (1991), *Applied Utility Analysis*, Offsetdrukkerij Haveka B.V., Alblasserdam.

Schiepers, J.M.P. (1989), *Aspecten van Armoede; toepassing van armoedelijnen op het Budgetonderzoek*, CBS: Sociaal-economisch maandstatistiek, 4, pp. 25-34.

Seddighi, H.R., Lawler, K.A. and A.V. Katos (2000), *Econometrics, A Practical Approach*, Routledge: London.

Sen, A. (1986), *Economics and Ethics*, London.

Sennet, R. and J. Cobb (1972), *Working Class Lives*, Social Policy, 3.

SER (2002), *Advies over het Sociaal-economisch beleid 2002-2006*, publicatienummer 8, Den Haag.

Shapiro, C. and J.E. Stiglitz (1984), *Equilibrium unemployment as a worker discipline device*, American Economic Review, 74, pp. 433-444.

Smulders, P. and J. Klein Hesselink (1997), *Nederland lang geen koploper flexibilisering*, ESB, 82, pp. 888-890.

Sneath, P. and R. Sokal (1973), *Numerical Taxonomy*, San Francisco: W.H. Freeman.

SPSS (1998), *SPSS Categories 8.0*, Chicago, Illinois, U.S.A.

References

Statistics Netherlands (1993), *Standaard Bedrijfsindeling 1993*, Voorburg/Heerlen.

Statistics Netherlands (2002), *Nationale Rekeningen 2001*, Voorburg/Heerlen.

Statistics Netherlands (2004), *De Nederlandse samenleving 2004, Sociale trends*, Voorburg/Heerlen.

Statistics Netherlands (2005), *Nationale Rekeningen 2004*, Voorburg/Heerlen.

Stichting Consument en Veiligheid (2003), *Arbeidsongevallen in 2001 op basis van het Letsel Informatie Systeem*, Amsterdam.

Swamy, P.A.V.B. (1970), *Efficient inference in a random coefficient regression model*, Econometrica, 38, 2, pp. 311-323.

Swamy, P.A.V.B. and S.S. Arora (1972), *The exact finite sample properties of the estimators of coefficients in the error component regression models*, Econometrica, 40, pp. 261-275.

Swamy, P.A.V.B. and G.S. Tavlas (2001), *Random coefficient models*, Chapter 19 in B.H. Baltagi, ed., *A Companion to Theoretical Econometrics*, Blackwell Publishers, Massachusetts, pp. 410-428.

Taubman, P. and M.L. Wachter (1986), *Segmented Labor Markets*, in: O. Ashenfelter and R. Layard (eds.), Handbook of Labor Economics, Volume 2, Chapter 21, Elsevier Science Publishers B.V.

Teulings, C.N., Webbink, H.D. and A. Kalwij (1992), *Loonverschillen tussen bedrijven*, Tilburg: OSA (W93).

Theeuwes, J.J.M. (1995), *Menselijk Kapitaal*, Rapport ten behoeve van de Overlegcommissie Verkenningen, Rijksuniversiteit Leiden.

Theeuwes, J.J.M. (1995), *Commentaar*, in: Rendement van opleiding en allocatie van arbeid, OSA (W133), Den Haag.

Thurik, A.R. (1984), *Labour Productivity, Economies of Scale and Opening Time in Large Retail Establishments*, The Service Industries Journal, 4, pp. 19-29.

Thurow, L.C. (1969), *Poverty and Discrimination*, The Brookings Institution, Washington, D.C.

Thurow, L.C. (1972), *Education and Economic Inequality*, The Public Interest, pp. 66-81.

Thurow, L.C. and R.E.B. Lucas (1972), *The American distribution of income: A structural problem*, Joint Economic Committee Print, 92d Congress.

Tilly, Chr. (1991), *Reasons for the continuing growth of part-time employment*, Monthly Labor Review, March 1991, pp. 10-18.

Treu, T. (1992), *Labour flexibility in Europe*, International Labour Review, 131, pp. 497-512.

Varian, H.R. (1984), *Microeconomic Analysis*, New York: W.W. Norton & Company, Inc.

Vietorisz, T. and B. Harrison (1973), *Labor Market Segmentation: Positive Feedback and Divergent Development*, American Economic Review, 63, pp. 366-376.

Ward, J. (1963), *Hierarchical grouping to optimize an objective function*, Journal of the American Statistical Association, 58, pp. 236-244.

Williamson, O.E., Wachter, M.L. and J.E. Harris (1975), *Understanding the employment relation: the analysis of idiosyncratic exchange*, Bell Journal of Economics, pp. 250-280.

Willis, R.J. and S. Rosen (1979), *Education and Self-Selection*, Journal of Political Economy, 87, pp. S7-S36.

Willis, R.J. (1986), *Wage Determinants: A Survey and Reinterpretation of Human Capital Earnings Functions*, in: O. Ashenfelter and R. Layard (eds.), Handbook of Labor Economics, Volume 1, Chapter 10, Elsevier Science Publishers B.V.

Wit, P. de (1996), *Arbeidsmarktsegmenten in de bedrijfstak horeca*, Tijdschrift voor Arbeidsvraagstukken, 12, 4, pp. 352-364.

Wolff, Ch. de, Luijkx, R. and M. Kerkhofs (2002), *Bedrijfsscholing en arbeidsmobiliteit*, Tilburg: OSA (A186).

Zellner, A. (1962), *An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias*, Journal of the American Statistical Association, 57, pp. 348-368.

Nederlandse samenvatting (Summary in Dutch)

Bijna 42.000 vestigingen met ruim 310.000 werknemers in loondienst en ongeveer 13 miljard euro omzet op jaarbasis (incl. BTW). Dit is de Nederlandse horeca anno 2005 in een notendop en in dit boek onderwerp van studie.

De empirische verkenningen in dit boek hebben tot doel het inzicht in het functioneren van de arbeidsmarkt in de Nederlandse horeca te vergroten. In deze bedrijfstak is personeel een belangrijke factor voor het creëren van omzet, meer dan kapitaal (Dutch Board for the Hospitality and Catering Industry (2006)). Ook vergeleken met veel andere bedrijfstakken in Nederland kan productie in de horeca als arbeidsintensief worden omschreven (Statistics Netherlands (2005)). Aandacht voor verschillende aspecten van arbeid is dan ook essentieel voor een duurzame bedrijfsvoering. Hierbij moet voortdurend worden gestreefd naar een gezonde balans tussen kwantiteit en kwaliteit. Dit evenwicht komt tot stand door bijvoorbeeld een passende arbeidsbeloning, flexibiliteit van het personeelsbestand en arbeidsmobiliteit die gericht is op functionaliteit.

Om de verschillende arbeidsmarktonderwerpen cijfermatig te belichten en tegelijkertijd rekening te houden met de diversiteit aan horeca arbeid is als overkoepelend thema in dit boek gekozen voor het onderwerp arbeidsmarktsegmentatie. De segmentatietheorie veronderstelt het bestaan van deelmarkten op de arbeidsmarkt die in structuur en gedrag significant van elkaar verschillen. Beleidsmatig dus een belangrijk thema om verder uit te werken. Wanneer bijvoorbeeld in de Nederlandse horeca relatief homogene werknemersgroepen kunnen worden onderscheiden die in hun mobiliteitsdenken en -gedrag wezenlijk van elkaar verschillen, dan kan deze bevinding aanknopingspunten bieden voor het voeren van segmentspecifiek arbeidsmarktbeleid door de overheid en binnen ondernemingen personeelsbeleid op maat. Dit ter behoud en ontwikkeling van gewaardeerde werknemers; in het belang van een duurzame bedrijfsvoering en bedrijfstak.

Het toetsen van de empirische plausibiliteit van een gesegmenteerde arbeidsmarkt (segmented labour market (SLM)) in de Nederlandse horeca vormt de rode draad in dit boek. Voor de gehanteerde definitie van het begrip horeca wordt verwezen naar hoofdstuk 1. In het bijzonder hebben de empirische verkenningen in dit proefschrift betrekking op vier bedrijfsgroepen binnen de bedrijfstak horeca: de drankensector, de fastfoodsector, de restaurantsector en de hotelsector.

Een fundamenteel verschil tussen de neoklassieke economische theorie en de arbeidsmarktsegmentatietheorie betreft het allocatieproces van werknemers op de arbeidsladder. De neoklassieke (menselijk kapitaal) theorie gaat niet uit van het bestaan van arbeidsmarktsegmenten en benadrukt verschillen in kwaliteiten van het arbeidsaanbod als de allocatiebasis. Hierbij geldt de verwachting dat een rijkere menselijk kapitaalvoorraad leidt tot meer productiviteit en daarmee tot een grotere kans op het verkrijgen van een betere

baan, een hogere arbeidsbeloning in het bijzonder. Daarentegen voorspelt de arbeidsmarktsegmentatietheorie het bestaan van een beperkt aantal duidelijk van elkaar te onderscheiden deelmarkten op de arbeidsladder met aan de bovenkant van het spectrum de meer aantrekkelijke banen en aan de onderkant de minder aantrekkelijke banen (Ryan (1980) en Taubman en Wachter (1986)). Vergeleken met de onderkant van de arbeidsmarkt worden de betere banen onder meer gekenmerkt door een hogere arbeidsbeloning, betere arbeidsomstandigheden, meer baanzekerheid, meer aanvullende (bedrijfsspecifieke) scholing en meer doorgroeimogelijkheden (Doeringer en Piore (1970, 1971)). Door de aanwezigheid van niet-economische drempels wordt mobiliteit tussen de arbeidsmarktsegmenten beperkt verondersteld. Discriminatie is in dit kader een klassiek voorbeeld van een dergelijke drempel. In tegenstelling tot het neoklassieke gedachtegoed benadrukt de segmentatietheorie de vraagzijde van de arbeidsmarkt als primair bepalend voor de allocatie van arbeid. Door de wijze van selectie door de ondernemer of meer in het algemeen door diegenen die de toegang bepalen zullen sommige (groepen van) werknemers, met de wens en het menselijk kapitaal om een betere baan te krijgen, niet de mogelijkheid krijgen om de arbeidsladder te beklimmen. *For these 'good' workers, involuntary and persistent confinement to 'bad' jobs may be called an 'ugly' employment situation. In this employment situation of 'the good, the bad and the ugly' the allocation of labour is inefficient.*

Voor het toetsen van de empirische plausibiliteit van een gesegmenteerde arbeidsmarkt kunnen een aantal volgtijdelijke stappen worden onderscheiden, namelijk (1) de constructie van arbeidsmarktsegmenten, (2) het onderzoeken van de validiteit van de geconstrueerde segmenten en (3) het toetsen van de segmentatiehypothese. Deze sequentiële stappen zijn ook bepalend voor de organisatie van dit boek en worden in hoofdstuk 1 nader toegelicht. Samenvattend is de organisatie van het boek gevisualiseerd in figuur 1.1. Hieronder volgt een korte beschrijving van de inhoudelijke hoofdstukken met een selectie uit de onderzoeksresultaten en wordt besloten met een algemeen beeld naar aanleiding van de empirische verkenningen in dit proefschrift.

