

Careers of Men and Women in the 19th and 20th Centuries

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Layout

Bariş Yerli

Printed by

Wöhrmann Print Service

ISBN

978-90-393-5983-9

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Careers of Men and Women in the 19th and 20th Centuries

Carrières van mannen en vrouwen in de 19de en 20ste eeuw
(met een samenvatting in het Nederlands)

Proefschrift

ter verkrijging van de graad van doctor
aan de Universiteit Utrecht op gezag van de rector magnificus,
prof.dr. G.J. van der Zwaan,
ingevolge het besluit van het college voor promoties
in het openbaar te verdedigen op
vrijdag 5 juli 2013 des middags te 4.15 uur

door

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geboren op 25 januari 1983
te Wesel, Duitsland

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The research for this thesis was made possible by a research grant from the Netherlands Organization for Scientific Research (NWO) [Project “Careers in Context” (Free competition project no. 400-08-230)]

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1

Introduction

1.1 Background and research questions

During the decades following World War II, the Western world saw an increasing confidence among the working population and social scientists alike that most people would have occupational careers characterized by upward mobility and by ‘good jobs’ (Jacoby 1984, 1985). The breeding ground for this idea is commonly dated to the mid- to late nineteenth century (Mitch, Brown and van Leeuwen 2004), a period characterized by tremendous economic, social and institutional change (including industrialization, mass communication and educational expansion). Figure 1.1a and 1.1b show how several processes of modernization developed in the Netherlands in the period 1865 to 1929. Industrialization, indicated by the number of steam engines purchased, increased fivefold between 1865 and 1890. Likewise, the provision of education rapidly expanded. By 1900 over six times more students were in secondary education than had been in 1865; by 1929 this figure had increased a further fourfold (see figure 1.1a). Mass transportation, indicated by the number of train stations, increased steadily. In 1865 around 100 train stations were served. By 1900 this number had increased fourfold and rose further to almost 500 by 1929. The number of post offices – an indicator of mass communication – more than doubled from 1865 to 1918 (see figure 1.1b).

The significance of these modernization processes for the present study is that they are expected to have caused changes in status attainment over the course of people’s careers. Across the social spectrum, the population at large is predicted to have had more successful careers.

There are generally two ways in which macro-societal changes are thought to have influenced career attainment. First, processes such as industrialization and educational expansion are expected to have directly influenced individual mobility outcomes. With the occupational and educational structure being ‘upgraded’, people increasingly got better jobs. Second, the process of status attainment during one’s career is expected to have changed owing to modernization processes. It is claimed that the influence of individual characteristics on people’s careers changed in response to modernization processes (Treiman 1970). Personal qualifications became more important for career attainment than an individual’s status at birth.

The studies that empirically test these claims of changes in status attainment for a broad range of occupations and across different regions mainly address status attainment through marriage and intergenerational attainment (see Long and Ferrie 2007, Zijdeman 2008, van Leeuwen and Maas 2010 for a review). Studies addressing changes in status attainment over the course of careers are restricted largely to certain occupations or regions (Bras 2004, Maas and van Leeuwen 2004).

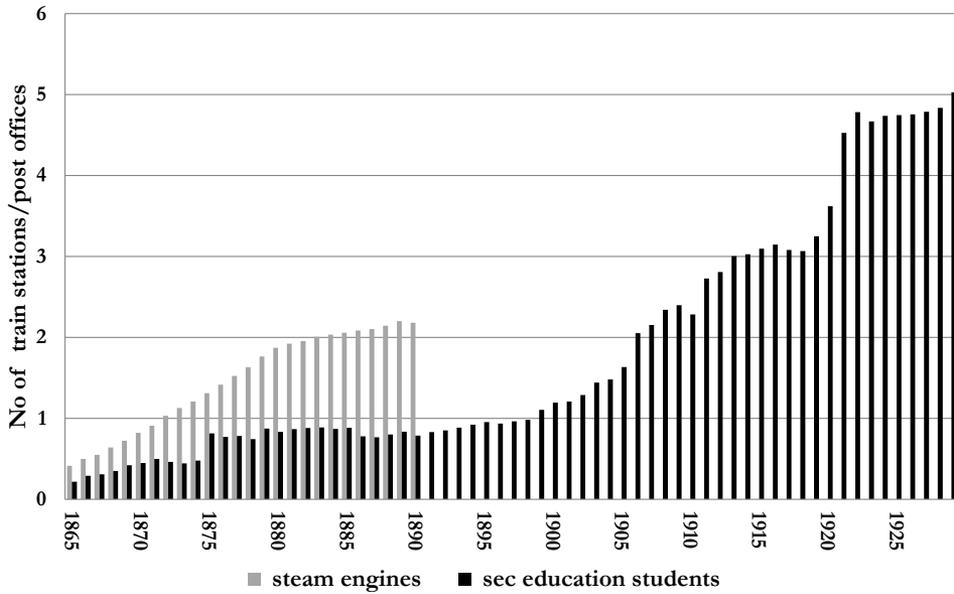


Figure 1.1a Modernization processes in the Netherlands, 1865–1929.
 Note: Educational expansion: number of students in secondary education per 1000 inhabitants; industrialization: number of steam engines ever purchased in a municipality per 1000 inhabitants.

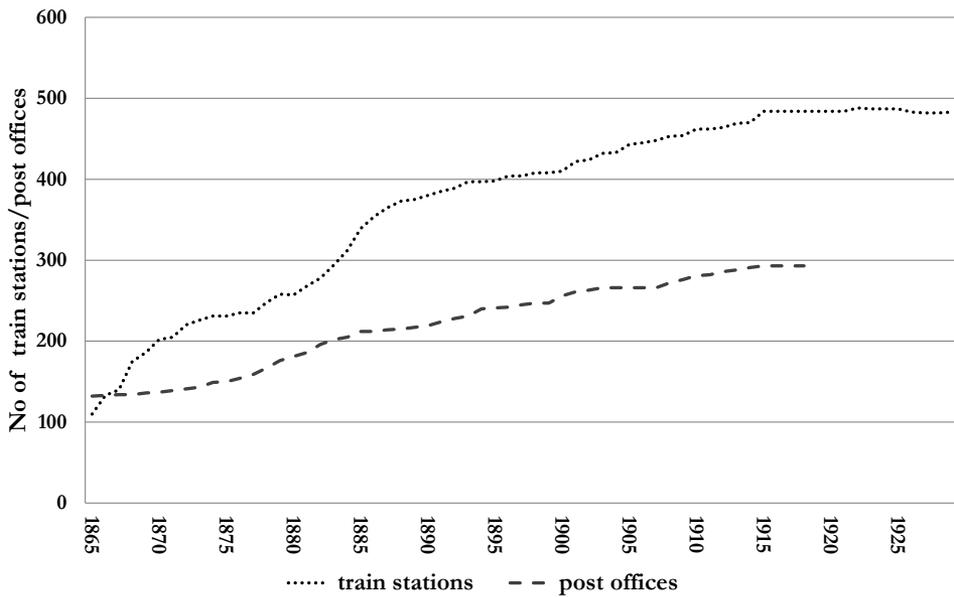


Figure 1.1b Modernization processes in the Netherlands, 1865–1929.
 Note: mass communication: number of post offices; mass transport: number of train stations.

An issue that remains unaddressed is how modernization processes impacted status attainment over the career of the general population and how processes of status attainment were influenced by modernization. The central aim of this dissertation therefore involves:

Studying the process of status attainment during the careers of men and women in the nineteenth and early twentieth centuries and the influence of modernization processes on that process of status attainment.

The concept of career carries numerous connotations. It ranges from the view that only upwardly mobile people have careers, which implies a large part of the population has no career at all (Wilensky 1960, Spilerman 1977, Bühlmann 2008), to a more comprehensive understanding of careers as entire working lives that can be more or less successful (Brown, van Leeuwen and Mitch 2004). I employ the latter, more comprehensive view of career; thus I study any kind of working-life history, any succession of occupations held by an individual.

The general approach taken in this dissertation is to study careers over a long period of time for the general female and male population. I study the development of occupational status over people's careers in the period 1865 to 1940. I explain career success by studying the effects of individual characteristics, such as experience and social background, and the influence of regional modernization processes, such as educational expansion and industrialization. Moreover, I assess whether the effects of individual characteristics on career attainment changed over time and according to regional modernization processes.

Because little is known about careers in the nineteenth and twentieth centuries, I first take a descriptive approach, asking whether there was a gradual development of occupational careers in the century before World War II in the direction of greater career success.

In addition to studying the careers of individuals, I study one of the mechanisms expected to have brought about changes in individual mobility outcomes: the hiring behaviour of employers. According to theories of industrialism, modernization processes caused employers to recruit employees increasingly on the basis of achieved characteristics, such as qualifications and experience, rather than ascribed characteristics, such as religious affiliation and social background. I study ascription- and achievement-based hiring by analysing the requirements stipulated by employers in job advertisements in Dutch newspapers in the period 1870 to 1939. I describe what achieved and ascribed characteristics employers looked for in job advertisements, and how this changed over the course of 69 years. Finally, I go on to study whether the requirements stipulated depended on the type of occupation and the extent of modernization in the location for which the job was advertised.

Research questions:

Trend questions

- i. Was there a gradual development in the occupational careers of men and women in the Netherlands in the century before World War II in the direction of greater career success?
- ii. Looking at the period 1870 to 1939, did employers in the Netherlands decreasingly select on ascribed characteristics?

Explanatory questions

- i. How can we explain individual differences in career success of men and women?
- ii. What modernization processes explain whether men and women had successful occupational careers?
- iii. Did the mechanisms of status attainment change depending on modernization processes?
- iv. Were employers who sought employees for more complex and higher-status occupations less likely to select on ascribed characteristics?
- v. Were employers in more modernized areas less likely to select on ascribed characteristics?

1.2 Earlier research on careers and status attainment processes

1.2.1 Sociological research on careers

There is the vast body of research literature by stratification sociologists on careers in the post-World-War-II period (e.g., Spilerman 1977, Carroll and Mayer 1986, Blossfeld 1986, Blossfeld, Mills and Bernardi 2006, Barone and Schizzerotto 2011, Barone, Lucchini and Schizzerotto 2011). In general, scholars in this field have concluded that individuals from a higher social background, with higher levels of education and more work experience had more successful occupational careers (Blau and Duncan 1967, Blossfeld 1986, Carroll and Mayer 1986, Blossfeld and Mayer 1988).

Predictions concerning the development of status over the course of an individual's life are often derived from the human capital model. This model predicts that an individual's status is not static, but changes over the course of his or her career (Becker 1975). Education and training are important investments in human capital. The more individuals invest in their human capital, the more productive they will be. Occupational attainment reflects these differences in productivity. Sociological research on occupational careers is also referred to as intragenerational mobility research, and it studies upward, downward and sometimes lateral mobility rather than

analysing the whole careers of individuals (Sørensen 1975, Blossfeld 1986, Carroll and Mayer 1986, Blossfeld and Mayer 1988, Allmendinger 1989). In several recent studies, stratification sociologists have focused on research questions concerning life-cycle destandardization (Blossfeld, Mills and Bernardi 2006) and there has been renewed interest in the role of social origin in occupational career attainment (Barone, Lucchini and Schizzerotto 2011).

Research focusing on contextual influences studies variations in career attainment in the light of macro developments such as globalization and economic crises (e.g., Blossfeld 1986, Allmendinger 1989, Barone and Schizzerotto 2011, Wolbers, Luijkx and Ultee 2011). Regional differences within countries in, for example, economic conditions are largely ignored. Yet another strand of stratification sociology addresses the role of contextual influences by including sectoral, organizational and occupational characteristics for studying social mobility during careers (see Rosenfeld 1992 for the most comprehensive review).

The classical theories on status attainment focus solely on the careers of men (e.g., Treiman 1970, Blau and Duncan 1967). From the 1970s onwards status attainment models were also applied to the careers of women (Tyree and Treas 1974, Treiman and Terrell 1975). Importantly, the female labour force works in fewer sectors and occupations than the male labour force, and women are more prone to drop out of the labour market owing to childbearing and family obligations. Research has focused on explaining sex differences in occupational attainment, and on how occupational segregation between men and women has shaped the careers of women (Blossfeld 1987). In general, research on women's status attainment compared with that of men pays more explicit attention to family factors. The recent literature on women's careers focuses on what determines whether women return to the labour market, and on mobility moves after childbirth (Aisenbrey, Evertsson and Grunow 2009, Gangl and Ziefle 2009, Abendroth 2013).

Sociological studies of careers address a number of different influences on career attainment, yet they commonly study cohorts born in the twentieth century whose careers generally post-dated World War II. While those studies are therefore not directly related to this dissertation, the theoretical insights of sociological research on careers into the career dynamics of men and women will be important for the development of hypotheses for studying careers during modernization in the Netherlands. In particular, theoretical ideas on the role of individual characteristics, such as experience and social background, will be used.

The theoretical approaches used to study contextual influences, including national levels of globalization, cannot be applied directly to analyses of the effect of modernization processes on career attainment. The developments during modernization differed in their nature from developments after World War II. Moreover, whereas current research mainly addresses national differences, differences in, for example, occupational and educational structure at a municipal level are presumably more relevant for studying careers in the nineteenth and twentieth centuries. Both before and during modernization there were considerable variations in socio-economic

development in different regions in the Netherlands. Because in the late nineteenth and early twentieth centuries people were less geographically mobile than they were subsequently to become, local differences were presumably more closely related to career success.

1.2.2 Historical research on careers

The historical literature on careers has focused on the organizational context by studying the development of bureaucracies and of opportunities for training and advancement (Jacoby 1985), mainly in relation to the emergence of internal labour market (ILM) structures. These studies address the emergence of specific career patterns due to the emergence of hierarchical bureaucratic and managerial organizations. Firms introduced ILM structures to attract the most talented employees, who were willing and able to learn firm-specific skills on a continuous basis; in return, employers offered perspectives for progress up a job ladder, often based on seniority.