In hoofdstuk 2 – wordt de theoretische achtergrond geschetst waartegen de verkenningen in de hoofdstukken daarna empirisch worden uitgewerkt. De beschouwing is geordend naar drie belangrijke denkwerelden binnen de segmentatietheorie, namelijk de *job competition theory* (Thurow en Lucas (1972)), de *dual labour market theory* (Doeringer en Piore (1970, 1971)) en de *radical economic theory* (Gordon, Edwards en Reich (1973, 1982)). Bij de bespreking van deze theorieën met nadrukkelijke aandacht voor overeenkomsten en verschillen worden ook voor het vervolg van het boek belangrijke begrippen geïntroduceerd, waaronder het concept interne arbeidsmarkt en de relatie met primaire en secundaire arbeidsmarkten.

Voor inzicht in de verschillende wijzen waarop in de literatuur wordt getoetst voor de empirische plausibiliteit van een gesegmenteerde arbeidsmarkt wordt na deze theoretische beschouwing een selectie van empirische SLM verkenningen gepresenteerd. Deze selectie is illustratief voor de traditioneel sequentiële stappen in empirische SLM studies. Door het ontbreken van eenduidige segmentatiecriteria wordt in de literatuur een veelheid aan classificatieprocedures waargenomen. Deze segmentatiemethoden kunnen als volgt worden

samengevat: (A) segmentatie door het oordeel van de onderzoeker(s) door middel van enkele baan- en/of werknemerskenmerken (McNabb en Psacharopoulos (1981) en Platzbeecker en Van het Erve (2005)), (B) segmentatie door het oordeel van de onderzoeker(s) door middel van enkele sectorkenmerken (McNabb (1987)) en (C) segmentatie door middel van een statistische procedure (Dickens en Lang (1985), Anderson, Butler en Sloan (1987) en Graham en Shakow (1990)). Ook een mix van bovengenoemde segmentatiebenaderingen wordt niet zelden waargenomen (Brouwer, Groot, Muizelaar en Teulings (1992) en Dekker, De Grip en Heijke (1995)). Door voor het trekken van segmentatielijnen op de arbeidsmarkt gebruik te maken van een statistische procedure wordt in bepaalde studies objectiviteit in het afbakenen van de segmenten geclaimd. Uiteraard kan geen enkele segmentatiebenadering als volledig objectief worden beschouwd. Ook bij het toepassen van een statistische procedure voor segmentering zoals clusteranalyse of factoranalyse vormen specifieke keuzes het vertrekpunt voor de empirische uitwerking. Naast een klassieke (exogene) segmentatiebenadering wordt in hoofdstuk 3 voor de Nederlandse horeca ook een ten dele endogene berekening van de arbeidsmarktsegmenten op basis van een statistische procedure uitgewerkt. Dit met de claim van nieuw in de segmentatieliteratuur, maar zonder de claim van volledige objectiviteit.

In hoofdstuk 3 – worden conform de eerste stap in empirische SLM verkenningen voor de Nederlandse horeca relevante arbeidsmarktsegmenten geconstrueerd. Een tweetal segmentatiebenaderingen worden uitgewerkt, namelijk twee verschillende perspectieven ten aanzien van de allocatie van werknemers op de primaire arbeidsmarkt. Het vertrekpunt wordt bij beide benaderingen gevormd door de gelijkgeschakelde afbakening van de secundaire arbeidsmarkt. Dit segment wordt geïdentificeerd met alle werknemers die antwoorden dat hun baan in de Nederlandse horeca een bijbaan betreft en dat zij daarbij geen initiële horecaopleiding op middelbaar of hoog niveau hebben afgerond. Deze definitie is in overeenstemming met de traditionele visie op de secundaire arbeidsmarkt waarin banen worden aangeboden waarvoor de functievereisten in termen van opleiding en ervaring minimaal zijn. Voor ondernemers dienen deze banen vooral de numerieke wendbaarheid van de organisatie. In de literatuur worden deze functies vaak aangeduid als *Jedermanns Qualifikation* (Lutz en Sengenberger (1974)). Een Nederlandse typering is *Allemansfunctie*.

Bij de eerste en meer klassieke tweedeling van de primaire arbeidsmarkt in de Nederlandse horeca wordt de bovenkant van de arbeidsladder afgebakend door alle werknemers die beschikken over een afgeronde initiële horecaopleiding op middelbaar of hoog niveau. De onderkant van de primaire arbeidsmarkt wordt geïdentificeerd met alle werknemers die aangeven dat hun baan in de horecasector een hoofdbaan is, maar daarbij niet beschikken over bovengenoemde initiële professionele kwalificatie. Segmentatie van arbeid kan bij deze traditionele benadering worden begrepen vanuit de gewenste optimale mix van kwaliteiten van het arbeidsaanbod voortkomend uit het streven van de ondernemer naar een optimale inrichting van de organisatie. Stratificatie van de horeca arbeidsmarkt in een secundair segment van *Allemansfuncties* en een primair segment met aan de top van de arbeidsladder de vakdeelmarkt (*the professional market*) en aan de onderkant de 'hoofdbaners' (*the craft market*) kan worden beschouwd als het SLM perspectief van de ondernemer en wordt in dit boek aangeduid als de PCS classificatiemethode.

De tweede segmentatietechniek kan worden beschouwd als het SLM perspectief van de werknemer op de primaire arbeidsmarkt. Bij deze benadering wordt sterk de nadruk gelegd op de beleving van werknemers zelf ten aanzien van de positie op de arbeidsladder, dit onder de gedachte dat *job wealth or job poverty is not a state of being, but a state of mind*. Voor het afbakenen van beide primaire deelmarkten in de Nederlandse horeca wordt in het bijzonder gebruik gemaakt van een arbeidsmarktvariant van de Income Evaluation Question (IEQ, Van Praag (1971)) uit de armoedeliteratuur. Het primaire doel van de IEQ benadering is het verkrijgen van arbeidsmarktsegmenten met een sterke mate van interne consistentie: primaire werknemers die als baanrijke werknemers (*job wealthy workers*) worden geïdentificeerd zullen ook zichzelf beschouwen als gepositioneerd aan de bovenkant van de arbeidsladder (en andersom). De empirische literatuur overziend kan deze techniek gebaseerd op de vox populi worden beschouwd als nieuw in de segmentatieliteratuur en een 'verbroedering' met de armoedeliteratuur. In haar uitwerking betreft de IEQ methode een mix van de classificatieschema's A en C in hoofdstuk 2.

Volgens het Horeca Werknemersonderzoek 2002 (zie paragraaf 3.2, ook aangeduid als de UWV data) zijn in de Nederlandse horeca in september 2001 in totaal 305.500 werknemers in loondienst, waarvan ongeveer 47 procent werkzaam op de secundaire arbeidsmarkt. De karakterisering van de Nederlandse horeca als bijbanenmarkt lijkt op zijn plaats. De PCS segmentatiebenadering identificeert verder 51.900 horecawerknemers op de vakdeelmarkt en 110.100 werknemers aan de onderkant van de primaire arbeidsmarkt. Volgens de IEQ methode worden in de Nederlandse horeca 19.500 werknemers geschat baanrijk te zijn. Van alle werknemers op de vakdeelmarkt ervaart 14 procent baanrijkdom.

De IEQ benadering leidt tot een intern consistente tweedeling van de primaire arbeidsmarkt. Van alle baanrijke werknemers in de Nederlandse horeca onderkent 60 procent algemene baantevredenheid, naar verwachting verwijzend naar de waardering voor zowel de monetaire als niet-monetaire arbeidsomstandigheden. Voor werknemers aan de onderkant van de IEQ primaire arbeidsmarkt is dit met 49 procent significant lager. Daarentegen wordt met de PCS benadering in deze context geen interne consistentie vastgesteld: van alle vakspecialisten onderschrijft 48 procent algemene baantevredenheid tegenover 51 procent van alle werknemers aan de onderkant van de primaire arbeidsladder.

Gelet op baankenmerken zoals de netto arbeidsbeloning, het soort arbeidscontract en bijvoorbeeld de omvang van de baan kan worden geconcludeerd dat secundaire banen in de Nederlandse horeca conform de segmentatietheorie minder aantrekkelijk zijn dan banen in het primaire arbeidsmarktsegment. Het is dan ook opvallend dat secundaire werknemers met 55 procent meer dan gemiddeld algemene baantevredenheid onderschrijven. Naar verwachting heeft deze tevredenheid vooral te maken met de mogelijkheden voor deze werknemers om formele arbeid adequaat te kunnen combineren met taken in de privé-sfeer. De nadruk op kleine deeltijdbanen, flexibele arbeidstijden, invloed op de samenstelling van de werkrooster en een geestelijke werkbelasting passend bij de minimale functievereisten zijn voorbeelden van arbeidsomstandigheden in het secundaire segment die deze combinatiemogelijkheden stimuleren en wellicht bijdragen aan de algemene

baantevredenheid. Werkbeleving en baantevredenheid hebben op de secundaire arbeidsmarkt naar verwachting een andere lading dan voor primaire werknemers.

De empirische bevindingen in dit hoofdstuk laten ook zien dat de kenmerken van horecabanen en van de werknemers die deze banen vervullen in de verschillende deelmarkten (PCS en IEQ) voor een belangrijk deel in overeenstemming zijn met de SLM voorspellingen en daarmee de validiteit (toepasselijkheid) van de samengestelde arbeidsmarktsegmenten ondersteunen.

In hoofdstuk 4 – wordt de relatieve homogeniteit van de PCS en IEQ arbeidsmarkt-segmenten onderzocht. Ook op deze manier wordt getracht inzicht te krijgen in de validiteit van de samengestelde groepen. Met de PCS en IEQ driedelingen van de horeca arbeidsmarkt als uitgangspunt wordt impliciet verondersteld dat de betreffende arbeidsmarktsegmenten niet verder kunnen worden opgedeeld in kleinere werknemersgroepen met significant andere baankenmerken. Om deze hypothese van homogeniteit te toetsen worden enkele clusteranalyses (CA) uitgewerkt. In het bijzonder worden drie CA configuraties doorgerekend, verwijzend naar de specifieke invulling van de traditioneel sequentiële stappen in clusteranalyse (Aldenderfer en Blashfield (1984)). In dit hoofdstuk wordt gekozen voor de hiërarchische agglomeratieve clustermethode. De drie configuraties verschillen in de keuze van de samenvoegregels: (a) *single linkage*, (b) *complete linkage* en (c) de methode van Ward (1963). Bij elk van deze hiërarchische methoden wordt uitgegaan van dezelfde CA variabelen, standaardisatie van de variabelen tot Z-scores en de gekwadrateerde Euclidische afstand als maat voor de overeenkomst (*similarity measure*) tussen werknemers.

De clusteranalyses laten zien dat bij het toepassen van *single linkage* en de methode van Ward als samenvoegregel en de stopregel van Mojena (1977) voor het ontwaren van een geschikt aantal werknemersgroepen (clusters) de PCS en IEQ arbeidsmarktsegmenten in de Nederlandse horeca niet verder onderverdeeld kunnen worden in kleinere relatief homogene en SLM natuurlijke werknemersgroepen. Bij het toepassen van *complete linkage* geldt homogeniteit alleen voor de bovenkant van de primaire arbeidsmarkt. Dit geldt voor beide segmentatiebenaderingen: de vakdeelmarkt (PCS upper tier) en de groep baanrijke werknemers (IEQ upper tier) in de Nederlandse horeca vertegenwoordigen ook bij *complete linkage* beide een segment van werknemers met sterk gelijkende baankenmerken. Daarentegen kunnen de onderkant van de primaire arbeidsladder (IEQ en PCS) en de gelijkgeschakelde secundaire arbeidsmarkt bij *complete linkage* verder worden opgesplitst in twee relatief homogene en natuurlijke werknemersgroepen.

Samenvattend kan worden geconcludeerd dat de validiteit van de PCS en IEQ arbeidsmarktsegmenten in termen van relatieve homogeniteit door de UWV data en met de drie genoemde CA configuraties voor een belangrijk deel empirisch wordt ondersteund.

Hoofdstuk 5 – De segmentatietheorie voorspelt significant verschillende belonings-processen tussen de verschillende arbeidsmarktsegmenten. In het bijzonder geldt de verwachting dat het menselijk kapitaal model op de secundaire arbeidsladder niet tot

nauwelijks verklaringskracht heeft, terwijl de rijkheid van dit kapitaal op de primaire arbeidsmarkt wel positief verband houdt met de positie van werknemers op de inkomensladder. Ook verwerpt de segmentatietheorie de neoklassieke hypothese van compenserende loonverschillen op de arbeidsmarkt (Brown (1980) en Rosen (1986)) en wordt alleen voor primaire werknemers looncompensatie voor het blootstaan aan verschillende vormen van baanongemakken en werkgerelateerde risico's op ziekte en blessures verondersteld (Graham en Shakow (1990)). Waar menselijk kapitaal en arbeidsomstandigheden belangrijke determinanten zijn van de individuele arbeidsbeloning in het primaire arbeidsmarktsegment geldt dit volgens de segmentatietheorie op de secundaire arbeidsmarkt voor groepskenmerken zoals geslacht en etniciteit. Om deze SLM verwachtingen voor de Nederlandse horeca te toetsen en op deze manier een bijdrage te leveren aan het beantwoorden van de centrale onderzoeksvraag in dit boek worden in hoofdstuk 5 verschillende beloningsfuncties geschat. Hierbij dienen de UWV data en de PCS arbeidsmarktsegmenten als vertrekbasis. De IEQ segmentatiebenadering laat zich voor een belangrijk deel leiden door de individuele arbeidsbeloning en is daarom voor het schatten van loonvergelijkingen methodisch minder geschikt. Als maat voor de productieve kennis en vaardigheden van horecawerknemers wordt gekozen voor het netto uurloon als predictand en voor schattingsdoeleinden logaritmisch geformuleerd in de verschillende beloningsfuncties. In het bijzonder zijn een viertal varianten van een klassieke lineaire regressiemodel geschat (modellen A–D).

Als een natuurlijk vertrekpunt zijn in eerste instantie traditionele beloningsfuncties conform de menselijk kapitaal benadering geschat (Becker (1967), Mincer (1974) en Heckman en Polachek (1974)). Passend bij de algemene bevindingen in de beloningsliteratuur (Willis (1986) en Card (1999)) geldt ook voor de Nederlandse horeca dat concurrerende Human Capital Earnings Functions (HCEF) traditionele verklaringskracht hebben met daarbij veelal significante en qua richting verwachte parameterschattingen. In het bijzonder zijn de schattingsresultaten van *model A* illustratief voor de significante betekenis van het menselijk kapitaal van werknemers voor de feitelijke arbeidsbeloning in de Nederlandse horeca. Op bedrijfstakniveau wordt het *credential effect* van een hoger opleidingsniveau in het reguliere onderwijs geschat op gemiddeld 4 procent en verdienen werknemers met één of meer afgeronde horecacursussen gemiddeld 9 procent meer dan werknemers zonder formele postinitiële scholing. Deze uitkomsten kunnen mogelijk wijzen op onderscholing in horecaspecifieke aanvullende kennis en vaardigheden. Passend bij de SLM verwachtingen is de verklaringskracht van model A in het secundaire arbeidsmarktsegment kleiner dan op de primaire arbeidsmarkt. In tegenstelling tot beide primaire deelmarkten hebben het opleidingsniveau in het reguliere onderwijs en afgeronde horecacursussen op de secundaire arbeidsladder geen significant effect op de individuele loonpositie.

Baanongemakken en werkgerelateerde risico's op ziekte en blessures zijn geen onbekend verschijnsel in de Nederlandse horeca, ook niet bij een normale uitoefening van de functie (Landelijke Bedrijfscommissie voor het Horecabedrijf (1993) en Stichting Consument en Veiligheid (2003)). Voor het toetsen van de hypothese van de compenserende loonverschillen worden in *model B* aanvullend (op model A) enkele aspecten van de ervaren lichamelijke en geestelijke werkbelasting als loonbepalende factoren opgenomen. In het

bijzonder wordt gebruik gemaakt van de vele werkbelevingsaspecten in het Horeca Werknemersonderzoek. Deze arbeidsomstandigheden zijn voor regressiedoeleinden met behulp van principale componenten analyse samengevat in een beperkt aantal orthogonale en interpreteerbare factor scores, waarvan vijf verwijzend naar vormen van fysieke werkbelasting en zeven naar indicatoren van de geestelijke werkbelasting. Samenvattend laten de schattingsresultaten van model B zien dat de SLM voorspelling dat looncompensatie voor verschillende ongemakken en risico's op het werk vooral ten goede komt aan werknemers op de primaire arbeidsladder en niet tot nauwelijks aan secundaire werknemers voor de Nederlandse horeca geen empirische geldigheid heeft.

Aanvullend op de onderscheiden scholingsindicatoren en arbeidsomstandigheden in model B hebben ook groepskenmerken en enkele andere baankenmerken voor het loonvormingsproces in de Nederlandse horeca verklaringskracht. De schattingsresultaten van *model C* laten zien dat werknemers met een vaste aanstelling significant meer verdienen dan werknemers met een tijdelijk arbeidscontract. Deze waarneming geldt voor alle deelmarkten. Ook de omvang van de baan is significant bepalend voor de loonpositie: werknemers in groot deeltijd verdienen significant meer (uurloon) dan werknemers met een kleine deeltijdbaan. Dit geldt voor werknemers in het secundaire segment en aan de onderkant van het primaire spectrum. Passend bij de SLM voorspellingen verdienen werknemers op de secundaire arbeidsladder die in het buitenland zijn geboren significant minder dan werknemers met Nederland als geboorteland. Niet conform de SLM verwachtingen is het geslacht van de werknemer alleen aan de onderkant van de primaire arbeidsmarkt significant bepalend voor de loonpositie, waarbij mannen gemiddeld 5 procent meer verdienen dan vrouwen. Wel in overstemming met de segmentatietheorie hebben beide groepskenmerken op de vakdeelmarkt geen verklaringskracht. Gelet op de multivariate omgeving in model C waarbij gecontroleerd is voor uiteenlopende werknemers- en baankenmerken is het voor te stellen, maar niet duidelijk of en in welke mate de waargenomen achterblijvende inkomensposities in de verschillende deelmarkten illustratief zijn voor discriminatie effecten.

Na correctie voor verschillende werknemers- en baankenmerken worden in de literatuur voor de loonbepaling ook vaak afzonderlijke bedrijfstakeffecten waargenomen en een significant positief effect van de grootte van het bedrijf. In bijvoorbeeld Berkhout, De Graaf, Heyma en Theeuwes (2001) geldt de Nederlandse horeca als een duidelijk voorbeeld waarin werknemers over het algemeen een lager uurloon ontvangen dan werknemers in andere bedrijfstakken. De schattingsresultaten van *model D* in dit hoofdstuk met aanvullend (op model C) indicatorvariabelen van de bedrijfsgroep en de grootteklasse van de vestiging als loonbepalende factoren in de Nederlandse horeca laten zien dat beide variabelen alleen op de primaire arbeidsmarkt verklaringskracht hebben. Conform de verwachting wordt in beide primaire arbeidsmarktsegmenten waargenomen dat de individuele arbeidsbeloning in kleine vestigingen (1-9 werknemers) significant lager is dan in vestigingen met 10-19 werknemers.

Hoewel op onderdelen de schattingsresultaten van de beloningsfuncties in overeenstemming zijn met de segmentatietheorie en in het algemeen de omvang en significantie van de corresponderende parameterschattingen tussen de arbeidsmarktsegmenten niet zelden

verschillen is het opvallend dat met verschillende F toetsen de hypothese van parameter constantheid niet wordt verworpen. Langs deze statistische weg kan dus worden geconcludeerd dat er in de Nederlandse horeca geen sprake is van significant verschillende beloningsprocessen tussen de verschillende werknemersgroepen.