There are ample examples of studies addressing the development of ILM structures: Shpayer-Makov (2004) studies the emergence of career ladders in the English police force; Miles and Savage (2004) explore the creation of bureaucratic structures in the Post Office, the Great Western Railways and Lloyds Bank; Stovel, Savage and Bearman (1996) study the emergence of what they call the ‘achievement career’ at Lloyds Bank. Seltzer and Simons (2001) provide comprehensive evidence for ILM practices at the Union Bank of Australia.

Historical studies of careers offer in-depth analyses and detailed descriptions over a longer period of time but are restricted to already modernized contexts – namely organizations with ILM structures – and to certain occupations – clerks and other administrative personnel for example. Research on organizations with ILM structures is restricted in terms of its generalizability because only a small, though increasing, part of the population was actually working in these modernized contexts. Noteworthy other studies include Mitch’s (2004) study of English farm labourers in the second half of the nineteenth century and the early twentieth century and the study by Kaelble (1985) in which he compares career mobility in Europe and the US in the nineteenth and twentieth centuries.

The historical research on women’s careers has likewise focused on specific contexts. Examples include in-depth descriptions of the life courses of women in the Belgian town of Verviers (Alter 1988), an examination of the survival strategies of eighteenth- and nineteenth-century female middle-class proprietors in London (Kay 2004), and Moreels’s (2008) study of the career development of mothers in Antwerp. Burnette and Stanfors (2012) provide a detailed account of the occupations and incomes of women working in the Swedish tobacco industry at the end of the nineteenth century, and Bras (2004) studies women in domestic service. There are also general descriptions of the labour-force participation of women in the nineteenth and twentieth centuries. These studies focus on the role of cross-national cultural and demographic

differences in the participation of women in the labour market (Plantenga 1993, Pott-Buter 1993). They provide insights into the legal and cultural settings in which women aimed to realize their occupational careers. At the beginning of the twentieth century there were a number of successful and unsuccessful attempts to prohibit the employment of married women. Though in the late nineteenth and early twentieth centuries the Netherlands had no national legislation that prohibited the labour market participation of all married women, discriminative behaviour by employers probably constrained women's career attainment. In 1904, marriage bars were introduced in the postal and telegraph service. In 1924 a provision was enacted entitling municipalities to dismiss female teachers who got married; in 1934 a marriage bar was introduced in the teaching sector. Although many provisions to forbid employment to married women fell into disuse or were officially scrapped, the discouraging tone of the public debate probably influenced the career success of women (Pott-Buter 1993).

There has been no systematic study of how modernization processes such as industrialization and educational expansion influenced the status attainment of the female population however. Thus the extent to which the experiences of women in certain occupations and sectors can be generalized to the population at large remains unclear.

Despite the constraints implicit in historical studies of careers, they provide us with important historical context and background information. How organizations responded to societal changes brought about by modernization processes and how that relates to the career patterns of individuals will be important aspects in developing hypotheses in the empirical chapters of this dissertation. Moreover, knowledge of the labour market participation of women and the circumstances in which they worked in different sectors is crucial to developing hypotheses on the careers of women in the nineteenth and twentieth centuries.

1.2.3 Research on intergenerational mobility during industrialization in the nineteenth and twentieth centuries

Research on intergenerational mobility provides theories and analyses of the attainment of occupational status at one point in the life course, and how this is affected by the characteristics of the family of origin (e.g., Blau and Duncan 1967) and, to a lesser extent, by economic, social and institutional changes (e.g., Treiman 1970). The most important theory on changes in intergenerational mobility is the logic of industrialism thesis. The main prediction of this theory is that modernization processes allow greater mobility between social strata. These modernization processes are industrialization, educational expansion, mass communication, mass transport and changes in values. Although there is a considerable amount of research on this topic, no conclusive answer to the question whether modernization processes led to greater social mobility between generations in the nineteenth and twentieth centuries has yet

been adduced (see van Leeuwen and Maas 2010 for a review). The reason for the lack of a consensus probably lies too in the fact that, so far, only Zijdemans (2008) has related variations in regional modernization processes to intergenerational mobility outcomes. Zijdemans (2010) finds general support for the logic of industrialism but he also finds that some of the modernization processes did not have the expected effect on status attainment.

Research on the intergenerational mobility of women is scarce. The source most commonly used to study such mobility before World War II are marriage certificates. However, marriage certificates less often provide information on the occupation of brides as compared to grooms, and even less frequently on the occupation of their mothers (Zijdemans 2010). Studies on intergenerational mobility are important for this dissertation, as it is likely that hypotheses on the attainment of occupational status at one point in the career can be applied too to the development of status over the whole career. Moreover, for the development of hypotheses on the effect of regional modernization processes the literature on intergenerational mobility during modernization provides a theoretical model that can be extended to the study of careers.

1.2.4 Research on hiring behaviour of employers

Research on the role of the employer in the allocation of jobs contributes important insights for this dissertation. Jackson (2007) studied class differentials in requirements by analysing job advertisements from the year 2000 and found that across the social strata employers request both ascribed and achieved characteristics. The finding that employers request ascribed characteristics regardless of whether they are recruiting for lower- or higher-class occupations is rather surprising, as theories of industrialism predict that the move from ascription to achievement as the primary basis of social selection is one of the defining characteristics of modern societies (Blau and Duncan 1967, Kerr *et al.* 1960).

The use of ascribed characteristics in selecting employees has also been addressed in a number of studies focusing on ethnic discrimination by employers in the job selection process. In a review of a number of recent studies, Pager (2007) concludes that an applicant's ethnicity has a large effect on the hiring decisions of employers. Theoretically, these studies approach biases in the hiring decisions of employers by drawing on economic theories of statistical discrimination and social-psychological theories of unconscious bias. These predict that discrimination will be most pronounced when objective information about the applicant is limited or unreliable. These studies focus mainly on ethnicity and gender, and study only (post)-industrial labour markets. Naturally, studies addressing selection processes in these modern labour markets do not assess the role of macro-societal developments such as industrialization and educational expansion. Nonetheless, these studies indicate that it was not unusual for employers recruiting in (post)-industrial labour markets to use ascribed characteristics.

I am not aware of any studies that address the hiring requirements of employers in the nineteenth and twentieth centuries, but there are more general accounts of personnel management by employers during modernization. Stovel, Savage and Bearman (1996) study the breakdown of the traditional ascriptive career system and its replacement by an achievement-based system at Lloyds Bank in Britain. They relate organizational growth and social change to changes in the career system, but their study is restricted to a single employer.

So far, it remains unclear whether the modernization processes that characterized the nineteenth and twentieth centuries did indeed cause a shift from ascription-based to achievement-based recruitment for occupations across the occupational structure.

1.3 Theoretical approach

To explain variations in the career success of men and women I will employ theoretical approaches to the influence of individual characteristics, to the effect of regional modernization processes and to the interrelation between individual characteristics and regional modernization processes. In what follows, I first describe the approach to the role of individual characteristics in career success. I consider those characteristics by studying the role of resources as well as of norms and societal expectations in career attainment.

I subsequently describe the approach concerning the effects of regional modernization processes on status attainment. I will use the logic of industrialism thesis, which predicts changes in processes of status attainment owing to regional variations in industrialization, educational expansion, mass communication, mass transport and changes in values. Moreover, according to this thesis the effects of individual characteristics, such as social background, vary in response to variations in regional modernization.

Finally, one of the mechanisms causing changes in status attainment will be studied. Theories on industrialism make predictions about changes in the selection behaviour of employers. A shift from ascription- to achievement-based hiring is supposed to have impacted individual mobility outcomes. According to the theory, industrialization, the emergence of internal labour market structures, educational expansion, mass transport, mass communication and value changes compelled employers to select employees increasingly based on achieved characteristics such as skills, education and experience. Ascribed characteristics, such as social background, marital status and religious affiliation, became less important hiring criteria.

Individual differences in career success – the role of resources and of norms and societal expectations in career attainment

I approach individual differences in occupational achievement from two perspectives. On the one hand variations in individual occupational achievement are attributed to differences in access to resources, and on the other hand to the influence of norms and societal expectations (Blau and Duncan 1967, Collins 1979). The main assumption of resource-based approaches is that people with greater resources will have more successful careers. I will discuss the influence of human and social capital as well as the intergenerational transmission of resources for career attainment. In particular, I examine the following characteristics: work experience, social background, basic schooling, migration, being married and having breadwinner responsibilities.

The second theoretical perspective focuses on the influence of social norms and expectations of how people pursue their occupational hopes and dreams, how they seek to comply with norms or how they are made objects of discrimination. I use this perspective to study the role of being married on the occupational careers of men and women. I make different predictions for men and women because, during the nineteenth and twentieth centuries, gender played an important role in the work sphere (e.g., Leydesdorff 1977, Lown 1990, de Haan 1992, Pott-Buter 1993, de Groot 2001). I use two role models – the male breadwinner and the female housewife models – that provide insights into societal expectations towards married people, but they also entail information on the perspectives of young men and women concerning their occupational lives as well as on general societal expectations and the discriminatory behaviour of employers associated with them. The male breadwinner and female housewife models are two sides of the same coin, with the first describing societal expectations with regard to and positive discrimination against married men and the latter focusing on normative expectations concerning the labour market behaviour of married women.

From the male breadwinner model hypotheses can be derived on changes in the behaviour of married men and employers that lead to an increase in status for men subsequent to their getting married. From the housewife model hypotheses can be derived on women stopping work after marriage. According to the model women also faced considerable restrictions from employers. They were more often assigned to dead-end positions (Goldin 1994), and marriage bars excluded women from employment once they had married (Thurow 1975, Leydesdorff 1977).

Theories on the effects of modernization processes on status attainment

Theories of industrialism take the view that status attainment processes fundamentally changed during the period of modernization (Inkeles 1960, Kerr *et al.* 1960, Treiman 1970, Kaelble 1985).

Industrialization is often understood to have brought many individuals economic and social success, and to have increased mobility rates (Inkeles 1960, Kerr *et al.* 1960, Kaelble 1985, Mitch, Brown and van Leeuwen 2004). The average occupational status of the population is assumed to have increased; individuals are believed to have enjoyed more successful careers, a higher level of status and income and increased upward mobility. Changes in mobility owing to variations in the occupational and educational structure are often referred to as structural mobility (Treiman 1970, Hauser *et al.* 1975, Brown, van Leeuwen and Mitch 2004).

For a number of modernization processes, the logic of industrialism thesis specifies how they affect processes of status attainment. Treiman's (1970) theory on the effects of various modernization processes on individual mobility outcomes forms the starting point for the development of hypotheses. Treiman (1970) relates societal changes in industrialization, educational expansion, mass communication, urbanization and changes in values to variations in the stratification system. More specifically, he predicts industrialized societies will be characterized by greater mobility than non-industrial societies. For example, it is expected that the influence of individual characteristics influencing attainment outcomes, such as social background, will vary in response to modernization processes. In pre-industrial societies, children were mainly trained in the family household. They learned occupational skills from their parents and were thus very likely to follow in their occupational footsteps. According to the logic of industrialism, the effect of social background becomes weaker owing to changes in the occupational and educational structure. New occupations emerge for which parents cannot train their children in the household. Children are also more likely to be able to choose an occupation different from that of their parents. I will apply theoretical ideas on changes in the effects of individual characteristics owing to modernization processes to social background, basic schooling, being married and breadwinner responsibilities. Since modernization processes such as industrialization and educational expansion may occur at different points in time and also expand at different rates, it is important to distinguish between them (see Zijdemans 2010). The modernization processes I consider are industrialization and the emergence of industrial facilities, mass communication, mass transport, educational expansion and the spread of universalistic values.

Further, I will use the logic of industrialism thesis to develop hypotheses on changes in the recruitment behaviour of employers. Occupational role allocation is supposed to have fundamentally changed due to a shift from ascription based to achievement-based selection. According to the logic of industrialism, changes in the recruitment behaviour of employers were one of the central mechanisms causing changes in status attainment. More specifically, modernization processes are predicted to cause employers to select less on the basis of ascribed characteristics. I will address changes in hiring preferences among employers in response to structural labour market changes, i.e., the emergence of more complex and higher-status occupations, and in response to other modernization processes, such as educational expansion and mass communication.

1.4 Empirical approach

1.4.1 Data

Individual career data

Unlike research focusing on specific occupational groups and localities, this dissertation uses data on the careers of a random sample of the male and female population nationwide. The Historical Sample of the Netherlands (HSN) contains information on the occupational careers of 8,291 men and 4,611 women who were present on the labour market between 1865 and 1940. The HSN is an excellent new database for the longitudinal study of male and female careers, covering the whole of the Netherlands. The HSN starts from a random sample of birth registers for the period 1812-1922. Once the data collection has been completed, the HSN will include the life courses of 78,000 individuals. Because data collection is still underway, we will use a subset (Data Set Life Courses Release 2010.01), which consists of information on individuals born between 1850 and 1922. All men and women for whom at least one occupation was recorded were selected. The sample was restricted to the ages in which most people belonged to the working population, i.e., people who are at least 15 years old without any maximum age.

The main data sources for individual life histories are birth certificates, death certificates, marriage certificates and the population registers (which were introduced to obtain continuous registration of household composition and place of residence of each individual). Every time a vital event occurred (marriage, birth of a child, move to another municipality for example) information on the individual and, if applicable, their family was recorded or updated. The recorded information includes an individual's date and place of birth, social background, current address as well as occupational details. Occupational information was registered or updated when a vital event occurred. The amount of occupational information we have on an individual depends on the number of vital events they experienced rather than on their occupational career per se (the number of different occupations they had for example). The data include 23,303 measurements of occupational information relating to 8,291 men and 9,982 relating to 4,611 women.