In hoofdstuk 6 – bestuderen we het onderwerp flexibiliteit van arbeid in de Nederlandse horeca. Ook arbeidsflexibiliteit kan worden beschouwd als een instrument voor ondernemers om de arbeidsproductiviteit te stimuleren. De segmentatietheorie voorspelt duidelijk verschillende flexibiliteitspraktijken voor verschillende werknemersgroepen (Atkinson (1984, 1988), Huiskamp (1999) en Goudswaard (2003)). In het streven van de ondernemer naar de *juiste werknemer op het juiste moment op de juiste plaats* geldt in het bijzonder de SLM verwachting dat instrumenten die samenhangen met het bevorderen van de kennis en vaardigheden van het personeel (functionele arbeidsflexibiliteit) naar verhouding vaker binnen het primaire arbeidsmarktsegment zullen worden toegepast, terwijl het stimuleren van de kwantitatieve wendbaarheid van de organisatie (numerieke arbeidsflexibiliteit) naar verhouding meer van toepassing is op de secundaire arbeidsmarkt. Voor het toetsen van de empirische plausibiliteit van deze SLM representatie van de flexibele onderneming in de Nederlandse horeca dienen de UWV data en de PCS arbeidsmarktsegmenten als analysebasis.

Aanvullende scholing kan worden beschouwd als een instrument voor het stimuleren van functionele arbeidsflexibiliteit. Conform de SLM voorspellingen hebben werknemers in de Nederlandse horeca hoger op de arbeidsladder relatief vaker horecacursussen afgerond dan werknemers die lager zijn gepositioneerd. In september 2001 heeft 74 procent van alle beroepsopgeleide werknemers (ook) één of meer horecacursussen afgerond. Aan de onderkant van de primaire arbeidsmarkt is dit 58 procent en in het secundaire arbeidsmarktsegment 25 procent. Deze rangorde geldt voor alle specifieke horecacursussen zoals onderscheiden in het Horeca Werknemersonderzoek. Passend bij deze bevindingen hebben hotelwerknemers vaker horecacursussen afgerond dan werknemers in de andere bedrijfsgroepen. Bijvoorbeeld, 17 procent van alle hotelwerknemers heeft één of meer managementcursussen afgerond. In de andere bedrijfsgroepen is dit 5 procent of minder. Voor bedrijfsinterne opleidingen worden vergelijkbare uitkomsten waargenomen. Ook in een multivariate setting laten logit schattingen zien dat primaire werknemers een grotere kans op aanvullende scholing hebben dan secundaire werknemers.

Ook in overeenstemming met de SLM verwachtingen worden kleine deeltijdbanen, flexibele arbeidstijden en tijdelijke aanstellingen in de Nederlandse horeca – als indicatoren van numerieke arbeidsflexibiliteit – bovenal op de secundaire arbeidsmarkt waargenomen. Van alle secundaire werknemers heeft 87 procent een kleine deeltijdbaan (inclusief variabele werktijden) en is 63 procent tijdelijk aangesteld. Op beide primaire deelmarkten zijn deze percentages significant lager: respectievelijk 14 en 24 procent op de vakdeelmarkt en 18 en 22 procent aan de onderkant van de primaire arbeidsmarkt.

Niet alle uitingen van arbeidsflexibiliteit in de Nederlandse horeca zijn in lijn met de SLM voorspellingen. Overwerk is hiervan een voorbeeld. Op de vakdeelmarkt bedraagt het

overwerk gemiddeld bijna vier uur per week, op de secundaire arbeidsmarkt is dit twee uur. Passend bij deze bevindingen geeft tweederde van alle beroepsopgeleide werknemers aan wel eens meer dan tien uur per dag te moeten werken. Op de secundaire arbeidsmarkt is dit aandeel gehalveerd. Een ander voorbeeld betreft het gebruik van uitzendkrachten als een indicator van externe numerieke flexibiliteit dat in de hotelsector naar verhouding veel intensiever is dan in de andere bedrijfsgroepen.

Hoewel conclusies afhankelijk zijn van de specifieke flexibiliteitsmaatstaf (zie ook Smulders en Klein Hesselink (1997)) kan worden geconcludeerd dat de plausibiliteit van de SLM representatie van de flexibele onderneming in de Nederlandse horeca voor een belangrijk deel empirisch wordt ondersteund. Dit geldt ook voor de afzonderlijke bedrijfsgroepen binnen deze bedrijfstak.

Hoofdstuk 7 – Ongeveer 30 procent van de totale omzet in de Nederlandse horeca (excl. BTW) bestaat uit personeelskosten (Dutch Board for the Hospitality and Catering Industry (2006)). Kapitaal is naar verhouding een veel kleinere kostenpost. Gelet op het arbeidsintensieve karakter van dienstverlening (productie) in de Nederlandse horeca is het monitoren van de arbeidsproductiviteit voor ondernemers een belangrijk aandachtspunt voor een duurzame bedrijfsvoering. Een instrument voor onderzoekers om de verschillen in arbeidsproductiviteit tussen bedrijven te bestuderen is het lineaire arbeidskostenmodel met variabele parameters zoals ontwikkeld in Nooteboom (1980, 1982) voor de detailhandel (zie ook Thurik (1984) en Frenk, Thurik en Bout (1991)). De toepasselijkheid van dit model voor de Nederlandse horeca is beargumenteerd in Klomp (1996). In hoofdstuk 7 vullen we een gat in de literatuur door bij het schatten van het arbeidskostenmodel voor de verschillende bedrijfsgroepen in de Nederlandse horeca expliciet rekening te houden met flexibiliteit van arbeid.

Hiertoe introduceren we dynamiek in het arbeidskostenmodel door gebruik te maken van 1993-2000 panel data van individuele horecabedrijven die participeren in het Horeca Analyse Systeem (HAS, zie paragraaf 7.2). In het bijzonder hanteren we een autoregressief arbeidskostenmodel voortkomend uit de veronderstelling van partiële aanpassing. Teneinde in dit panel data raamwerk rekening te houden met de niet waarneembare bedrijfsspecifieke effecten die de wijze bepalen waarop in horecabedrijven met arbeid wordt omgegaan schatten we in eerste instantie drie varianten van een *one-way error component regression model*: (1) een arbeidskostenmodel onder de veronderstelling van vaste effecten, (2) een arbeidskostenmodel onder de veronderstelling van random effecten en, gelet op de gevolgen van dynamiek in een standaard one-way error component regression model, (3) een arbeidskostenmodel volgens de Arellano en Bond (1991) methodologie met als doel consistentie en efficiëntie in de parameterschatters te verkrijgen (zie ook Mátyás en Sevestre (1996) en Baltagi (2002)). Onder de veronderstelling van *one-way error components* komen individuele effecten in een panel data arbeidskostenmodel tot uitdrukking door bedrijfsspecifieke arbeidsdrempels (constante term).

Een natuurlijke uitbreiding van een one-way error component regression model is een specificatie, waarbij niet alleen de arbeidsdrempel heterogeen is, maar ook de overige

modelparameters bedrijfsspecifiek worden verondersteld. Voor empirische uitwerking van een dergelijk meer uitgebreid arbeidskostenmodel is gekozen voor een niet-lineair regressiemodel, waarbij elk van de variabele modelparameters expliciet wordt gemodelleerd als een niet-lineaire functie van relevante bedrijfsspecifieke verklarende variabelen en corresponderende te schatten vaste parameters: (4) een arbeidskostenmodel in de traditie van Klomp-Thurik (Klomp (1996)), uitgebreid met arbeidsflexibiliteit als invloedssfeer.

Gegeven het uitgangspunt van partiële aanpassing in de verschillende specificaties van het arbeidskostenmodel verwijst de parameter met betrekking tot de invloed van arbeidsflexibiliteit in het bijzonder naar de mate waarin in een bedrijfsgroep *the actual change in labour volume is in harmony with its desired change*. Meer flexibiliteit betekent een betere aanpassing. Voor het onderzoeken van de mate waarin de arbeidsflexibiliteit over de tijd varieert worden twee onderzoeksperioden onderscheiden, namelijk 1993-1997 en 1996-2000.

De schattingsresultaten van het niet-lineaire arbeidskostenmodel laten zien dat kan worden gesproken van een significante uitbreiding van het Klomp-Thurik model. Deze waarneming geldt voor alle bedrijfsgroepen in de Nederlandse horeca en voor beide onderzoeksperioden. In de periode 1993-1997 wordt de numerieke arbeidsflexibiliteit in (gemiddelde) HAS cafébedrijven en restaurants hoger geschat dan in (gemiddelde) HAS fastfoodbedrijven en hotels. In de periode 1996-2000 is dit beeld andersom, waarbij de flexibiliteit in de fastfoodsector het hoogst wordt geschat en in de drankensector nauwelijks aanpassingsvermogen wordt waargenomen. Voor alle bedrijfsgroepen in beide perioden geldt dat de schattingen van de (gemiddelde) flexibiliteitsparameter in het niet-lineaire arbeidskostenmodel in lijn zijn met de parameterschattingen van een one-way error component regression model met random effecten, welke ook alle significant zijn. Daarentegen wordt in het Arellano en Bond model in dit kader alleen significantie waargenomen in (a) de hotelsector in 1993-1997 en (b) in de restaurantsector in 1996-2000, waarbij de betreffende puntschattingen juist meer in overeenstemming zijn met de schattingen van een error component regression model met vaste effecten.

De regressieresultaten van het niet-lineaire arbeidskostenmodel laten verder zien dat de arbeidsproductiviteit in een bedrijfsgroep over het algemeen varieert met de aangeboden diensten. Hierbij is de productiviteit veelal hoger voor die diensten die als hoofdactiviteit van de bedrijfsvoering kunnen worden beschouwd (e.g. het verzorgen van maaltijden in de restaurantsector en logies in de hotelsector). Specifiek voor de hotelsector wordt ook waargenomen dat conform de verwachting een hoger dienstenniveau in de periode 1996-2000 een significant positief effect heeft op de arbeidsintensiteit en daarmee een druk legt op de productiviteit.