Job advertisements

In order to study changes in recruitment preferences among employers, I collected a sample of job advertisements from five Dutch newspapers for the period 1870 to 1939. In 2006 the Royal Dutch Library (kranten.kb.nl) embarked on a large-scale project to digitize newspapers from 1618 to the present. From the selection so far made available by the Royal Library I chose four

newspapers: *Het Nieuws van den Dag: de kleine Courant*, *Nieuwe Rotterdamsche Courant*, *Rotterdamsch Nieuwsblad* and the *Nieuwe Tilburgsche Courant*. In addition, I selected the *Leeuwarder Courant*. The *Leeuwarder Courant* is a general newspaper for a large region in the north of the Netherlands and has been digitized and published by the Stichting Digitaal Archief Noord-Nederland [Digital Archive North-Netherlands Foundation] (SDANN).

These newspapers cover a variety of religious and social subgroups within Dutch society. The selected newspapers include liberal, socialist and Catholic newspapers, as well as newspapers aimed at the general public. Further, the readership of the newspapers included both higher and lower social classes and covered different geographical regions. Job advertisements included information on the occupation and tasks that a potential employee would have to execute, and, to a varying extent, information on what the employer required. The sample I analysed includes 2,194 job advertisements drawn from five Dutch newspapers for the period 1870 to 1939. The data include advertisements for 244 different occupations in more than 154 municipalities over a period of 69 years.

Modernization indicators

One central aim of this dissertation is to study career attainment and changes therein in the light of modernization processes at a regional level. The theoretical indicators, such as communication, transport and social values, are therefore measured at the level of the municipality and, if possible, annually. Such an approach is as pertinent to the literature as it is difficult to implement. It is a challenge to systematically capture such indicators for hundreds of municipalities over several decades. Yet it is essential to attempt this, because, without it, classical theories cannot be, or can at best only partially be, empirically tested.

We have consulted several sources to collect data on regional modernization processes, such as industrialization, educational expansion and mass transport. The sources generally comprise official statistics or registers, and include the annual reviews on educational participation (*Verslagen voor het hoger, middelbaar en lager onderwijs*) (Scholen 1865-1928) and safety reports on steam engines drawn from the 'Registers of the Dutch Department for Steam Engineering'. Also, less common sources, including a website built by railway enthusiasts which reconstruct the Dutch railway system since its origins, were consulted to capture whether municipalities were served by the railways. In addition, I make use of indicators included in the Historical Ecological Database (HED) for Dutch municipalities (Beekink *et al.* 2003), including the number of inhabitants without religious affiliation.

1.5 Methods

In order to study occupational careers longitudinally using historical data, I employ a method that allows one to take account of the fact that an individual's status changed over the course of their career and that individuals changed their place of residence during their lifetime. The places where people pursued their occupational careers differed from one another in terms of how advanced processes of modernization – levels of industrialization for example – were. Moreover, the level of advancement of a particular location could change over time, since levels of industrialization could increase or decrease.

A special feature of the HSN data is that we do not know the exact timing of a change in an individual's occupation, but we do know what occupation they had at certain points in their lives. To take these features of the data into account, we propose to use cross-classified multilevel growth models (Hox 2002, Raudenbush and Bryk 2002).

The HSN data include multiple measurements of an individual's occupational status over their life course. We estimate growth models in which we predict that differential career success is affected by several individual and contextual determinants (Schulz and Maas 2010). We model career success to increase with age until a certain point towards the end of a given career. First, the level of occupational status at the start of a career; and secondly, the rate at which occupational status grew over the course of the career. These two aspects can be affected by time-constant individual characteristics, such as basic schooling,¹ and time-varying characteristics, such as marital status and regional characteristics, including levels of industrialization and educational expansion.

Figures 1.2 and 1.3 illustrate a simplified version of the method. In figure 1.2, all careers develop parallel to one another, meaning that the determinants have an effect only at the start of a career (in the case of time-constant characteristics) or at the moment they occur (time-varying characteristics), but that the rate of growth is not itself affected. Figure 1.3 shows what happens if this assumption is relaxed. Now, careers can develop at different rates: people who have basic schooling not only start their careers at a higher level, their occupational status grows faster too.

We use cross-classified models because our measurements of occupational status are nested in individuals and in varying 'contexts'. We cannot employ a classical hierarchical nesting structure because not all occupational measurements relating to a given individual are necessarily nested within the same 'context', since people moved during their occupational career. Figure 1.4 illustrates a simplified version of our data structure.

¹ Whether an individual was able to read and write may have changed over the course of their life. Because we have information on whether an individual was able to write relating to one point in time, namely at marriage, we treat this characteristic as a constant.

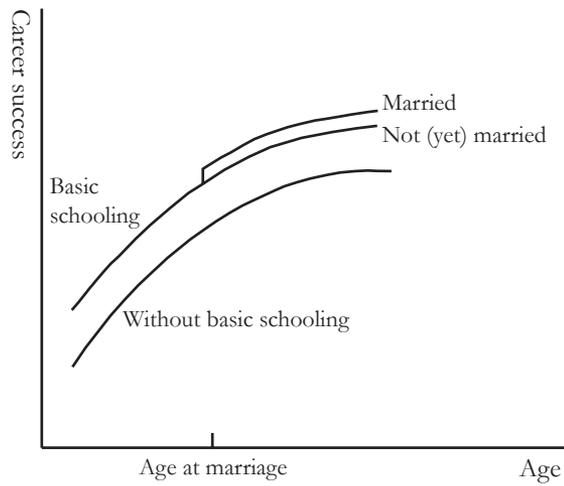


Figure 1.2 Effects of time-constant and time-varying characteristics on occupational status at the start of a career and at the point the time-varying variable changed

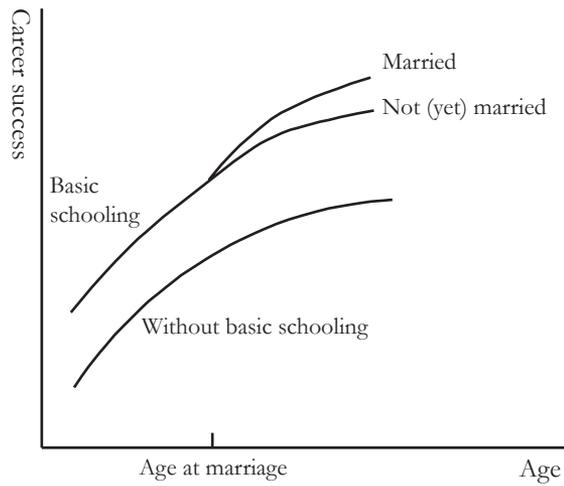
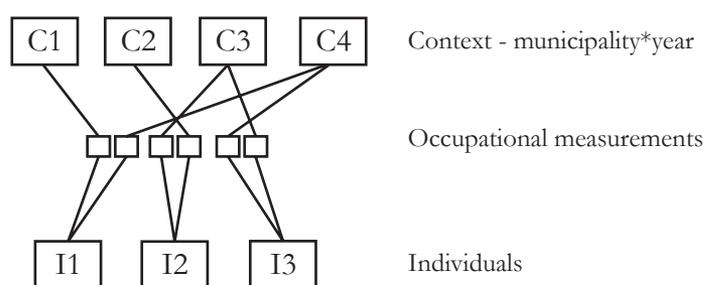


Figure 1.3 Effects of time-constant and time-varying characteristics on rate of growth of occupational status

We use cross-classified multilevel models also for analysing changes in hiring preferences among employers. The information on the place of work allows us to study the effect of regional modernization on recruitment based on ascribed characteristics. As with the individual career data, here too the data structure is complex because we distinguish three levels of analysis. We explain the use of ascribed requirements in terms of differences between contexts for which the job is advertised (Utrecht in 1880 or Amsterdam in 1900 for example), differences between occupations and differences between the advertisements themselves. The individual advertisements are nested both in occupations (HISCO codes (van Leeuwen, Maas and Miles 2002)) and in varying contexts. Not all advertisements for a given occupation are necessarily nested within the same ‘context’.



Individual 1: one occupation in Context 1, one in Context 4
 Individual 2: one occupation in Context 3, one in Context 2
 Individual 3: one occupation in Context 3, one in Context 4

Figure 1.4 Nesting structure of the data

1.6 Outline of the book

Table 1.1 provides an overview of the research questions, datasets and methods of analyses used in each empirical chapter. In chapter 2 we present the application of multilevel growth models for the study of occupational careers using historical demographic data. In chapter 3 we employ these models to test hypotheses developed from a resource and from a norms and societal expectation framework to explain individual differences in career success.

The effect of modernization processes on the career success of men as well as the interplay between individual characteristics and modernization processes is studied in chapter 4. Chapter 5 focuses on the careers of single women. As for men, hypotheses on the influence of individual and contextual characteristics are formulated and tested. In addition, I test hypotheses

on how the effects of individual characteristics varied according to variations in context. Chapter 6 zooms in on one of the mechanisms predicted to bring about changes in individual mobility, namely a shift from ascription- to achievement-based hiring preferences among employers. The final chapter summarizes the findings and discusses their implication for further research.

Table 1.1 Overview of the empirical chapters

Chapter	Trend question	Explanatory question	Research period	Sample sizes	Data	Analyses
3	To what extent did individuals in the Netherlands increasingly have more successful careers over time?	How can we explain individual differences in career success? Did the mechanisms that cause occupational success change over time?	1865-1940	Men (N=8291) Women (N=4611)	HSN	Multilevel Growth Models
4		Are men in modernized areas more likely to have successful careers? And does the influence of individual characteristics on career success vary according to regional and temporal differences in modernization?	1865-1928	Men (N=7043)	HSN Context indicators	Cross-Classified Multilevel Growth Models
5	Was there a trend towards greater career success among single women over the course of their career? Was there a trend towards greater career success among single women over historical time?	How can we explain individual differences in career success? Were women in modernized areas more likely to have successful careers? Did the influence of individual characteristics on the career success of single women vary according to regional and temporal differences in modernization?	1865-1928	Single women (N=1148)	HSN Context indicators	Cross-Classified Multilevel Growth Models
6	What ascribed and achieved characteristics were used by employers to recruit employees through job advertisements in the Netherlands between 1870 and 1939? Did employers in the Netherlands increasingly select on ascribed characteristics between 1870 and 1939?	Were employers seeking employees for more complex and higher-status occupations less likely to select on ascribed characteristics? Were employers in more modernized regions and periods less likely to select on ascribed characteristics?	1870-1939	Job advertisements (N=2194)	Job advertisements Context indicators	Cross-Classified Multilevel Models

2

Studying historical occupational careers with multilevel growth models

This chapter is co-authored with Ineke Maas. A slightly different version with analyses based on a smaller number of cases appeared in 2010 as “Studying historical occupational careers with multilevel growth models” in *Demographic Research* 23(24): 669-696.

2.1 Introduction

Recently there has been a renewed interest in the study of the historical career (see Mitch, Brown, and van Leeuwen 2004 for an overview). Economists, demographers and sociologists likewise have been motivated by recent developments in data collection, e.g., the digitalization of censuses and population registers, providing them with new but complex historical data on occupational careers. The new data enable the study of old as well as new research questions. Examples of questions which were raised include: whether careers become more successful over time, and whether the influence of individual characteristics such as schooling on individual careers varied over historical time (Mitch, Brown, and van Leeuwen 2004).

The new data not only present new possibilities, but also new challenges. They usually lack information on the exact timing of changes in occupational status and individuals differ with respect to the amount of information on occupational status that is available. This makes the most common method to study careers, i.e., event history modelling, less applicable.

The goal of this chapter is to propose and employ a new method for studying occupational careers using historical data. More specifically the method is appropriate for studying career success. By career we mean any kind of working life history, thus any succession of occupations of an individual. Successful careers are characterized by two dimensions. First, careers are more successful if they start at a higher level of occupational status. Second, the occupational status of individuals having successful careers increases faster over the life course.

To illustrate our method we will use the Historical Sample of the Netherlands (Data Set Life Courses Release 2010.01). These are excellent data to study occupational careers of individuals: the data comprise information on occupational careers of almost 13,000 men and women born between 1850 and 1922. At the same time these data show the two characteristics challenging common methods of studying careers. Individuals have at least one occupational measurement, at most twenty-seven, and on average three. The exact timing of a change in the occupational status is not known. Instead occupations are noted down at the time of vital events such as marriage and the birth of a child.

We propose to use growth models to study careers. The main idea behind these models is that occupational status increases with experience in the labour market. Moreover, the models allow studying the impact of time constant predictors (e.g., father's occupational status) and time varying predictors (e.g., marital status). Both types of predictors can influence the starting point of the career and the speed of growth.

The structure of this chapter is as follows. First, we provide a brief discussion of common issues of historical data which make more standard methods less applicable. Subsequently, we will propose our method to study careers with historical data. We then formulate some hypotheses. The data in use will be described and the hypotheses will be tested. We conclude with a discussion of the proposed method and an outlook for further research.

2.2 Historical data and growth models

The most common types of sources of historical data on occupational careers are continuous registers, kept by the church or by the state, and linked censuses, as well as sometimes a combination of multiple sources (Reher and Schofield 1993, van Leeuwen and Maas 2010). Using historical data to study occupational careers has clear advantages. They offer insights for the historian of careers as well as for the sociologist who studies long-term developments in stratification because they often cover a substantial period in people's lives and a long period of historical time. Moreover, the data include information on the occurrence of vital events, for instance the date of marriage and of the birth of children, which are often considered to be important independent variables. Nonetheless, historical data on careers have also at least two disadvantages.

The first disadvantage is that the exact start and end date of an occupation is not known. Continuous registers such as population registers provide information about an individual's occupation at a certain date (e.g., at the birth of a child, or at the move to another address), however when someone started to have a certain occupation is not known. Linked census data present the same challenge. However, since censuses are held regularly individual's occupations are measured on a more regular basis than in population registers.

Second, data based on continuous registers record occupations at the time of vital events, therefore individuals have differential numbers of occupational recordings, depending on the number of vital events. Moreover, depending on when in a person's life vital events occur occupations are registered at different ages.

Given these two drawbacks of historical data a widely used method in contemporary career research, i.e., event history modelling, in which the exact timing of career moves is studied, is not suitable (see Maas 2004 for a review of the use of event-history-analysis in career research).

To make use of the advantageous characteristics of historical career data we propose to use multilevel growth models (Hox 2002, Raudenbush and Bryk 2002). In multilevel growth models two levels are distinguished. The first is the individual level. At the second level several measurements per individual for an individual outcome variable are included. The scores of the individual on the outcome variable are assumed to change over time. In the case of career research this outcome often is occupational status.

The change over time is modelled with a so-called growth curve (Figure 2.1). Each individual can have his or her own 'growth' of status over time. Growth curves can differ with respect to their starting point (i.e., a random intercept, compare Figure 2.2) or with respect to their growth (i.e., a random slope, compare Figure 2.3).

In growth models, differences between individuals can be modelled using time invariant

and time variant characteristics. Time invariant characteristics, such as occupational status of the father at a certain point in time or gender, may cause the growth curve to start on a higher or lower level and/or to grow at a different speed. The same is true for time variant characteristics, such as marital status. However, time variant characteristics do not cause the growth curve to start at a higher level, but they cause it to jump to a higher (or lower) level at the point in time where this characteristic changes. From that time point onwards, they may also change the speed of growth (Figure 2.4).

Although there is to our knowledge no application of growth modelling in career research, growth models are widely used in psychology, educational sciences and economics. These models are for instance used to study growth in learning, e.g., intelligence growth or free recall of pupils over a period of time (Sagiv 1979).

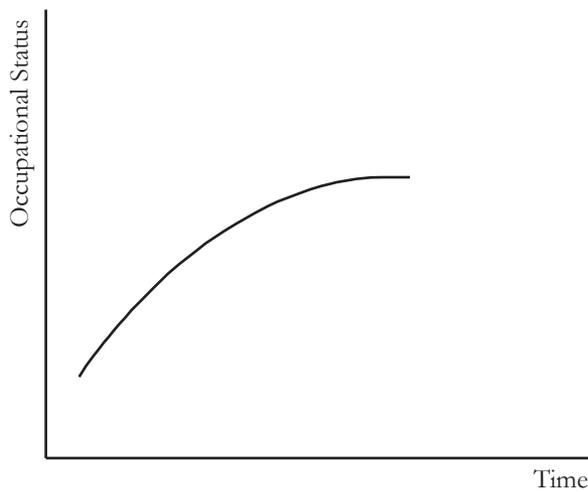


Figure 2.1 Example of a growth curve of occupational status over time

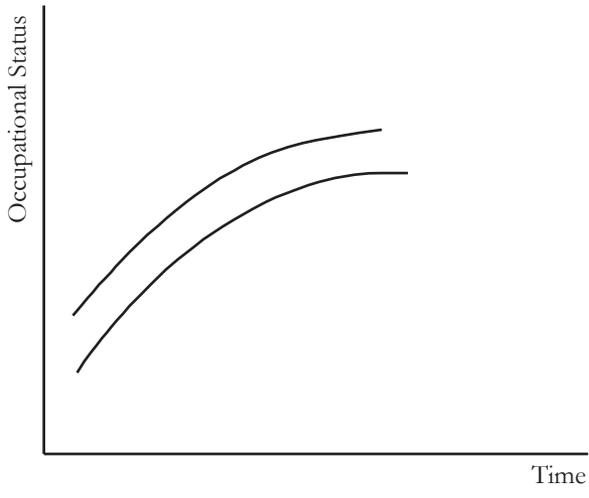


Figure 2.2 Example of two growth curves with different starting points (i.e., intercept)

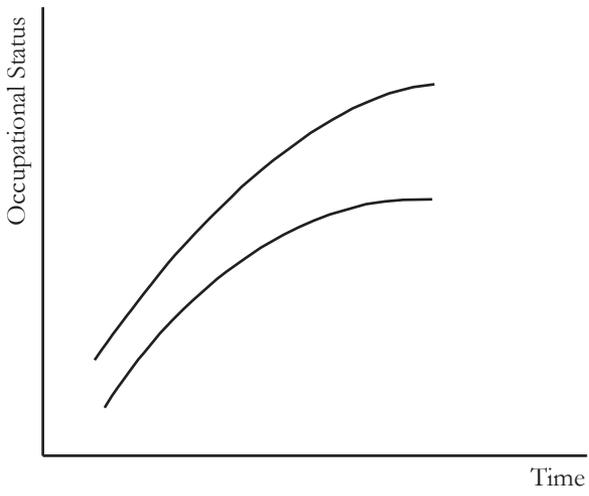


Figure 2.3 Example of two growth curves with different speed of growth (i.e., slopes)

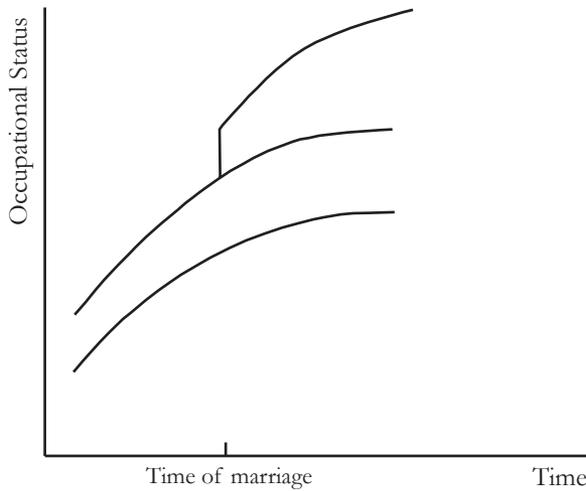


Figure 2.4 Example of the effect of a time varying characteristic, i.e., marriage, on both the level of the growth curve and the speed of growth

Another example is the longitudinal assessment of growth in teacher’s effectiveness in different school classes. Multilevel growth models have been used to study the evaluation of almost 200 teachers over 13 years in around 6,000 classes (Marsh 2007). Moreover, in economic research multilevel growth models have been used to model income growth over a life course (Pavan 2006).

2.3 By way of example – hypotheses on the effects of experience, father’s occupational status and marital status on career success

The most basic approach which relates individual characteristics to career success is formulated in the human capital theory. Human capital refers to formal as well as informal education and to work experience, general or specific with regard to one’s occupation (Mincer and Polachek 1974). It has been argued that those with more human capital are more likely to get ahead (Becker 1975). Over a life course individuals gain experience specifically with regard to their tasks or in general with regard to their occupation. Work experience makes employees more productive and signals to the employer that lower training costs are needed in comparison to a worker with less experience. Experienced workers are more likely to be successful, i.e., to move to an occupation with a higher status, and they are also the last people to be fired because they are the most valuable to an employer (Mincer and Polachek 1974). Because the additional experiences an employee can gain are finite, we expect that the growth of status slows down

with increasing age. This expected relation between experience and occupational status lies at the heart of the growth model because it describes the basic pattern of growth of status over the life course (compare Figure 2.1).

H1: Occupational status increases with experience, but to a lesser extent at older ages.

Second, how successful a career starts is, for example, affected by time constant characteristics, e.g., father's occupational status.² Especially in pre-industrial and industrializing societies the occupational status of the father is considered to be one of the most important resources (Kerr *et al.* 1960, Blau and Duncan 1967, Kaelbe 1985, Ganzeboom, Treiman and Ultee 1991, Maas and van Leeuwen 2002, Zijdemans 2008). Fathers with a higher occupational status could help their children to attain occupational training or some education in order to enter their occupational career at a high level. If children followed their parent's occupation the parents could provide training to the children, and the children might inherit a family run shop, company, farm, or financial capital (Treiman 1970). By influencing the starting position of the child parents provided a base for future success (Shavit and Blossfeld 1993, Kerckhoff 1995).

H2: The higher the occupational status of the parents, the higher the occupational status at which the children start their career.

We expect that parents not only gave their children an initial advantage in the labour market, but also influenced the pace at which their careers progressed. During the occupational career parents could influence the success of their children by providing work related advice, e.g., information concerning certain occupations or job opportunities, or introducing children to their work related contacts. Therefore, we expect that the speed with which careers of children from high status parents advanced was faster compared to careers of children from lower status parents.

H3: The higher the occupational status of parents, the faster the speed at which the occupational status of their children grows.

While the influence of father's status on children's occupational status is rather well supported by empirical research (see Ganzeboom, Treiman, and Ultee 1991 for a review) there is no conclusive evidence on how this relation changed over time, i.e., in the time before the Second

² Although not invariant in the strict sense of the word, father's occupational status is often treated as invariant because of a lack of dynamic information, and because at the marriage of their children, fathers have often reached a stage in their occupational career where changes in status are less common.

World War (e.g., Kaelble 1985). Some advocate that the influence of the father remained the same in industrializing societies (Erikson and Goldthorpe 1992); others argue that there is a steady decline of the effect of father's status on that of his children (Ganzeboom, Luijkx, and Treiman 1989).

According to theory, however, the influence of the father on his children's social background became less important in the course of industrialization. The logic of industrialism thesis (Kerr *et al.* 1960, Treiman 1970) states that modernization processes (e.g., mechanization of work, urbanization) led to an increase in the gross intergenerational mobility by influencing the determinants of occupational mobility. A number of related mechanisms have been proposed which restricted parents in their possibilities to have a direct influence on the occupational decisions of their offspring (see Treiman 1970). First, due to modernization and industrialization processes a diversification of jobs and occupations took place. As a consequence, the skills of the parents were often no longer useful for their children. Second, in the course of industrialization employers are assumed to be forced to choose their employees increasingly on the basis of their merits, rather than on the basis of their social background (Kerr *et al.* 1960, Blau and Duncan 1967). The occupational structure became more diversified, new occupations emerged, and in order to get the best skilled and qualified workers, employers had to focus more on an individual's achievement rather than on an individual's social background (Blau and Duncan 1967:430). Third, due to the specialization of labour, a greater number of jobs required specialized and longer training which families could not provide. In sum, we expect that the occupational status of fathers became less important for the success of the career of the children over time.

H4: Over time the occupational status of parents is having a smaller influence on the starting level of the occupational status of their children.

Note that we study over time changes only for the influence of parent's status on the starting point of the career of children. For now we do not consider any over time changes of the effect of parent's status on the speed of growth of occupational status.

Next to time constant characteristics like social background also time varying characteristics influence individual's careers. As an example for a time varying predictor we study the effect of being married on occupational status. We come to different expectations for being married for the careers of men and women.

According to the male breadwinner model an increase in occupational success is to be expected for men after marriage, for two reasons. First, once men get married and have children they have a greater responsibility and society expects them to function as the (often only) family provider. Due to the increased responsibility men are assumed to invest more time and effort in their work and therefore become more productive (Horrell and Humphries 1995, Lewis 2001, Kalmijn and Luijkx 2005).

Second, employers are expected to positively discriminate in favour of married men: married men are favoured by employers since they are believed to be more committed to their jobs. Employers are also less prone to fire married men as this is considered less fair than firing men with fewer responsibilities. On the grounds of these ideas married men can be expected to have more successful careers than nonmarried men (Korenman and Neumark 1991).

The housewife role model predicts that for women, marriage had the opposite effect. In Dutch society around the end of the nineteenth century it was highly respectable for women to focus only on the household and childrearing. However, because lower class families could not afford to follow this example, women from these classes did not drop out of the labour market entirely. Instead, they concentrated their activities in cottage industries, family farm labour, serving and personal services. Thus, married women often worked in areas in which informal, less organized, and less successful careers took place (Leydesdorff 1977, van Poppel, van Dalen and Walhout 2009).

Besides self-selection into less successful careers, women also faced considerable restrictions implemented by employers, e.g., to ascend certain job ladders. They were more often assigned to dead-end positions (Goldin 1994) or so called “marriage-bars” kept women from being employed once they got married (Thurow 1975, Leydesdorff 1977). Though in the late nineteenth and early twentieth centuries the Netherlands had no overall national legislation that prohibited the labour market participation of married women, discriminative behaviour by employers probably constrained women’s career attainment. In 1904, marriage bars were introduced in the postal and telegraph service. In 1924 a provision was enacted entitling municipalities to dismiss female teachers who got married; in 1934 an official marriage bar was introduced in the teaching sector. The discouraging tone of the public debate probably also influenced the career success of women in other sectors (Pott-Buter 1993).

H5a: After men married their occupational status is higher than before marriage.

H5b: After women married their occupational status is lower than before marriage.

Hypothesis 5a assumes that at marriage the occupational status of men jumps to a higher level, and subsequently develops parallel to the careers of (still) unmarried men. This seems to be an unrealistic assumption. Societal expectations towards married people probably not only influence the career at the time of marriage but also every further occupational decision that is to be taken. For instance, the motivating effect of the responsibility as a family breadwinner will hold also for the time after marriage. We therefore expect that men who are married will not only progress in their career at a higher level, but that their career will also grow faster (compare figure 2.4). Likewise, women who are expected to get married or have gotten married will face societal expectations or discrimination also later in their occupational career. Thus, we also expect the

impeding effect of being married for female occupational status to affect every occupational decision after marriage, i.e., to decrease the speed at which their status grows.

H6a: For men after marriage the speed at which the occupational status grows is faster than before marriage.

H6b: For women after marriage the speed at which the occupational status grows is slower than before marriage.

The influence of marital status on occupational success is, like the effect of father's occupational status, assumed to change over time. Often a three-stage historical development of the economic integration of women is assumed. In pre-modern societies an extensive integration of female labour into the household economy is assumed, in industrial societies it came to a wide exclusion of women from official work and during the later stages of modernization women were re-integrated into paid work (for a discussion and critique of this model see: Pfau-Effinger 2004). The Netherlands to some extent present a special case as already before the transition to industrialization the male bread winner model and the accompanying female housewife model were important family models (Pfau-Effinger 2004:385). Until the 1950s these models became even more deeply rooted in Dutch society. As shown by van Poppel, van Dalen and Walhout (2009) for example, from the 1820s onwards increasingly fewer Dutch women registered their occupations in official documents such as marriage certificates.