Gelet op het karakteristieke productieproces zullen mogelijkheden tot het verkrijgen van economies of scale in de Nederlandse horeca naar verwachting beperkt zijn. In overeenstemming met de bevindingen in Klomp (1996) laten ook de schattingsresultaten van het niet-lineaire arbeidskostenmodel in dit hoofdstuk zien dat economies of scale met betrekking tot arbeidsproductiviteit alleen aanwezig zijn in HAS restaurants en hotels.

Hoofdstuk 8 – Het laatste hoofdstuk van dit proefschrift betreft een empirische analyse van individuele arbeidsmobiliteit in de Nederlandse horeca. De segmentatietheorie voorspelt dat de invloed van de rijkheid van het menselijk kapitaal van werknemers op het mobiliteitsdenken en –gedrag op de primaire arbeidsmarkt meer systematisch is dan in het secundaire segment. Om te onderzoeken in hoeverre in de Nederlandse horeca de waargenomen mobiliteitspraktijken afhankelijk zijn van het arbeidsmarktsegment waarin een werknemer werkzaam is en passend zijn bij de SLM voorspellingen worden enkele segmentspecifieke mobiliteitsvergelijkingen geschat. Als vertrekpunt hierbij dienen de UWV data en PCS arbeidsmarktsegmenten. Als belangrijke pijlers van de mobiliteitsgeneigdheid en feitelijke arbeidsmobiliteit van horecawerknemers worden de volgende indicatoren als regressand beschouwd: (1) algemene baantevredenheid, (2) zoekinspanningen op de externe arbeidsmarkt, (3) vrijwillige werkgeversmobiliteit van een baan in de Nederlandse horeca naar een baan in een andere bedrijfstak en (4) interne mobiliteit. Als determinanten worden uiteenlopende werknemers-, baan- en bedrijfskenmerken onderscheiden. Een belangrijke aanvulling op de economische studies naar de arbeidsmobiliteit in Nederland in Hartog, Mekkelholt en Van Ophem (1987), Dekker, De Grip en Heijke (1995), De Graaf en Luijkx (1997) en bijvoorbeeld De Wolff, Luijkx en Kerkhofs (2002) is hierbij de opname van verschillende aspecten van de ervaren lichamelijke en geestelijke werkbelasting als beïnvloedingscategorie. Hiertoe wordt gebruik gemaakt van de uitkomsten van de factor analyses in hoofdstuk 5.

Voor elk van de vier mobiliteitsindicatoren kan worden gesproken van deels verschillende verklaringsprocessen tussen de werknemersgroepen. De logit schattingen van de verschillende tevredenheidsmodellen laten zien dat in de Nederlandse horeca baanaspecten als antecedenten van de algemene baantevredenheid (als voorspeller van vrijwillig personeelsverloop) kunnen worden aangewezen die *uniek* zijn voor een werknemersgroep. Dit geldt bijvoorbeeld voor de individuele arbeidsbeloning voor werknemers op de secundaire arbeidsmarkt en passend bij de duale arbeidsmarkttheorie voor de beleving van onderbenutting van het kwalificatieniveau voor primaire werknemers. Hierbij leidt een hogere arbeidsbeloning en een passende benutting van het kwalificatieniveau tot meer (kans op) baantevredenheid. Secundaire banen in de Nederlandse horeca worden voor een belangrijk deel ingenomen door studenten en schoolgaande jongeren en voor deze leeftijdsgroep kan worden verwacht dat de financiële verdiensten van werken op de arbeidsmarkt een relatief hoge waarde vertegenwoordigt, i.e. een onderdeel is van zijn of haar *expectation set* (Porter en Steers (1973)), en waarvan de omvang dan ook significant bepalend is voor de tevredenheid met de huidige werkzaamheden.

Ook kunnen determinanten van de algemene baantevredenheid worden onderscheiden die voor *verschillende* werknemersgroepen significant zijn, maar waarbij het geschatte effect duidelijk verschillend is. Dit geldt bijvoorbeeld voor de ervaren werkdruk en de mogelijkheden om werk en privé op elkaar af te stemmen. Wat betreft de lichamelijke en geestelijke werkbelasting laten de empirische bevindingen zien dat baantevredenheid vooral wordt bepaald door werkaspecten waarvan kan worden verondersteld dat deze primair van invloed zijn op de geestelijke belasting. Hierbij hebben alle significante

parameterschattingen het verwachte effect. Voor alle werknemers in de Nederlandse horeca geldt dat de mening over de werkorganisatie en directe leiding het grootste effect heeft op de tevredenheid met de werkzaamheden, op de primaire arbeidsmarkt gevolgd door de ervaren werkdruk en voor secundaire werknemers door de ervaren regelmogelijkheden om werk en privé op elkaar af te stemmen. Voor jongeren heeft deze afstemming naar verwachting vooral betrekking op de mogelijkheden om de bijbaan in de Nederlandse horeca goed te kunnen combineren met onderwijs.

De werkrelatie met collegae en de mate waarin werkbelemmering wordt ervaren door onverwachte situaties en de afwezigheid van collegae zijn voorbeelden van werkaspecten die voor zowel primaire als secundaire werknemers in de Nederlandse horeca een min of meer *even groot* significant effect hebben op de baantevredenheid. Tot slot kunnen ook baanaspecten worden genoemd die in *geen* van de werknemersgroepen significant bepalend zijn voor de algemene baantevredenheid. Dit geldt bijvoorbeeld voor het soort arbeidscontract en de omvang van de baan (als instrumenten van numerieke arbeidsflexibiliteit).

Voor een duurzame bedrijfsvoering kan worden verwacht dat ondernemers zullen streven naar functionele immobiliteit, i.e. het behoud van gewaardeerde werknemers (secundair en primair) voor de organisatie. In dit opzicht bieden de empirische tevredenheidsmodellen aanknopingspunten voor segmentspecifiek personeelsbeleid. Passend bij het concept van een gesegmenteerde arbeidsmarkt worden mogelijkheden tot gericht beleid ook waargenomen voor de mobiliteitsaspiraties in de vorm van zoekinspanningen op de externe arbeidsmarkt en voor beide onderscheiden vormen van arbeidsmobiliteit.

De empirische bevindingen zijn evenwel niet altijd in overeenstemming met de SLM voorspellingen. Dit geldt bijvoorbeeld voor het effect van aanvullende horecascholing op de zoekinspanningen en externe mobiliteit. In overeenstemming met de SLM verwachtingen is de invloed van aanvullende scholing op de externe zoekinspanningen aan de onderkant van de primaire arbeidsmarkt meer systematisch dan in het secundaire arbeidsmarktsegment. Niet passend bij de SLM voorspellingen is het zoekgedrag op de vakdeelmarkt, net als op de secundaire arbeidsladder, niet afhankelijk van aanvullende scholingsinvesteringen.

Conform de verwachting van meer promotiemogelijkheden en organisatorische betrokkenheid zijn werknemers aan de onderkant van de primaire arbeidsmarkt met één of meer afgeronde *bedrijfsinterne* opleidingen minder vaak zoekend naar een baan bij een andere werkgever dan werknemers zonder interne opleidingen. Aan de andere kant leidt een toename van het aantal afgeronde *algemene* cursussen afgestemd op de horecapraktijk binnen deze primaire werknemersgroep tot een intensivering van de zoekinspanningen. Deze waarneming past bij de verwachting dat algemene training samengaat met het verwerven van kennis en vaardigheden met een relatief grote aanwendbaarheid binnen de bedrijfstak en mogelijk ook daarbuiten. Voor zover bedrijfsinterne opleidingen ook worden ingezet om de betrokkenheid bij de organisatie te stimuleren, lijkt deze strategie dus in het bijzonder aan de onderkant van de primaire arbeidsmarkt effect te hebben.

In lijn met de schattingsresultaten van het zoekmodel leidt een toename van het aantal algemene cursussen aan de onderkant van de primaire arbeidsladder tot meer vrijwillig personeelsverloop naar een baan in een andere bedrijfstak en interne opleidingen tot minder externe mobiliteit over de bedrijfstakgrenzen. Hoewel van algemene horecacursussen in eerste instantie een grote aanwendbaarheid binnen de bedrijfstak kan worden verwacht, zijn uiteraard ook horeca-achtige functies buiten de bedrijfstak voor te stellen waar deze scholingsinvesteringen rendabel kunnen zijn. Overigens ook in andersoortige functies, bijvoorbeeld naar aanleiding van een managementopleiding. Eveneens passend bij de schattingsresultaten van het zoekmodel, maar niet bij de SLM verwachtingen hebben aanvullende scholingsinvesteringen op de vakdeelmarkt geen significant mobiliteitseffect.

Algemeen beeld – De empirische verkenningen in dit boek laten zien dat het concept van arbeidsmarktsegmentatie voor de bestudering van structuur en gedrag op de horeca arbeidsmarkt in Nederland een vruchtbare denkwereld is. Na het doorlopen van de traditioneel sequentiële SLM stappen (zie figuur 1.1) kan worden geconcludeerd dat het doel van dit proefschrift is bereikt, i.e. een verrijking van onze kennis omtrent het functioneren van de arbeidsmarkt in de Nederlandse horeca.

De validiteit van de PCS arbeidsmarktsegmenten (SLM perspectief van de ondernemer) blijkt uit de analyses omtrent structuur en homogeniteit in de hoofdstukken 3 en 4. Vervolgens laten de empirische bevindingen in de hoofdstukken daarna zien dat op het gebied van arbeidsbeloning, arbeidsflexibiliteit en arbeidsmobiliteit als kernelementen binnen de arbeidsmarktsegmentatietheorie voor een belangrijk deel significant verschillende verklaringsprocessen en praktijken tussen de werknemersgroepen kunnen worden onderscheiden. Dit biedt aanknopingspunten voor het voeren van segmentspecifiek beleid; arbeidsmarktbeleid door de overheid en binnen ondernemingen personeelsbeleid op maat. Ondanks significante verschillen tussen de deelmarkten zijn de empirische bevindingen evenwel niet altijd ten faveure van de segmentatiehypothese. De vraag of de arbeidsmarkt in de Nederlandse horeca gesegmenteerd is kan niet eenduidig worden beantwoord.

De verkenningen in de hoofdstukken 3 en 4 laten ook zien dat voor empirische validiteit van de getrokken demarcatielijnen in de Nederlandse horeca de PCS segmentatiebenadering niet uniek is. Ook de IEQ arbeidsmarktsegmenten (SLM perspectief van de werknemer) kunnen voor een belangrijk deel als valide worden beschouwd.