We therefore expect:

H7a: Over time men increasingly had a higher occupational status after marriage than before marriage.

H7b: Over time women increasingly had a lower occupational status after marriage than before marriage.

Note that we study over time changes only concerning the influence of getting married on the status level of the occupational career. We do not consider any over time changes of the effect of being married on the speed of growth.

2.4 Data, variables and method

2.4.1 Data and context

The Historical Sample of the Netherlands (HSN) provides us with information on occupational careers of individuals who lived in the nineteenth and twentieth centuries. The HSN is an excellent database to study careers of men and women in different regions, and over time. The HSN starts from a sample of birth registers from the period 1812-1922 and aims at eventually including the life courses of 78,000 individuals. The main data sources for individual life histories

are birth certificates, death certificates, marriage certificates, and the population registers, which were introduced to obtain a continuous registration of the composition of households and the place of residence of each individual in the Netherlands. Every time a vital event occurred (e.g., marriage, birth of a child, move to another municipality) information on the individual, including the occupation, and if applicable of his/her family was recorded and updated respectively. That means that the amount of occupational information we have about an individual is dependent on the number of vital events such as moving and birth of a child, and not on the occupational career itself (e.g., number of different occupations).

The collection of the data is still underway, therefore we will use a subsample of the data (Data Set Life Courses Release 2010.01) which consists of life courses of individuals born between 1850 and 1922. In comparison to other European countries the Netherlands underwent the processes of industrialization late, i.e., during the late nineteenth and early twentieth centuries. The time period the data stem from - from 1865 onwards - is therefore especially interesting because it was characterized by a rapid transformation of the labour market. New modes of production led to the development of large production units (van Zanden and van Riel 2000) and an increasing number of new occupations (van Leeuwen and Maas 2007). Likewise agricultural production underwent mechanization processes.

The data comprise information on the respondents' date of birth, marital status, literacy, father's occupation, all migrations, as well as occupations of the respondents. Because we aim at studying occupational careers we restricted the sample to the ages in which most people belonged to the working population, i.e., people who are at least 15 years old without any maximum age. We study the period 1865-1940. In 1940 a change in the population registers made them less useful for studying occupational careers. With the introduction of the personal family card (*persoonsgezinskaart*) in 1940 the date of registration of occupational information is no longer known. Most of the birth cohorts in our study more or less finished their active occupational life by 1940. Complete information, i.e., information on at least one occupation and information on all independent variables is available for 23,303 occupations of 8,291 men and 9,982 occupations of 4,611 women.

Figure 2.5 presents the number of occupational measurements per 5-year age group for men and women. For both men and women, most measurements occurred around the age of marriage. In the case of men, the decrease in the number of occupational measurements begins at the age of 30 years, yet there are at least 800 measurements per age group until the age of 45. For women the amount of occupational information decreases steeply after the age of 25. Whereas for age group 26 to 30 there are still more than 1,100 occupational measurements, in the following group (aged 31 to 35) the number reduces to around 500. In the discussion that follows, we will come back to this when interpreting our results.

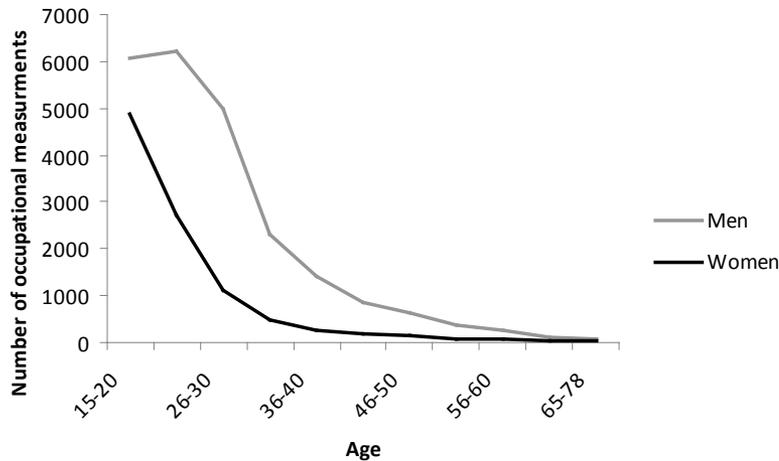


Figure 2.5 Number of occupational measurements for men and women per age group

Some critics of this type of data argue that the information on occupations of women is less complete than that on occupations of men, because the head of the household would not always provide information about the occupations of the female household members. This may indeed be the case, but it is difficult to verify, since the lack of information on occupations of women may also indicate their lower labour force participation. Furthermore, the less extensive information on the careers of women may be a result of the fact that men, and not women, registered new born children with the municipality. In any case, information on female occupational careers is not in general lacking in the data. In the HSN there is extensive information on the careers of a large number of women, especially before marriage.

Studies of social mobility in preindustrial or industrializing societies are also challenged when the society is dominated by one very large occupational group, usually farmers. For the period and sample under study this problem does not occur. During this period in the Netherlands the agricultural sector had the highest decrease in terms of employment rates (van Zanden and van Riel 2000:352). As a consequence only 15% of all occupational observations in the sample are farming occupations. Furthermore, the farming occupations are divided across 35 different occupations within the farming sector and these occupations in turn have different positions on the status scale that we use. For instance individuals who owned a farm have a status of 60.9, whereas farm labourers have a status of 32.1. There are a number of other occupations such as workers in a tree nursery (58.0), pastorals (48.4) and milkers (42.9).

2.4.2 Dependent variable

Occupational Status: Assigning social positions to individuals is a difficult task in itself. Doing so over two centuries and across different regions (national or international) is even more so. Differing occupational terminology hindered international and over time comparisons of occupational status for a long time (van Leeuwen, Maas, and Miles 2004). Such comparisons became possible after the development of the Historical International Standard Classification of Occupations (HISCO) (van Leeuwen, Maas, and Miles 2004), based on the International Standard Classification of Occupations 1968 of the International Labour Office (ISCO68 1969). All occupational information we use has been classified in HISCO. This enables the use of the recently developed historical status scale HISCAM, which assigns status to all HISCO categories (Lambert *et al.* 2013). For the development of the HISCAM scale the same scale estimation techniques were used as for the contemporary versions; the so-called CAMSIS scales (Cambridge Social Interaction and Stratification) (Prandy 2000). These scales are built on the assumption that patterns of social interaction between people from different occupational strata are representative of the overall occupational stratification structure (Prandy and Lambert 2003, Bottero 2005). This means that the main general determinant of patterns of social interaction between people with certain occupations is the hierarchical position of these occupations in society (factory workers are not likely to interact with lawyers). In the case of HISCAM information on intergenerational mobility from 1.5 million marriage records from six different countries (Britain, Canada, France, Germany, the Netherlands, and Sweden) covering the period 1800-1938 was used to estimate the social distances between occupations.³ If intergenerational mobility between two occupations was relatively common, the estimated distance between these occupations on the HISCAM scale is small. If mobility is rare, the estimated distance is large. The main – hierarchical – dimension behind the estimated distances between all pairs of occupations, was transformed into a scale ranging from 1 to 99, where a higher value indicates a higher occupational status. A servant for example has a HISCAM-score of 10.6, a lawyer a score of 99.0 and a tailor takes a middle position with a score of 49.7.

2.4.3 Independent variables

Experience: Occupational experience will be indicated by the age of the respondent. We study the occupational career from the age of 15 onwards, thus 15 was subtracted from the age of the respondent. Moreover, age was divided by ten. Every time information has been updated in the original sources (e.g., marriage or move to another address) also the age of the respondent has been noted. A quadratic term of age was added to the analyses in order to test the hypothesis

³ Using Goodman's scaled association models (Goodman 1979).

that the effect of experience declines over the occupational career. Note that age is a better indicator for men's occupational experience than for women's, as female careers are more likely to be interrupted by giving birth and taking care of children.

Father's occupational status: Like respondent's occupation also the occupations of the fathers have been coded into HISCO and then given a HISCAM-score. If more than one occupation of the father is known the occupational information about the father which is closest to the respondent's birth was chosen.

Married: The HSN data include information on who married when. Being married is treated as a time variant characteristic. To all points in time before marriage at which an occupation is observed the value 0 was assigned, and to all points in time after marriage a 1.

Year/10: The variable year measures the number of years since 1865 and was divided by 10.

2.4.4 Control variables

Year of marriage: One of the typical events when occupational information is updated in the vital registers is when individuals get married. Critics argue that occupational measurements at marriage fluctuate upwards because marriage is a key social event in an individual's life at which people like to make a good impression. To control for this we created a variable that is 1 for all occupational information from the year in which an individual got married and 0 otherwise.

Incomplete: Not all of the life courses included in the HSN are complete yet. To control for possible biases of incomplete life courses we include this information in the analyses. The variable incomplete indicates whether part of the register information is still missing (1) or whether all information is complete (0). Incomplete life courses do not necessarily mean that occupational information is missing. It could also be a missing death certificate which makes the information not (yet) complete.

Descriptive information on all variables is provided in Tables 2.1 and 2.2.

Table 2.1 Descriptives of time invariant and time varying variables, male respondents

Time invariant variables (N=8291)	Min	Max	Mean/%	S.d.
Father's occupational status (HISCAM)	10.60	99.00	46.94	11.88
Time varying variables (N=23303)				
Occupational status (HISCAM)	10.60	99.00	49.74	14.10
Experience/10	0.00	6.30	1.20	0.99
(Experience/10) ²	0.00	39.69	2.41	3.96
Married	0	1	23.00	
Year/10	0.00	7.50	4.70	1.50
Control variables				
Incomplete	0	1	33.00	
Year of marriage	0	1	20.00	

Note: Experience starts to count at age 15, year starts to count at 1865.

Table 2.2 Descriptives of time invariant and time varying variables, female respondents⁴

Time invariant variables (N=4611)	Min	Max	Mean/%	S.d.
Father's occupational status (HISCAM)	10.60	99.00	47.00	12.20
Time varying variables (N=9982)				
Occupational status (HISCAM)	10.60	99.00	26.14	22.11
Experience/10	0.00	6.20	0.80	0.84
(Experience/10) ²	0.00	38.44	1.33	3.13
Married ¹	0	1	4.50	
Year/10	0.00	7.50	4.38	1.63
Control variables				
Incomplete	0	1	37.00	
Year of marriage	0	1	5.00	

Note: Experience starts to count at age 15, year starts to count at 1865.

⁴ The variable married is coded 1 for occupational measurements in the years after a woman got married. Because many women dropped out of the labour market after marriage the number of occupational measurements of married women (4.5) is lower than the number of occupational measurements in the year of marriage.

2.4.5 Models

The following sequence of models is estimated both for men and women. The null model informs about the variation in occupational status between individuals and within individuals. The first model tests the basic idea of growing career success by experience. It includes the predictors for work experience, work experience squared and year of measurement.

The second model additionally includes the time constant characteristic father's occupational status. Interactions of father's occupational status with experience and year are added in model 3.

In model 4 the time varying variable being married is included. The fifth and last model includes the interaction of being married with experience and with year. We thus test whether marital status changes the speed at which career success grows over an individual's life course and whether the effect of marriage on the level of occupational status changes over historical time.

In all models an indication of whether the source information for an individual is complete is included. Models 4 and 5 which include the main effects of being married also include the control variable indicating whether information was recorded in the year of marriage.

2.5 Descriptive results

The three careers shown in figure 2.6 exemplify how diverse the careers recorded in the HSN database are. The careers differ in length of the observation period, number of observations, as well as complexity. The careers shown in figure 2.6 range from a career which starts and continues without any change in occupational status in the lower part of the status scale ("worker") to a career which clearly shows upward mobility ("teacher"). The teacher has a successful career as he started as a school teacher and his last occupation is head of a school. The worker on the contrary remains in the same occupation during the period of his life that we observe. The career of the "gardener" displays most fluctuation in occupational status: he starts as a coachman, becomes a servant and works again as coachman. After a period in which he worked as a gardener, he finishes his career as a tree grower and finally as a tree grower assistant.

Tables 2.3 and 2.4 present characteristics of career trajectories of men and women by marital status. Men who ever married have on average longer observation periods, namely 11 years in comparison to 7 years for men who never married, but the variance in both groups is very large. Never and ever married men also differ in the average number of occupational measurements, respectively 2.4 and 3, which is probably due the fact that the first group lacks information at marriage. The mean age at first occupational measurement for men who get married is slightly higher, 21.2 as compared to men who never get married, namely 20.4.



Figure 2.6 Three careers from the HSN data; time points of measurement of occupational status are indicated by dots

The length of occupational trajectories of women is on average 4.5 years long and thus much shorter than those of men. Many women were probably only observed at their marriages. Never married women have somewhat longer careers than women who marry (6 years compared to 4 years). The mean number of occupational measurements is lower as compared to that of men, for both ever and never married women it lies around 2. The mean age at the first occupational measurement is similar for men and women, but the last occupation we observe for women is at a much younger age, on average around age 24, although we do observe some occupations for women at age 77. This means two things for the analyses. The first consequence is that our estimation of the growth of the careers of women is much better for the first half of their career than for the second half, because there are much fewer observations that pertain to this second half. Secondly, since especially married women left the labour market the estimation of the second half of women's careers is based on a selective group of mainly never married women. We return to this issue in the discussion.

Table 2.3 Some descriptive characteristics of the occupational careers of men in the HSN-data by marital status

Individual characteristic	N	Minimum length in years	Maximum length in years	Mean length in years	S.d. length in years	Mean # occupations	Mean age at first occupation	Mean age at last occupation
All male respondents	8291	0	60	9.74	10.55	2.81	21.00	30.75
Married	6046	0	60	10.71	10.62	2.98	21.22	31.93
Never married	2245	0	53	7.14	9.92	2.37	20.44	27.58

Table 2.4 Some descriptive characteristics of the occupational careers of women in the HSN-data by marital status

Individual characteristic	N	Minimum length in years	Maximum length in years	Mean length in years	S.d. length in years	Mean # occupations	Mean age at first occupation	Mean age at last occupation
All female respondents	4611	0	58	4.42	7.32	2.16	19.78	24.20
Married	3154	0	58	3.81	6.21	2.14	19.42	23.22
Never married	1457	0	53	5.74	9.13	2.21	20.58	26.33

2.6 Test of the hypotheses

First the models for male respondents will be discussed, followed by a discussion of the models for women. The first model on men, presented in table 2.5 and 2.6, is the null model (model 0). This model indicates how much variation in occupational status is found between individuals and how much within an individual's career, i.e., between the different measurements of occupational status of a given individual. There is more variation in occupational status between men than within men's careers: 75% ($149.786 / (149.786 + 50.793)$) of the variance in occupational status is between men.

Model 1 includes experience, experience squared, as well as year divided by 10. Hypothesis 1 expects the occupational status of men to increase with experience and to level off towards the end of the working life. The positive effects of experience and the negative effect of experience squared support this expectation. The estimated top of the occupational career of men is reached at age 35 [$(1.435/0.726)*10+15$].⁵ The estimated top of the career remains at about age 35 in all models. Over historical time the overall status of men increases. With every additional 10 years the occupational status of men increases by around one and a half points (1.576).

In model 2 we test hypothesis 2 on the effect of father's occupational status on the starting point of the career of his son. As expected does father's status increase the status of the son at his career start. The effect is rather strong, for every additional status point of the father the status of the son increases by around half a point (0.512).

Our expectation of the positive effect of marital status on the level of status (hypotheses 5a) is not supported (model 4). Note that in the same model the artificially higher occupational status of measurements in the year of marriage is taken into account. The size of this effect is around 0.396 status points.

In model 3 the interactions of experience and year with father's occupational status are added. Men with a higher status father have a faster increase in their career, but the size of the effect is very small. With every additional status point of the father men increase 0.016 points faster in status per 10 years.

The effect of father's status on the starting level of occupational status of men decreases over time. Both hypothesis 3 which expects that men with a higher status father had a faster increase in status over the life course as well as hypothesis 4 on the decrease of the effect of father's status over time are supported.

Getting married changes the speed at which occupational status grows over the life course of men (model 5). The effect of being married at the beginning of the career is negative

⁵ The peak of status in occupational careers is defined as the age at which the slope of the curve is zero. This is calculated as follows: $(1.435/0.726)*10+15$, in which 1.435 is the main effect of age divided by 10, 0.726 is the effect of age divided by 10 multiplied by 2, 15 is added because the careers start at the age of 15.

Table 2.5 Multilevel analyses of the occupational status of men (N=8,291)

	Model 0	Model 1	Model 2
	S.E.	S.E.	S.E.
Fixed part			
Constant	50.162 **	41.296 **	18.451 **
Experience/10	0.145	0.421	0.611
Experience/10 ²		1.435 **	1.707 **
Father's status		-0.363 **	-0.368 **
After marriage (1/0)		0.037	0.036
Incomplete			0.512 **
Year of marriage		1.160 **	0.425
Year/10		1.576 **	1.322 **
Speed of growth			
Experience/10*father's occupational status			0.080
Experience/10*married			
Over time			
Year/10*father's occupational status			
Year/10*married10			
Random part			
Between individuals	149.786	146.660	109.804
Within individuals	50.793	48.447	48.491
-2 log-likelihood	174771.889	173863.484	171873.190

*p<.05; **p<.01; (two-tailed tests)

Note: Experience starts to count at age 15, year starts to count at 1865, and the variables in the interaction terms are mean-centered, except for the variable experience/10.

Table 2.6 Multilevel analyses of the occupational status of men (N=8,291)

	Model 3	S.E.	Model 4	S.E.	Model 5	S.E.
Fixed part						
Constant	48.535 **	0.187	48.486 **	0.188	48.487 **	0.188
Experience/10	1.706 **	0.163	1.601 **	0.192	1.734 **	0.198
Experience/10 ²	-0.380 **	0.036	-0.350 **	0.040	-0.440 **	0.051
Father's status	0.677 **	0.028	0.505 **	0.013	0.504 **	0.013
After marriage (1/0)			-0.019	0.212	-1.010 *	0.398
Incomplete	0.426	0.280	0.460	0.281	0.461	0.281
Year of marriage			0.396 *	0.170	0.391 *	0.170
Year/10	2.045 **	0.172	1.334 **	0.080	1.341 **	0.082
Speed of growth						
Experience/10*father's occupational status	0.016 *	0.008	0.015	0.008	0.016 *	0.007
Experience/10*married					0.577 *	0.196
Over time						
Year/10*father's occupational status	-0.045 **	0.006	-0.045 **	0.006	-0.045 **	0.006
Year/10*married10					-0.079	0.108
Random part						
Between individuals	109.620		109.578		109.423	
Within individuals	48.345		48.334		48.343	
-2 log-likelihood	171826.778		171821.956		171817.439	

*p<.05; **p<.01; (two-tailed tests)

Note: Experience starts to count at age 15, year starts to count at 1865, and the variables in the interaction terms are mean-centered, except for the variable experience/10.

(-1.010), however this effect refers to men aged 15, when men are not yet married. The positive interaction term of being married with experience indicates that the negative start effect of being married vanishes over the course of the career and turns into a positive effect around age 35. Therewith hypothesis 6a is supported. The effect of being married on the status at the start of the career does not vary over time, therewith hypothesis 7b is not supported.

All models include the variable *incomplete* which indicates whether the life courses of men are complete. Men with incomplete register information have on average a 0.4 points higher occupational status. Additional analyses (not shown in the table), however show that the effects of the other variables do not change when taking into account the completeness of the life course information.

The variation between individuals is reduced from 149 (in model 0) to around 109 (in model 2 to 5). The variation within individuals declines from around 50 (model 0) to 48 (model 2 to 5).

The same sequence of models was estimated for women (see table 2.7 and 2.8). The first model is the null model (model 0). Similar to men, there is more variation in occupational status between women than within female careers: 79% of the variance in occupational status is between women.

For women the expected increase of occupational status with increasing experience is found but the levelling off at later ages is not found (see model 1). With every 10 years of age there is an increase in occupational status by 4 points. The insignificant effect of age squared indicates that there is no point in women's careers at which their increase in status levels off. The careers of women do not reach a top but continue growing at older ages. The occupational status of women did change significantly over historical time, with every additional 10 years the occupational status of women increases by almost two and a half points (2.487).

In model 2 father's occupational status is added. With every additional status point of the father the occupational status of the daughter at the start of her career increases by around half a point (0.583).

Model 3 additionally includes interactions of experience and year with father's occupational status. Against our expectations, the higher the occupational status of the father, the slower the growth of status over the life course of their daughters. The effect of the interaction term is -0.114. This means that for each status point of the father the growth in status of the daughter over 10 years is 0.114 smaller. Daughters of higher status fathers started their career on a higher level (0.677 points higher for each status point of the father). According to the model, after 59 years this head start has disappeared [$0.677/0.114*10=59$]. Also contrary to our expectations with historical time the effect of father's status on the starting level of the daughter's occupational career increases by 0.054 per ten years. These findings do not lend support to hypotheses 3 and 4.

Model 4 includes marital status. Contrary to our expectations women who are married have an occupational status that is 11.735 points higher than that of women who are not (yet) married. The interaction of marital status with experience (model 5) is significant and negative. Women who get married start their career on a considerably higher status (15 status points) but their increase in status is slower as compared to women who do not marry. According to the model, after 89 years this head start has disappeared [$15.332/1.710 \times 10 = 89$]. Because 89 lies outside of the range of the data, this finding suggests that the negative effect of getting married on the speed at which status grows over the life course is substantially negligible. The effect of marrying on occupational status does not change over historical time.

All models include the information whether the life courses are complete. In models 2 to 5 there is a significant difference in occupational status between women with complete and incomplete information. The status of women with incomplete life courses is around 1.3 status points lower as compared to women with complete life courses. Further, there is a significant effect of the second control variable which indicates that the occupational information stems from the year in which women got married. Occupational measurements registered at marriage are on average of 3 status points higher status.

The unexplained variation between individuals reduces gradually from almost 390 in model 0 gradually to around 295 in models 1 to 5. The variation within individuals reduces from 110 in the null model to 95 in models 1 to 5.

Table 2.7 Multilevel analyses of the occupational status of women (N=4,611)

	Model 0	S.E.	Model 1	S.E.	Model 2	S.E.
Fixed part						
Constant	27.377	** 0.315	13.661	** 0.851	-11.678	** 1.280
Experience/10			4.050	** 0.446	3.975	** 0.437
Experience/10 ²			-0.115	0.110	-0.031	0.110
Father's status					0.583	** 0.023
After marriage (1/0)						
Incomplete			-0.841	0.632	-1.320	* 0.593
Year of marriage						
Year/10			2.487	** 0.182	2.054	** 0.172
Speed of growth						
Experience/10*father's occupational status						
Experience/10*married						
Over time						
Year/10*father's occupational status						
Year/10*married10						
Random part						
Between individuals	387.786		346.992		297.800	
Within individuals	110.316		99.805		99.643	
-2 log-likelihood	84473.515		83431.770		82838.193	

*p<.05; **p<.01; (two-tailed tests). Note: Experience starts to count at age 15, year starts to count at 1865, and the variables in the interaction terms are mean-centered, except for the variable experience/10.

Table 2.8 Multilevel analyses of the occupational status of women (N=4,611)

	Model 3	S.E.	Model 4	S.E.	Model 5	S.E.
Fixed part						
Constant	24.964 **	0.403	25.150 **	0.402	22.219 **	0.402
Experience/10	4.147 **	0.438	2.791 **	0.450	2.438 **	0.463
Experience/10 ²	-0.051	0.109	-0.018	0.110	0.157	0.124
Father's status	0.677 **	0.028	0.674 **	0.027	0.675 **	0.027
After marriage (1/0)			11.735 **	0.864	15.332 **	1.689
Incomplete	-1.339 *	0.592	-1.294 *	0.590	-1.282 *	0.589
Year of marriage			3.285 **	0.645	3.312 **	0.645
Year/10	2.045 **	0.172	2.045 **	0.171	2.065 **	0.172
Speed of growth						
Experience/10*father's occupational status	-0.114 **	0.019	-0.100 **	0.186	-0.101 **	0.018
Experience/10*married					-1.710 *	0.721
Over time						
Year/10*father's occupational status	0.054 **	0.014	0.053 **	0.014	0.052 **	0.014
Year/10*married10					-0.762	0.565
Random part						
Between individuals	296.876		295.466		295.047	
Within individuals	99.262		95.569		95.513	
-2 log-likelihood	82813.990		82621.761		82609.140	

*p<.05; **p<.01; (two-tailed tests). Note: Experience starts to count at age 15, year starts to count at 1865, and the variables in the interaction terms are mean-centered, except for the variable experience/10.

2.7 Discussion and conclusion

In this chapter we proposed a method to study career success with historical occupational data. Common issues of historical data, i.e., the unknown exact timing of changes in the occupational status, make standard methods to study careers, such as event history modelling, less applicable. At the same time, historical data often comprise significant time spans of an individual's life as well as historical time that makes them well suited for the study of careers.

We proposed to use multilevel growth modelling. The multilevel growth models overcome the problems of historical data and take advantage of their richness. The basic assumption of the proposed models is that occupational status changes ('grows') over the life course. Careers are assumed to start at a higher or lower level depending on the effects of time constant characteristics (e.g., father's occupational status) or to jump to a higher level when a change in a time varying characteristic occurs (e.g., marital status). Moreover, the models enable studying whether the growth in occupational status increases its speed due to time constant or time varying characteristics. In this way, the models nicely correspond to common sense ideas about career success, i.e., successful careers are careers which start at a higher level of occupational status and/or grow in status faster.

We used the Historical Sample of the Netherlands to test some example hypotheses derived from sociological and economic literature on status attainment. The basic idea from human capital theory that occupational status increases over the life course but to a lesser extent at older ages was confirmed for men. However, on average, men reached their maximum occupational status already in their thirties, which is unexpectedly early. One possible explanation could be that physical strength was an important determinant of occupational success in the period under study and therefore with decreasing strength career success would decrease likewise. Men whose father had a higher occupational status – our example of a time constant predictor – started their occupational career on a higher level. Marrying – a time varying predictor – did not yield the expected result for men's career, we found no positive effect of being married.

In line with our expectations the speed of growth of occupational status increased faster for men with a higher status father. We found no overall positive effect for being married for men's status growth. Men who marry at younger ages start with a lower status and this effect vanished over the course of their career. Regarding the effects of changes over historical time we found that the effect of father's occupational status decreased over time, whereas the effect of being married did not change over time.

Female careers showed the expected pattern of increasing occupational status over the life course without levelling off at older ages. Daughters from high status fathers started their career in occupations with higher occupational status, over time the positive effect of father's status increased. However, contrary to what we expected the careers of these women developed

slower than those of daughters from lower status fathers. Also against our expectations we found a positive effect of being married on women's occupational status. The speed at which the status of married women grew over the life course hardly differs in comparison to those who are not married. Moreover, the effect of being married did not change over historical time.

Two assumptions of the growth models seem problematic when using them for the analysis of historical occupational careers. First, the models assume a regular change of status between two time points at which occupational status is measured. In fact though, we know that people's occupational status changes more abruptly (compare figure 6). However, we think that this is a minor problem. The inclusion of time varying characteristics in the models takes care of jumps in occupational status. Furthermore, models always to some extent summarize complex reality.