Curriculum vitae

Arménio Bispo was born in Rotterdam on April 18, 1968. From 1980 to 1986 he attended the 'R.K. Scholengemeenschap Citycollege St. Franciscus' in Rotterdam. After completing Gymnasium he began his study in econometrics at the Erasmus University Rotterdam and graduated in the 'Algemeen-econometrische richting' in August 1991. The last three years of his study he worked as a student-assistant in the Econometrics Department of the Econometric Institute of the Erasmus University. After graduation, he held a position as Research Fellow at the Research Institute for Population Economics, a department of the 'Stichting voor Economisch Onderzoek Rotterdam', studying aspects of poverty in the Netherlands. Since January 1993 he holds a research position at the Dutch Board for the Hospitality and Catering Industry in Zoetermeer, studying, among other things, consumer and labour market behaviour in the Dutch hospitality industry.

ERASMUS RESEARCH INSTITUTE OF MANAGEMENT (ERIM)

ERIM PH.D. SERIES
RESEARCH IN MANAGEMENT

ERIM Electronic Series Portal: http://hdl.handle.net/1765/1

Althuizen, N.A.P., *Analogical Reasoning as a Decision Support Principle for Weakly Structured Marketing Problems*, Promotor: Prof. dr. ir. B. Wierenga, EPS-2006-095-MKT, ISBN 90-5892-129-8, http://hdl.handle.net/1765

Alvarez, H.L., *Distributed Collaborative Learning Communities Enabled by Information Communication Technology*, Promotor: Prof. dr. K. Kumar, EPS-2006-080-LIS, ISBN 90-5892-112-3, http://hdl.handle.net/1765/7830

Appelman, J.H., *Governance of Global Interorganizational Tourism Networks: Changing Forms of Co-ordination between the Travel Agency and Aviation Sector*, Promotors: Prof. dr. F.M. Go & Prof. dr. B. Nooteboom, EPS-2004-036-MKT, ISBN 90-5892-060-7, http://hdl.handle.net/1765/1199

Baquero, G, *On Hedge Fund Performance, Capital Flows and Investor Psychology*, Promotor: Prof. dr. M.J.C.M. Verbeek, EPS-2006-094-F&A, ISBN 90-5892-131-X, http://hdl.handle.net/1765

Berens, G., *Corporate Branding: The Development of Corporate Associations and their Influence on Stakeholder Reactions*, Promotor: Prof. dr. C. B. M. van Riel, EPS-2004-039-ORG, ISBN 90-5892-065-8, http://hdl.handle.net/1765/1273

Berghe, D.A.F. van den, *Working Across Borders: Multinational Enterprises and the Internationalization of Employment*, Promotors: Prof. dr. R.J.M. van Tulder & Prof. dr. E.J.J. Schenk, EPS-2003-029-ORG, ISBN 90-5892-05-34, http://hdl.handle.net/1765/1041

Berghman, L.A., *Strategic Innovation Capacity: A Mixed Method Study on Deliberate Strategic Learning Mechanisms*, Promotor: Prof. dr. P. Mattyssens, EPS-2006-087-MKT, ISBN 90-5892-120-4, http://hdl.handle.net/1765/7991

Bijman, W.J.J., *Essays on Agricultural Co-operatives: Governance Structure in Fruit and Vegetable Chains*, Promotor: Prof. dr. G.W.J. Hendrikse, EPS-2002-015-ORG, ISBN: 90-5892-024-0, http://hdl.handle.net/1765/867

Blindenbach-Driessen, F., *Innovation Management in Project-Based Firms*, Promotor: Prof. dr. S.L. van de Velde, EPS-2006-082-LIS, ISBN: 90-5892-110-7, http://hdl.handle.net/1765/7828

Boer, C.A., *Distributed Simulation in Industry,* Promotors: Prof. dr. A. de Bruin & Prof. dr. ir. A. Verbraeck, EPS-2005-065-LIS, ISBN: 90-5892-093-3, http://hdl.handle.net/1765/6925

Boer, N.I., *Knowledge Sharing within Organizations: A situated and Relational Perspective,* Promotor: Prof. dr. K. Kumar, EPS-2005-060-LIS, ISBN: 90-5892-086-0, http://hdl.handle.net/1765/6770

Brito, M.P. de, *Managing Reverse Logistics or Reversing Logistics Management?* Promotors: Prof. dr. ir. R. Dekker & Prof. dr. M. B. M. de Koster, EPS-2004-035-LIS, ISBN: 90-5892-058-5, http://hdl.handle.net/1765/1132

Brohm, R., *Polycentric Order in Organizations: A Dialogue between Michael Polanyi and IT-Consultants on Knowledge, Morality, and Organization,* Promotors: Prof. dr. G. W. J. Hendrikse & Prof. dr. H. K. Letiche, EPS-2005-063-ORG, ISBN: 90-5892-095-X, http://hdl.handle.net/1765/6911

Campbell, R.A.J., *Rethinking Risk in International Financial Markets*, Promotor: Prof. dr. C.G. Koedijk, EPS-2001-005-F&A, ISBN: 90-5892-008-9, http://hdl.handle.net/1765/306

Chen, Y., *Labour Flexibility in China's Companies: An Empirical Study*, Promotors: Prof. dr. A. Buitendam & Prof. dr. B. Krug, EPS-2001-006-ORG, ISBN: 90-5892-012-7, http://hdl.handle.net/1765/307

Daniševská, P., *Empirical Studies on Financial Intermediation and Corporate Policies*, Promotor: Prof. dr. C.G. Koedijk, EPS-2004-044-F&A, ISBN 90-5892-070-4, http://hdl.handle.net/1765/1518

Delporte-Vermeiren, D.J.E., *Improving the Flexibility and Profitability of ICT-enabled Business Networks: An Assessment Method and Tool*, Promotors: Prof. mr. dr. P.H.M. Vervest & Prof. dr. ir. H.W.G.M. van Heck, EPS-2003-020-LIS, ISBN: 90-5892-040-2, http://hdl.handle.net/1765/359

Derwall, J.M.M., *The Economic Virtues of SRI and CSR*, Promotor: Prof. dr. C.G. Koedijk, EPS-2007-101-STR, ISBN: 90-5892-132-8, http://hdl.handle.net/1765

Dijksterhuis, M., *Organizational Dynamics of Cognition and Action in the Changing Dutch and US Banking Industries*, Promotors: Prof. dr. ir. F.A.J. van den Bosch & Prof. dr. H.W. Volberda, EPS-2003-026-STR, ISBN: 90-5892-048-8, http://hdl.handle.net/1765/1037

Fenema, P.C. van, *Coordination and Control of Globally Distributed Software Projects*, Promotor: Prof. dr. K. Kumar, EPS-2002-019-LIS, ISBN: 90-5892-030-5, http://hdl.handle.net/1765/360

Fleischmann, M., *Quantitative Models for Reverse Logistics*, Promotors: Prof. dr. ir. J.A.E.E. van Nunen & Prof. dr. ir. R. Dekker, EPS-2000-002-LIS, ISBN: 35-4041-711-7, http://hdl.handle.net/1765/1044

Flier, B., *Strategic Renewal of European Financial Incumbents: Coevolution of Environmental Selection, Institutional Effects, and Managerial Intentionality*, Promotors: Prof. dr. ir. F.A.J. van den Bosch & Prof. dr. H.W. Volberda, EPS-2003-033-STR, ISBN: 90-5892-055-0, http://hdl.handle.net/1765/1071

Fok, D., *Advanced Econometric Marketing Models*, Promotor: Prof. dr. P.H.B.F. Franses, EPS-2003-027-MKT, ISBN: 90-5892-049-6, http://hdl.handle.net/1765/1035

Ganzaroli , A., *Creating Trust between Local and Global Systems*, Promotors: Prof. dr. K. Kumar & Prof. dr. R.M. Lee, EPS-2002-018-LIS, ISBN: 90-5892-031-3, http://hdl.handle.net/1765/361

Gilsing, V.A., *Exploration, Exploitation and Co-evolution in Innovation Networks*, Promotors: Prof. dr. B. Nooteboom & Prof. dr. J.P.M. Groenewegen, EPS-2003-032-ORG, ISBN 90-5892-054-2, http://hdl.handle.net/1765/1040

Ginkel, W.P. van, *The Use of Distributed Information in Decision Making Groups: The Role of Shared Task Representations*, Promotor: Prof. dr. D. van Knippenberg, EPS-2007-097-ORG, http://hdl.handle.net/1765

Govers, R., *Virtual Tourism Destination Image: Glocal Identities Constructed, Perceived and Experienced*, Promotors: Prof. dr. F.M. Go & Prof. dr. K. Kumar, EPS-2005-069-MKT, ISBN 90-5892-107-7, http://hdl.handle.net/1765/6981

Graaf, G. de, *Tractable Morality: Customer Discourses of Bankers, Veterinarians and Charity Workers*, Promotors: Prof. dr. F. Leijnse & Prof. dr. T. van Willigenburg, EPS-2003-031-ORG, ISBN: 90-5892-051-8, http://hdl.handle.net/1765/1038

Groot, E.A. de, *Essays on Economic Cycles*, Promotors: Prof. dr. Ph.H.B.F. Franses & Prof Prof. dr. H.R. Commandeur, EPS-2006-091-MKT, ISBN: 90-5892-123-9, http://hdl.handle.net/1765

Gutkowska, A.B., *Essays on the Dynamic Portfolio Choice*, Promotor: Prof. dr. A.C.F. Vorst, EPS-2006-085-F&A, ISBN: 90-5892-118-2, http://hdl.handle.net/1765/7994

Hagemeijer, R.E., *The Unmasking of the Other*, Promotors: Prof. dr. S.J. Magala & Prof. dr. H.K. Letiche, EPS-2005-068-ORG, ISBN: 90-5892-097-6, http://hdl.handle.net/1765/6963

Hartigh, E. den, *Increasing Returns and Firm Performance: An Empirical Study*, Promotor: Prof. dr. H.R. Commandeur, EPS-2005-067-STR, ISBN: 90-5892-098-4, http://hdl.handle.net/1765/6939

Hermans. J.M., *ICT in Information Services, Use and Deployment of the Dutch Securities Trade, 1860-1970.* Promotor: Prof. dr. drs. F.H.A. Janszen, EPS-2004-046-ORG, ISBN 90-5892-072-0, http://hdl.handle.net/1765/1793