The second problem is more severe. Our approach produces counterintuitive results for female careers. For example, whereas we expected women's careers to become less successful after marriage, we found that marriage raised women's occupational status. The cause of these counterintuitive results lays in the assumption of growth models that during the periods that women are not observed they behave in the same way as those women, with similar characteristics, who are observed. In reality, though, many women were not observed because they dropped out of the labour market at or after marriage. Women who remained active in the official labour market were a selective group both on measured and unmeasured characteristics. In the case of the Netherlands around 1900, it seems to have been the case that especially women with high status positions worked in the official labour market after marriage. As a result the models suggest that getting married increases occupational status. Based on these results we conclude that the multilevel growth models as presented here are more suitable for explaining male careers than female careers.

Nevertheless, we are convinced that multilevel growth models can also be used to study female careers. First, almost all women had an occupation until their marriage. One could thus focus on women before they get married and study for instance the influence of social background on premarital occupational careers of a general female population. Second, most women who never got married stayed in the labour market. One could also select those women and study their careers. In this way one would study a selective group, but for this group, the model assumptions would be met.

All in all, we conclude that multilevel growth models are a good instrument to analyze historical occupational careers when the assumption is met that individuals stay on the labour market in periods that they are not observed. A great advantage of the models is that they can be extended in many ways. One example is the addition of a family level, to study the similarity and differences of careers of family members. It should also be possible, although less obvious, to apply the models to ordinal class schemes. Finally the models allow including a regional level, in order to take into account the influence of the regional context on career success.

3

Studying career success – the role of resources and norms for occupational status attainment in the Netherlands, 1865–1940

This chapter is co-authored with Ineke Maas. A slightly different version with analyses based on a smaller number of cases appeared in 2012 as “Studying Career Success – the Role of Resources and Norms for Occupational Status Attainment in the Netherlands, 1865–1940” in *European Sociological Review* 28 (2): 220-240.

3.1 Introduction

What is nowadays understood as a ‘modern career’ is assumed to have its breeding grounds in the mid- to late- nineteenth century (Mitch, Brown and van Leeuwen 2004). Since then, individuals are assumed to have had increasingly more successful careers, with higher levels of status and income, and to have been more often upwardly mobile (Wilensky 1960). However, empirical knowledge about occupational careers and the conditions that influenced them for the pre-1940s period is surprisingly scarce and scattered. To our knowledge, systematic reviews of careers exclusively refer to the time after World War II (e.g., Rosenfeld 1992). The research on careers in the periods before World War II is often based on specific occupations (e.g., Mitch 2004, on agricultural workers in Norfolk), a comparison between one or more organizations (e.g., Stovel, Savage and Bearman 1996, on careers at Lloyds Bank and Miles and Savage 2004, on case studies on the post office and Great Western Railways), or small regional samples (e.g., van Dijk, Visser and Wolst 1984, on regions in the Netherlands). However, this restriction to small regions, specific occupational groups or few organizations does not permit sound generalization from the findings.

Studies worth mentioning are Kaelble’s work on social mobility in the nineteenth and twentieth century in Europe and in the USA (1985), Maas and van Leeuwen’s study on Sweden (2004), and van Heek’s work on the Netherlands (1958). Research and theory development have been hampered by the ambiguity of the concept of ‘career’. It carries numerous connotations, ranging from the view that only upwardly mobile people have careers, in which case a large part of the population does not have a career at all (Wilensky 1960, Spilerman 1977, Bühlmann 2008), to a more comprehensive understanding of careers as entire working lives that can be more or less successful (Brown, van Leeuwen and Mitch, 2004). In this chapter, we employ the latter, more comprehensive view of career; thus, we study any kind of working life history, any succession of occupations held by an individual. We define successful careers as characterized by two dimensions. First, they start at a higher level of occupational status, and second, the occupational status of individuals having successful careers increases faster over the life course. We ask the following research questions:

To what extent did individuals in the Netherlands, between 1865 and 1940, increasingly have more successful careers over time?

How can we explain individual differences in career success?

Did the mechanisms that cause occupational success change over time?

We aim at contributing to previous research in the following four ways. First, most research on careers in industrial societies makes an assumption (often implicit) that since the mid- to late-nineteenth century, individuals have increasingly had successful careers. Indeed, individual mobility outcomes are often connected to macro societal developments such as industrialization, bureaucratization, and meritocratization, all of which started in the mid- to late-nineteenth century. These developments are assumed to have raised the average occupational status of the population, leading to more people having successful careers (Brown, van Leeuwen and Mitch 2004). However, there is a lack of conclusive evidence to support this assumption. Therefore, our first research question asks whether it is actually true that people increasingly had successful careers in the period before 1940.

Second, we develop a new approach for studying historical occupational careers. Most research on occupational careers focuses on upward, downward, and sometimes lateral mobility moves (Sørensen 1975, Blossfeld 1986, Carrol and Mayer 1986, Blossfeld and Mayer 1988, Almendinger 1989). Yet, the criticism of this line of research is that by focusing on mobility moves the occupational success over the course of an individual's whole life gets out of sight. Moreover the focus on mobility moves is less applicable to historical data, in which the exact dates of changes in occupational status are often not known.

Thus, we choose another approach. We study the growth in occupational status over an individual's life course. We assume that occupational status is affected by three types of determinants. First, the more work experience someone has, the higher their occupational status, with the increase in status expected to level off towards the end of a career. How successful a career develops is further affected by time-constant characteristics (e.g., basic schooling) and time-varying characteristics (e.g., marital status).

The working of these three determinants is illustrated in figures 3.1 and 3.2. In figure 3.1, all careers develop parallel to one another, meaning that the determinants have their effects only at the start of a career (in the case of time-constant characteristics) or at the moment they occur (time-varying characteristics), but the speed of growth is not itself affected. Figure 3.2 shows what happens if this assumption is relaxed. Now careers can develop at different rates: people who have basic schooling not only start their careers at a higher level but their occupational status also grows faster. By studying careers in this way (i.e., by means of growth models), our approach is analogous to studies of wage growth or total income over the life course (c.f. Mincer 1958). Like wage growth and total income, changes in occupational status over the life course, offer a more complete picture of individual economic success than single mobility moves or the change in income at any one point in time.

Third, whereas most research on long-term developments in occupational careers is rather descriptive, we will employ a theoretical framework that addresses two important influences on careers. On the one hand, we derive hypotheses on the role of resources for careers by

considering, amongst other aspects, the influence of human capital and parental status. On the other hand, we study the impact of norms and social expectations on careers by considering role models such as the male breadwinner and the female house- wife model. In this study, theories of differential career success with respect to firms and segments of the labour market [e.g., internal labour market theory and segmentation theory (Sørensen and Tuma 1981, Stovel, Savage and Bearman 1996)] will not be tested. Our data do not include information on firms. However, we will employ theory on changing labour markets to derive hypotheses on the changing impacts of human capital and on social expectations within the context of our period of study.

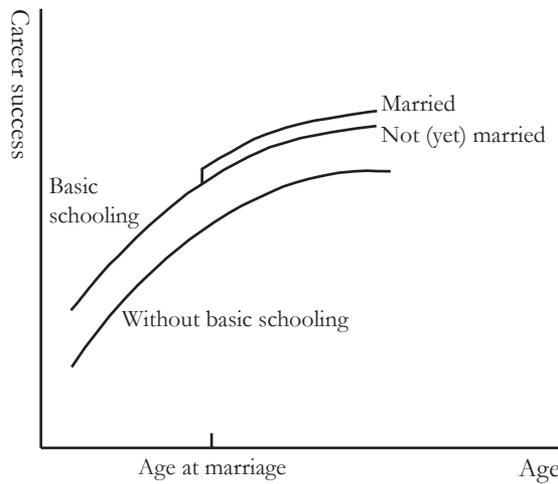


Figure 3.1 Effects of time constant and time varying characteristics on career success through success of first job

Finally, we employ an excellent database, the Historical Sample of the Netherlands (HSN), to study careers in a long-term perspective (Data Set Life Courses Release 2010.01). In comparison to data sources based on specific occupations or regions, this dataset is relatively large, containing information on the occupational careers of 8,291 men and 4,611 women who were in the labour market between 1865 and 1940. Since the data are a sample of all birth certificates from this period, complemented with information from marriage and population registers, we have been able to include a broad diversity of occupations.

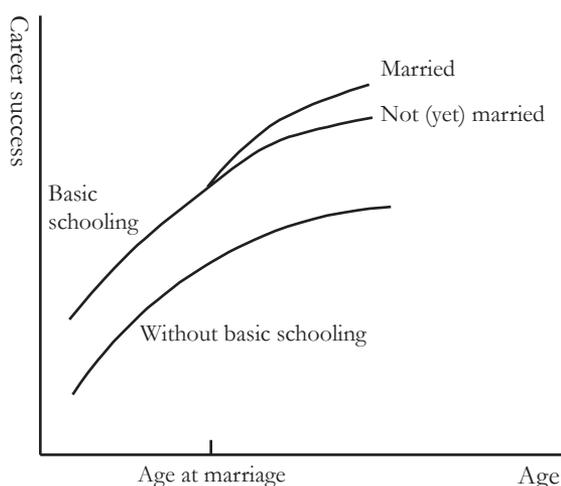


Figure 3.2 Effects of time constant and time varying characteristics on speed of growth of career success

Every individual in the data is represented by anywhere between one and twenty-seven measurements of occupational status. Since the data stem from official vital registers, problems common to collecting retrospective information on occupational careers and family backgrounds are avoided (de Vries 2006). Compared to other European countries, the Netherlands underwent industrialization late (i.e., during the late nineteenth and early twentieth centuries). Therefore, the time period we study, from 1865 onwards, is especially interesting as it was characterized by rapid transformations of the labour market. Van Zanden and van Riel (2000) argue that forces at work in this period compelled some groups of workers to lose their otherwise steady positions, whereas new chances to improve one's occupational status emerged for other groups. In short, this is a rich dataset; it is representative of the labour force, covering the conditions of both the rural and the urban areas of the Netherlands, enabling us to study the development of careers over close to 100 years.

3.2 Theory

In general, there are two theoretical approaches to studying occupational achievements. On the one hand, they are attributed to differences in resources and on the other hand to the influence

of norms and social expectations (Collins 1979). The main assumption of resource-based approaches is that people with more resources have more successful careers. We will discuss the importance of human capital and social capital as well as the intergenerational transmission of resources. The second theoretical approach focuses on the influence of social norms and expectations, on how people pursue their occupational hopes and dreams, how they seek to comply with norms, or how they are made objects of discrimination. During the nineteenth and twentieth centuries, gender played an important role in the work sphere (e.g., Leydesdorff 1977, Lown 1990, for the UK; and Pott-Buter 1993, for the Netherlands). Our discussion about the influence of norms focuses on the male breadwinner and the female housewife models as well as the general societal expectations and the discriminatory behaviour of employers associated with them. These models mainly refer not only to societal expectations towards married people but they also entail information about the perspectives of young women and men on their occupational lives. Young people anticipated that they would eventually be married then adjusted their occupational behaviour according to this expectation. We used both theoretical approaches to derive hypotheses about the influence of an individual's characteristics on their careers. In particular, we examine the following characteristics: work experience, basic schooling, parental status, migration and marital status.

Work experience

The most basic approach for relating individual characteristics to career success is human capital theory. Human capital refers both to formal and to informal education and to work experience, both general and specific (Mincer and Polachek 1974). It has been argued that those with more human capital are more likely to get ahead (Becker 1975). Over the course of a life, individuals gain experience specifically with regard to their job or in general with respect to their occupation. Work experience makes employees more productive and signals to the employer that lower training costs are needed in comparison to a worker with less experience. Experienced workers are also the last persons to be fired because they are the most valuable to an employer (Mincer and Polachek 1974). Because the novelty of an employee's additional experiences are finite, we expect the effect of work experience to decline with increasing age.

H1: Occupational status increased with work experience, but it did so to a lesser extent as the individual gained more experience.

We do not expect any changes regarding the positive effect of experience on occupational status over time. While the occupational and educational structures changed considerably, experience remained an important influence on productivity and thus occupational status.

Basic schooling

Another sort of human capital which is assumed to influence occupational success is education. In industrial societies, more educated employees more often tend to have successful careers (Sicherman and Galor 1990, Kerckhoff 1995). In the first instance, this is because of their generally higher productivity, and second, this is because education serves as a signal for lower training costs compared to unschooled workers.

During the period under study, participation in basic schooling was the most relevant indicator of educational achievement. Even before the first mandatory schooling law was introduced in 1901, participation in basic schooling was high in the Netherlands. Basic schooling enabled people to be more productive and to carry out a wider range of tasks compared to those who lacked any basic schooling (Knippenberg 1986, Boonstra 1993). That said, participation in secondary education was still very rare during this period (Mandemakers 1996). Therefore, we expect

H2a: People without basic schooling started their career at a lower occupational status level compared to those with basic schooling.

The lack of basic education not only made it more difficult for people to find a high status first job, it also probably led to a slower increase in success. Alternatively, people with some schooling increased their productivity faster and employers expected them to be more easily trainable. Research on human capital also found that jobs with higher complexity allow for further growth among employees compared to low-complexity jobs (Mincer 1958). In sum, we expect,

H2b: People without basic schooling had a slower increase in occupational status than those with basic schooling.

In the Netherlands, by the end of the nineteenth century, the levels of schooling increased and the number of people without at least some schooling decreased. In 1900 92% of all boys participated in basic schooling and 90% of all girls did. In the same year only around 0.5% of the population pursued secondary education. Basic schooling is a “positional good”; therefore, it is more detrimental to be uneducated when the majority has completed primary education than when the majority is uneducated. In a society where work in general became more complex, the demand for skilled labour increased.

H2c: Over time, the negative effect of lacking basic schooling on occupational status at the start of an occupational career, increased.⁶

⁶ We refrain from formulating hypotheses on the changing effects on the growth of status. Our data do not allow to estimate the three-way interaction between basic schooling (or another determinant), age and historical time that would be needed to test such hypotheses.