Heugens, P.P.M.A.R., *Strategic Issues Management: Implications for Corporate Performance*, Promotors: Prof. dr. ir. F.A.J. van den Bosch & Prof. dr. C.B.M. van Riel, EPS-2001-007-STR, ISBN: 90-5892-009-7, http://hdl.handle.net/1765/358

Heuvel, W. van den, *The Economic Lot-Sizing Problem: New Results and Extensions*, Promotor: Prof. dr. A.P.L. Wagelmans, EPS-2006-093-LIS, ISBN: 90-5892-124-7, http://hdl.handle.net/1765/1

Hooghiemstra, R., *The Construction of Reality*, Promotors: Prof. dr. L.G. van der Tas RA & Prof. dr. A.Th.H. Pruyn, EPS-2003-025-F&A, ISBN: 90-5892-047-X, http://hdl.handle.net/1765/871

Huij, J.J., *New Insights into Mutual Funds: Performance and Family Strategies*, Promotor: Prof. dr. M.C.J.M. Verbeek, EPS-2007-099-F&A, ISBN: 90-5892-134-4, http://hdl.handle.net/1765

Huurman, C.I., *Dealing with Electricity Prices*, Promotor: Prof. dr. C.D. Koedijk, EPS-2007-098-F&A, ISBN: 90-5892-130-1, http://hdl.handle.net/1765

Iastrebova, K, *Manager's Information Overload: The Impact of Coping Strategies on Decision-Making Performance*, Promotor: Prof. dr. H.G. van Dissel, EPS-2006-077-LIS, ISBN 90-5892-111-5, http://hdl.handle.net/1765/7329

Iwaarden, J.D. van, *Changing Quality Controls: The Effects of Increasing Product Variety and Shortening Product Life Cycles,* Promotors: Prof. dr. B.G. Dale & Prof. dr. A.R.T. Williams, EPS-2006-084-ORG, ISBN 90-5892-117-4, http://hdl.handle.net/1765/7992

Jansen, J.J.P., *Ambidextrous Organizations*, Promotors: Prof. dr. ir. F.A.J. Van den Bosch & Prof. dr. H.W. Volberda, EPS-2005-055-STR, ISBN 90-5892-081-X, http://hdl.handle.net/1765/6774

Jong, C. de, *Dealing with Derivatives: Studies on the Role, Informational Content and Pricing of Financial Derivatives*, Promotor: Prof. dr. C.G. Koedijk, EPS-2003-023-F&A, ISBN: 90-5892-043-7, http://hdl.handle.net/1765/1043

Keizer, A.B., *The Changing Logic of Japanese Employment Practices: A Firm-Level Analysis of Four Industries,* Promotors: Prof. dr. J.A. Stam & Prof. dr. J.P.M. Groenewegen, EPS-2005-057-ORG, ISBN: 90-5892-087-9, http://hdl.handle.net/1765/6667

Kippers, J., *Empirical Studies on Cash Payments,* Promotor: Prof. dr. Ph.H.B.F. Franses, EPS-2004-043-F&A, ISBN 90-5892-069-0, http://hdl.handle.net/1765/1520

Kole, E., *On Crises, Crashes and Comovements*, Promotors: Prof. dr. C.G. Koedijk & Prof. dr. M.J.C.M. Verbeek, EPS-2006-083-F&A, ISBN 90-5892-114-X, http://hdl.handle.net/1765/7829

Knapp, S., *The Econometrics of Maritime Safety: Recommendations to Enhance Safety at Sea*, Promotor: Prof. dr. Ph.H.B.F. Franses, EPS-2007-096-ORG, ISBN 90-5892-127-1, http://hdl.handle.net/1765

Koppius, O.R., *Information Architecture and Electronic Market Performance*, Promotors: Prof. dr. P.H.M. Vervest & Prof. dr. ir. H.W.G.M. van Heck, EPS-2002-013-LIS, ISBN: 90-5892-023-2, http://hdl.handle.net/1765/921

Kotlarsky, J., *Management of Globally Distributed Component-Based Software Development Projects,* Promotor: Prof. dr. K. Kumar, EPS-2005-059-LIS, ISBN: 90-5892-088-7, http://hdl.handle.net/1765/6772

Kuilman, J., *The Re-Emergence of Foreign Banks in Shanghai: An Ecological Analysis,* Promotor: Prof. dr. B. Krug, EPS-2005-066-ORG, ISBN: 90-5892-096-8, http://hdl.handle.net/1765/6926

Langen, P.W. de, *The Performance of Seaport Clusters: A Framework to Analyze Cluster Performance and an Application to the Seaport Clusters of Durban, Rotterdam and the Lower Mississippi*, Promotors: Prof. dr. B. Nooteboom & Prof. drs. H.W.H. Welters, EPS-2004-034-LIS, ISBN: 90-5892-056-9, http://hdl.handle.net/1765/1133

Le Anh, T., *Intelligent Control of Vehicle-Based Internal Transport Systems*, Promotors: Prof. dr. M.B.M. de Koster & Prof. dr. ir. R. Dekker, EPS-2005-051-LIS, ISBN 90-5892-079-8, http://hdl.handle.net/1765/6554

Le-Duc, T., *Design and Control of Efficient Order Picking Processes*, Promotor: Prof. dr. M.B.M. de Koster, EPS-2005-064-LIS, ISBN 90-5892-094-1, http://hdl.handle.net/1765/6910

Lentink, R.M., *Algorithmic Decision Support for Shunt Planning*, Promotors: Prof. dr. L.G. Kroon & Prof. dr. ir. J.A.E.E. van Nunen, EPS-2006-073-LIS, ISBN 90-5892-104-2, http://hdl.handle.net/1765/7328

Liang, G., *New Competition: Foreign Direct Investment and Industrial Development in China,* Promotor: Prof. dr. R.J.M. van Tulder, EPS-2004-047-ORG, ISBN 90-5892-073-9, http://hdl.handle.net/1765/1795

Loef, J., *Incongruity between Ads and Consumer Expectations of Advertising*, Promotors: Prof. dr. W.F. van Raaij & Prof. dr. G. Antonides, EPS-2002-017-MKT, ISBN: 90-5892-028-3, http://hdl.handle.net/1765/869

Londoño, M. del Pilar, *Institutional Arrangements that Affect Free Trade Agreements: Economic Rationality Versus Interest Groups*, Promotors: Prof. dr. H.E. Haralambides & Prof. dr. J.F. Francois, EPS-2006-078-LIS, ISBN: 90-5892-108-5, http://hdl.handle.net/1765/7578

Maeseneire, W., de, *Essays on Firm Valuation and Value Appropriation,* Promotor: Prof. dr. J.T.J. Smit, EPS-2005-053-F&A, ISBN 90-5892-082-8, http://hdl.handle.net/1765/6768

Mandele, L.M., van der, *Leadership and the Inflection Point: A Longitudinal Perspective*, Promotors: Prof. dr. H.W. Volberda & Prof. dr. H.R. Commandeur, EPS-2004-042-STR, ISBN 90-5892-067-4, http://hdl.handle.net/1765/1302

Meer, J.R. van der, *Operational Control of Internal Transport*, Promotors: Prof. dr. M.B.M. de Koster & Prof. dr. ir. R. Dekker, EPS-2000-001-LIS, ISBN: 90-5892-004-6, http://hdl.handle.net/1765/859

Mentink, A., *Essays on Corporate Bonds*, Promotor: Prof. dr. A.C.F. Vorst, EPS-2005-070-F&A, ISBN: 90-5892-100-X, http://hdl.handle.net/1765/7121

Miltenburg, P.R., *Effects of Modular Sourcing on Manufacturing Flexibility in the Automotive Industry: A Study among German OEMs*, Promotors: Prof. dr. J. Paauwe & Prof. dr. H.R. Commandeur, EPS-2003-030-ORG, ISBN: 90-5892-052-6, http://hdl.handle.net/1765/1039

Moerman, G.A., *EmpiricalStudies on Asset Pricing and Banking in the Euro Area,* Promotor: Prof. dr. C.G. Koedijk, EPS-2005-058-F&A, ISBN: 90-5892-090-9, http://hdl.handle.net/1765/6666

Mol, M.M., *Outsourcing, Supplier-relations and Internationalisation: Global Source Strategy as a Chinese Puzzle*, Promotor: Prof. dr. R.J.M. van Tulder, EPS-2001-010-ORG, ISBN: 90-5892-014-3, http://hdl.handle.net/1765/355

Mom, T.J.M., *Managers' Exploration and Exploitation Activities: The Influence of Organizational Factors and Knowledge Inflows*, Promotors: Prof. dr. ir. F.A.J. Van den Bosch & Prof. dr. H.W. Volberda, EPS-2006-079-STR, ISBN: 90-5892-116-6, http://hdl.handle.net/1765

Mulder, A., *Government Dilemmas in the Private Provision of Public Goods*, Promotor: Prof. dr. R.J.M. van Tulder, EPS-2004-045-ORG, ISBN: 90-5892-071-2, http://hdl.handle.net/1765/1790

Muller, A.R., *The Rise of Regionalism: Core Company Strategies Under The Second Wave of Integration*, Promotor: Prof. dr. R.J.M. van Tulder, EPS-2004-038-ORG, ISBN 90-5892-062-3, http://hdl.handle.net/1765/1272

Oosterhout, J., van, *The Quest for Legitimacy: On Authority and Responsibility in Governance*, Promotors: Prof. dr. T. van Willigenburg & Prof.mr. H.R. van Gunsteren, EPS-2002-012-ORG, ISBN: 90-5892-022-4, http://hdl.handle.net/1765/362

Pak, K., *Revenue Management: New Features and Models*, Promotor: Prof. dr. ir. R. Dekker, EPS-2005-061-LIS, ISBN: 90-5892-092-5, http://hdl.handle.net/1765/362/6771

Peeters, L.W.P., *Cyclic Railway Timetable Optimization*, Promotors: Prof. dr. L.G. Kroon & Prof. dr. ir. J.A.E.E. van Nunen, EPS-2003-022-LIS, ISBN: 90-5892-042-9, http://hdl.handle.net/1765/429

Pietersz, R., *Pricing Models for Bermudan-style Interest Rate Derivatives*, Promotors: Prof. dr. A.A.J. Pelsser & Prof. dr. A.C.F. Vorst, EPS-2005-071-F&A, ISBN 90-5892-099-2, http://hdl.handle.net/1765/7122

Popova, V., *Knowledge Discovery and Monotonicity*, Promotor: Prof. dr. A. de Bruin, EPS-2004-037-LIS, ISBN 90-5892-061-5, http://hdl.handle.net/1765/1201

Pouchkarev, I., *Performance Evaluation of Constrained Portfolios*, Promotors: Prof. dr. J. Spronk & Dr. W.G.P.M. Hallerbach, EPS-2005-052-F&A, ISBN 90-5892-083-6, http://hdl.handle.net/1765/6731

Puvanasvari Ratnasingam, P., *Interorganizational Trust in Business to Business E-Commerce*, Promotors: Prof. dr. K. Kumar & Prof. dr. H.G. van Dissel, EPS-2001-009-LIS, ISBN: 90-5892-017-8, http://hdl.handle.net/1765/356

Rinsum, M. van, *Performance Measurement and Managerial Time Orientation*, Promotor: Prof. dr. F.G.H. Hartmann, EPS-2006-088-F&A, ISBN: 90-5892-121-2, http://hdl.handle.net/1765/7993

Romero Morales, D., *Optimization Problems in Supply Chain Management*, Promotors: Prof. dr. ir. J.A.E.E. van Nunen & Dr. H.E. Romeijn, EPS-2000-003-LIS, ISBN: 90-9014078-6, http://hdl.handle.net/1765/865

Roodbergen , K.J., *Layout and Routing Methods for Warehouses*, Promotors: Prof. dr. M.B.M. de Koster & Prof. dr. ir. J.A.E.E. van Nunen, EPS-2001-004-LIS, ISBN: 90-5892-005-4, http://hdl.handle.net/1765/861

Schramade, W.L.J., *Corporate Bonds Issuers,* Promotor: Prof. dr. A. De Jong, EPS-2006-092-F&A, ISBN: 90-5892-125-5, http://hdl.handle.net/1765

Schweizer, T.S., *An Individual Psychology of Novelty-Seeking, Creativity and Innovation,* Promotor: Prof. dr. R.J.M. van Tulder. EPS-2004-048-ORG, ISBN: 90-5892-07-71, http://hdl.handle.net/1765/1818

Six, F.E., *Trust and Trouble: Building Interpersonal Trust Within Organizations*, Promotors: Prof. dr. B. Nooteboom & Prof. dr. A.M. Sorge, EPS-2004-040-ORG, ISBN 90-5892-064-X, http://hdl.handle.net/1765/1271

Slager, A.M.H., *Banking across Borders*, Promotors: Prof. dr. D.M.N. van Wensveen & Prof. dr. R.J.M. van Tulder, EPS-2004-041-ORG, ISBN 90-5892-066–6, http://hdl.handle.net/1765/1301

Sloot, L., *Understanding Consumer Reactions to Assortment Unavailability*, Promotors: Prof. dr. H.R. Commandeur, Prof. dr. E. Peelen & Prof. dr. P.C. Verhoef, EPS-2006-074-MKT, ISBN 90-5892-102-6, http://hdl.handle.net/1765/7438

Smit, W., *Market Information Sharing in Channel Relationships: Its Nature, Antecedents and Consequences*, Promotors: Prof. dr. ir. G.H. van Bruggen & Prof. dr. ir. B. Wierenga, EPS-2006-076-MKT, ISBN 90-5892-106-9, http://hdl.handle.net/1765/7327

Sonnenberg, M., *The Signalling Effect of HRM on Psychological Contracts of Employees: A Multi-level Perspective*, Promotor: Prof. dr. J. Paauwe, EPS-2006-086-ORG, ISBN 90-5892-119-0, http://hdl.handle.net/1765/7995

Speklé, R.F., *Beyond Generics: A closer Look at Hybrid and Hierarchical Governance*, Promotor: Prof. dr. M.A. van Hoepen RA, EPS-2001-008-F&A, ISBN: 90-5892-011-9, http://hdl.handle.net/1765/357

Teunter, L.H., *Analysis of Sales Promotion Effects on Household Purchase Behavior*, Promotors: Prof. dr. ir. B. Wierenga & Prof. dr. T. Kloek, EPS-2002-016-ORG, ISBN: 90-5892-029-1, http://hdl.handle.net/1765/868

Tims, B., *Empirical Studies on Exchange Rate Puzzles and Volatility*, Promotor: Prof. dr. C.G. Koedijk, EPS-2006-089-F&A, ISBN: 90-5892-113-1, http://hdl.handle.net/1765/8066

Valck, K. de, *Virtual Communities of Consumption: Networks of Consumer Knowledge and Companionship*, Promotors: Prof. dr. ir. G.H. van Bruggen & Prof. dr. ir. B. Wierenga, EPS-2005-050-MKT, ISBN 90-5892-078-X, http://hdl.handle.net/1765/6663

Verheul, I., *Is There a (Fe)male Approach? Understanding Gender Differences in Entrepreneurship*, Prof. dr. A.R. Thurik, EPS-2005-054-ORG, ISBN 90-5892-080-1, http://hdl.handle.net/1765/2005

Vis, I.F.A., *Planning and Control Concepts for Material Handling Systems*, Promotors: Prof. dr. M.B.M. de Koster & Prof. dr. ir. R. Dekker, EPS-2002-014-LIS, ISBN: 90-5892-021-6, http://hdl.handle.net/1765/866

Vlaar, P.W.L., *Making Sense of Formalization in Interorganizational Relationships: Beyond Coordination and Control,* Promotors: Prof. dr. ir. F.A.J. Van den Bosch & Prof. dr. H.W. Volberda, EPS-2006-075-STR, ISBN 90-5892-103-4, http://hdl.handle.net/1765/7326

Vliet, P. van, *Downside Risk and Empirical Asset Pricing*, Promotor: Prof. dr. G.T. Post, EPS-2004-049-F&A, ISBN 90-5892-07-55, http://hdl.handle.net/1765/1819

Vries-van Ketel E. de, *How Assortment Variety Affects Assortment Attractiveness: A Consumer Perspective*, Promotors: Prof. dr. G.H. van Bruggen & Prof.dr.ir. A.Smidts, EPS-2006-072-MKT, ISBN 90-5892-101-8, http://hdl.handle.net/1765/7193

Vromans, M.J.C.M., *Reliability of Railway Systems*, Promotors: Prof. dr. L.G. Kroon, Prof. dr. ir. R. Dekker & Prof. dr. ir. J.A.E.E. van Nunen, EPS-2005-062-LIS, ISBN: 90-5892-089-5, http://hdl.handle.net/1765/6773

Vroomen, B.L.K., *The Effects of the Internet, Recommendation Quality and Decision Strategies on Consumer Choice*, Promotor: Prof. dr. Ph.H.B.F. Franses, EPS-2006-090-MKT, ISBN: 90-5892-122-0, http://hdl.handle.net/1765/8067

Waal, T. de, *Processing of Erroneous and Unsafe Data*, Promotor: Prof. dr. ir. R. Dekker, EPS-2003-024-LIS, ISBN: 90-5892-045-3, http://hdl.handle.net/1765/870

Wennekers, A.R.M., *Entrepreneurship at Country Level: Economic and Non-Economic Determinants,* Promotor: Prof. dr. A.R. Thurik, EPS-2006-81-ORG, ISBN 90-5892-115-8, http://hdl.handle.net/1765/7982

Wielemaker, M.W., *Managing Initiatives: A Synthesis of the Conditioning and Knowledge-Creating View*, Promotors: Prof. dr. H.W. Volberda & Prof. dr. C.W.F. Baden-Fuller, EPS-2003-28-STR, ISBN 90-5892-050-X, http://hdl.handle.net/1765/1036

Wijk, R.A.J.L. van, *Organizing Knowledge in Internal Networks: A Multilevel Study*, Promotor: Prof. dr. ir. F.A.J. van den Bosch, EPS-2003-021-STR, ISBN: 90-5892-039-9, http://hdl.handle.net/1765/347

Wolters, M.J.J., *The Business of Modularity and the Modularity of Business*, Promotors: Prof. mr. dr. P.H.M. Vervest & Prof. dr. ir. H.W.G.M. van Heck, EPS-2002-011-LIS, ISBN: 90-5892-020-8, http://hdl.handle.net/1765/920

Labour Market Segmentation

An Investigation into the Dutch Hospitality Industry

Almost 42,000 establishments, over 310,000 employees and approximately 13 billion Euro annual turnover (including VAT). This, in a nutshell, captures the Dutch hospitality industry in 2005. The aim of this study is to examine the functioning of the labour market in the Dutch hospitality industry. The work force is a significant element in this industry for generating turnover. It is therefore vital to focus attention on the various aspects of labour to work towards a sustainable business operation. There needs to be a constant effort here to achieve a balance between quantity and quality. This balance is effected, for example, by an appropriate earnings structure, flexibility of the work force and functional employee turnover. To expand on these, and other aspects of the labour market it is the testing of the empirical plausibility of a segmented labour market in the Dutch hospitality industry that forms the common theme throughout this book.

The empirical investigations reveal that the theory of labour market segmentation is a fruitful approach to the study of structure and behaviour in the Dutch hospitality industry. In the fields of individual earnings, labour flexibility and labour mobility – core elements within the segmentation theory – we can to a large extent identify significantly different worker groups. This offers starting points for implementing a segment-specific policy; labour market policy by the government and Human Resources Management within organizations.

ERIM

The Erasmus Research Institute of Management (ERIM) is the Research School (Onderzoekschool) in the field of management of the Erasmus University Rotterdam. The founding participants of ERIM are RSM Erasmus University and the Erasmus School of Economics. ERIM was founded in 1999 and is officially accredited by the Royal Netherlands Academy of Arts and Sciences (KNAW). The research undertaken by ERIM is focussed on the management of the firm in its environment, its intra- and inter-firm relations, and its business processes in their interdependent connections.

The objective of ERIM is to carry out first rate research in management, and to offer an advanced graduate program in Research in Management. Within ERIM, over two hundred senior researchers and Ph.D. candidates are active in the different research programs. From a variety of academic backgrounds and expertises, the ERIM community is united in striving for excellence and working at the forefront of creating new business knowledge.

ERIM
ERASMUS RESEARCH
INSTITUTE OF MANAGEMENT

www.erim.eur.nl