Parental status

In addition to such achieved characteristics as education, ascribed characteristics are also known to influence occupational attainment (Blau and Duncan 1967, Ganzeboom, Treiman and Ultee 1991). This was especially true in pre-industrial and industrializing societies where the occupational status of the parents was considered to be one of the most important personal resources (Kerr *et al.* 1960, Kaelbe 1985, Maas and van Leeuwen 2002, Zijdemans 2008). Parents with a higher occupational status could help their children to attain an occupational training or some education so that they could embark on their occupational career at a high level. Parents could offer their advice or use their social capital to facilitate the upward mobility of their children. If children followed in their parent's occupation, the parents could provide them with the necessary training, and the children might inherit a family run shop, a company, a farm, or financial capital (Treiman 1970). Likewise someone's social background could play a role in their recruitment to higher status jobs. People from higher status families are more likely to have incorporated upper class manners. Such manners signal the social background of an applicant enabling an employer to select someone from their own social class (Collins 1979). By influencing a child's starting position, parents could provide a good base for future success of their children (Shavit and Blossfeld 1993, Kerckhoff 1995).

H3a: The higher the occupational status of the parents, the higher the occupational status level at which the children started their career.

We expect that parents not only gave their children an initial advantage but could also influence the pace at which their careers progressed. Parents could give work-related advice (e.g., information concerning certain occupations or job opportunities), or make use of their social capital to further the careers of their children. Therefore, we expect,

H3b: The higher the occupational status of parents, the faster the rate at which the occupational status of their children increased.

While the influence of parent's status on children's occupational status is rather well supported by empirical research (see Ganzeboom, Treiman and Ultee 1991, for a review) there is no conclusive evidence on how this relation changed over time (i.e., in the time before the Second World War) (e.g., Kaelble 1985). However, according to theory, the influence of a parent on his children's social background became less important over the course of industrialization.

According to the logic of industrialism thesis, a number of related mechanisms have been proposed which restricted parent's ability to have a direct influence on the occupational

success of their offspring (Kerr *et al.* 1960, Blau and Duncan 1967, Treiman 1970). First, on account of modernization and industrialization processes, a diversification of jobs and occupations emerged. It was no longer possible for parents to pass their skills and occupations on to their children. Second, in the course of industrialization, employers are assumed to have been increasingly forced to choose their employees on the basis of their merits, rather than on basis of their social background. Third, due to the increasing specialization of labour, a greater number of jobs required specialized and longer training periods which families could not provide. In sum, these mechanisms suggest that

H3c: Over time, the occupational status of parents had an increasingly smaller influence on the occupational status of their children at the start of their careers.

Marital Status

Whereas basic schooling and parental status have been discussed from a resource perspective, also according to the normative approach being married is expected to have an effect on career success. We first formulate a hypothesis following the resource perspective, followed by a discussion according to the normative approach.

According to the social capital literature, a spouse can provide information, or knowledge, just like other network members (Bernasco 1994, Bian 1997, Verbakel and de Graaf 2008). However, a partner is special, as the link to a spouse is one of the strongest it makes willingness to support very likely. Thus we expect that people who had a spouse benefitted from his or her resources.

H4a: People had a higher occupational status after marriage, than before.

Based on the social capital literature, we do not expect changes over time in the importance of partner's support.

Following the normative approach we come to different hypotheses for the effect of getting married for men and women. According to the male breadwinner role model, men can expect to increase their occupational status after marriage, for two reasons. First, once men get married and have children they assume greater responsibility and society expects them to function as the (only) family provider. Due to this increased responsibility, men are assumed to invest more time and effort in their work becoming even more productive (Horrell and Humphries 1995, Lewis 2001, Kalmijn and Luijkx 2005). Second, employers would positively discriminate married men: employers favour married men because they are believed to be more committed to their jobs. Employers are also less prone to fire married men, as this is understood

to be less fair than firing men with fewer responsibilities. It is on these grounds that married men could be expected to have more successful careers than non-married men (Korenman and Neumark 1991).

Similar to the male breadwinner model, the house-wife model frames societal expectations towards married women and women with children. Van Poppel, van Dalen, and Walhout (2009) describe this role model for women in the nineteenth and twentieth centuries. They argue that Dutch urban bourgeois women demonstrated their financial independence by stopping their paid or registered work upon getting married. These women served as examples which in turn fuelled a societal appreciation for household production. Lower class families could not financially afford to follow this example. Women from these classes did not drop out of the labour market entirely. Rather they often simply stopped being visible components of the labour market, concentrating their activities on cottage industry, family farm labour, serving and personal services, thus on areas in which informal, less organized, and less successful careers took place (Leydesdorff 1977, van Poppel, van Dalen and Walhout 2009). Besides self-selection into less successful careers, women also faced considerable restrictions from employers. They were more often assigned to dead-end positions (Goldin 1994) or so-called ‘marriage-bars’ excluded women from employment once they got married and had children (Thurow 1975, Leydesdorff 1977). Though in the late nineteenth and early twentieth centuries the Netherlands had no overall national legislation that prohibited the labour market participation of married women, in certain periods married women were restricted from working in some sectors of the labour market. In 1904 a marriage bar was introduced in the postal service, and although this provision was scrapped in 1907 it was still being applied until the 1970s. From 1924 onwards municipalities were entitled to dismiss female teachers who decided to marry, and in 1934 an official marriage bar was introduced in the teaching sector. Because of social expectations and labour market discrimination, we expect married women to have less successful careers than women who did not marry (yet). The particular hypothesis in the case of women is opposite to the more general one derived from social capital theory.

H4b: After marriage, men had higher occupational status than before marriage.

H4c: After marriage, women had lower occupational status than before.

Although based on different mechanisms, similar expectations can be derived from economic theory (Becker 1981, but see Humphries 1998, for a critical discussion of this theory).

The male breadwinner model and the housewife model changed over time (Horrell and Humphries 1995). Often a three-stage historical development is assumed: In pre-modern societies an extensive integration of female manpower into the household economy is assumed; in industrial societies this developed into an extensive exclusion of women from official work,

and by the later stages of modernization, women were re-integrated into paid work (for a discussion and critique of this model see: Pfau-Effinger 2004). To some extent, The Netherlands presents a special case, as the male breadwinner model was already an important family model before the transition to industrialization (Pfau-Effinger 2004: 385). Van Poppel, van Dalen and Walhout (2009) show that from the 1820s onwards increasingly fewer Dutch women registered their occupations in official documents such as marriage certificates. Until the 1950s the male breadwinner model was deeply rooted in Dutch society.

We therefore expect that

H4d: Over time, the positive effect of marriage on men's occupational status increased.

H4e: Over time, the negative effect of marriage on women's occupational status increased.

Migration

Whereas the previous sections focused on individual and social resources, an alternative set of resources are connected to the region. Examples of such resources include the quality of the soil as well as the presence of factories. A large body of research shows that an individual's opportunities and chances for occupational success are influenced by the region in which they live, or by the region to which they migrate (e.g., Wagner 1989, Smits 2001). By migrating from a region with few opportunities to one with ample, people would be able to invest in their occupational careers. Thus, migration has been studied from an economic perspective (Sjaastad 1962). In the period under study, migration was probably an important strategy for increasing one's chances for occupational success (Moch 1992, Kok 1997, Pooley and Turnbull 1998). Initially, modernization and industrialization processes widened the gap between the rural and the urban occupational structures (Kerr *et al.* 1960, Treiman 1970). Regional differences in steam capacity of the industries ranged from 9 to 26 horsepower per 1,000 inhabitants in 1871 (Knippenberg 2003: 11). These regional differences in industrial development might have been an incentive to move from rural to urban areas (Kok 1997). Urbanized areas typically offered better prospects to individuals, especially in terms of local industries and the diversification of occupational structures (Wagner 1987). Because of contextual advantages afforded in urban areas we expect that, compared to any other move or to no move at all, moving from a rural to an urban place likely increased career success. Independent of the more favourable opportunity structure at their destination, it is nonetheless also possible that these migrants were successful because they were a self-selected group of people with special traits or ambitions and thus more prone to success (Kok 1995, Bras 2003).

H5a: After rural to urban migration people had higher occupational status than before.

Over time, we expect the positive influence of moving from a rural to an urban area on the likelihood of a successful occupational career to have decreased. In the course of industrialization, rural and urban occupational structures were converging again (Treiman 1970) so that the appeal of urban areas in terms of occupational opportunities decreased.

H5b: Over time, the positive effect of rural to urban migration on occupational status decreased.

3.3 Data, method and variables

3.3.1 Data

The HSN provides us with information not only on the occupational careers of individuals in the nineteenth and twentieth centuries, but it contains information on the life courses of a huge variety of the Dutch population in terms of occupations, social background, religion and location. The HSN is an excellent newly available data base for the longitudinal study of male and female careers, in different regions.

The HSN starts from a random sample of birth registers from the period 1812–1922 that eventually will include the life courses of 78,000 individuals. The main data sources for individual life histories are birth certificates, death certificates, marriage certificates, and the population registers (which were introduced to obtain a continuous registration of the composition of households and place of residence for each individual). Every time a vital event occurred (e.g., marriage, birth of a child, move to another address) information on the individual and if applicable his/her family was recorded and updated, respectively. Thus, the amount of occupational information we have about an individual is dependent on the number of vital events such as moving and birth of a child that they underwent and not on their occupational career per se (e.g., number of different occupations).

The collection of the data is on-going, therefore we use but a sub-sample (Data Set Life Courses Release 2010.01) that consists of life courses of individuals born between 1850–1922.

The data comprise information on the respondents' date of birth, marital status, literacy, father's occupation, all migrations, as well as the occupations of the respondents. Because our objective was to study occupational careers, we restricted the sample to the ages in which most people belonged to the working population (i.e., people who are at least 15-years old). We studied the period 1865–1940. In 1940 a change in the population registers made them less useful for studying occupational careers. By 1940, most of the birth cohorts in our study had finished their active occupational life. Complete information (i.e., information on at least one occupation and on all independent variables) was available for 23,303 occupations of 8,291 men and 9,982

occupations of 4,611 women.

Some critics of this type of data argue that the information on women's occupations is less complete than that on men because household heads would not always provide information about the occupations of their female household members. This may indeed be the case, but it is difficult to verify because the lack of information on women's occupations may also indicate their lower rates of participation in the labour force. In any case, information on female occupational careers, in general, is not lacking in the data. In the HSN, there is extensive information on the careers of large numbers of women.

Figure 3.3 presents the number of occupational measurements per 5-year age group for men and women. For both men and women, most measurements occurred around the age of marriage. In the case of men, the decrease in the number of occupational measurements begins at the age of 30, yet there are at least 800 measurements per age group until the age of 45. For women the amount of occupational information decreases steeply after the age of 25 years. Whereas for age group 26 to 30 there are still more than 1,100 occupational measurements known, in the following group (aged 31 to 35) the number reduces to around 500.

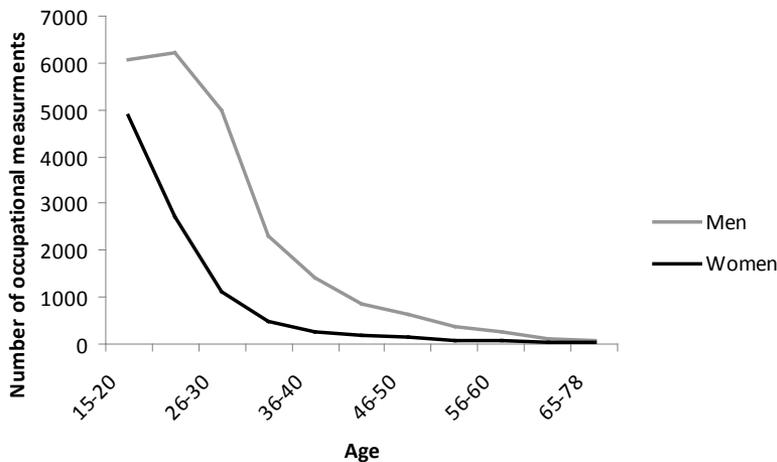


Figure 3.3 Number of occupational measurements for men and women per age group

3.3.2 Methods

The most common approach to studying quantitative career data is using event history analysis. Less common methods are optimal matching techniques and loglinear analysis. That said, we propose a different method here for several reasons. First, both event history analysis and optimal matching place very high requirements on the data. To examine a complete career (or that part of the career that is studied), all occupational moves must be known, including the exact timing for each of them. Yet, historical data based on official registers are different. They provide information on the occupation of individuals at certain points in time, but do not reveal when exactly people entered these occupations. The time points at which occupational information can be observed differ in number and timing among the individual subjects. Consequently we propose an alternative method: multilevel growth models. This method does not require complete information, and has been developed especially for analysing different numbers of observations within groups [e.g., pupils in schools of different size, the population of small and large countries, or differential numbers of measurements within individuals (compare Snijders and Bosker 1999)].

Alternatively, log-linear models are designed to compare two occupations (e.g., first and second occupation or first and last occupation). Hence, they are better suited for analysing datasets with limited data on careers. In addition, they require a clear definition of the two occupations to be compared (we should be sure which occupation is the first occupation of the career and which is the last of the career). Because the measures of occupational status in our data simply occur at different points in an individual's career, we cannot be sure that the first occupation observed is not in reality preceded by still an earlier occupation. The use of multilevel growth models is not only driven by data restrictions. These models have the advantage of elegantly modelling the basic dimensions of career success (i.e., the starting level of a career and the amount of status growth over the course of a life). They are able to do so, on the one hand, by abstracting from individual career moves, and on the other hand, by using all available information to estimate a status growth curve for each individual. We can also test whether a linear increase in status fits the data better than a curvilinear development (for example) and whether certain characteristics of individuals cause the career to start at a higher level or grow at a faster rate over time. Along with the optimal matching method, growth models have the advantage of being able to analyse the complete career at once. Alternatively, along with event history models, they are able to easily model the effects of both time-varying and time-constant variables on a career.

We will estimate several growth models with each one defined by one of the following constraints: (i) occupational status is expected to 'grow' with experience in the labour market, (ii) time-invariant characteristics cause the growth curve to start on a higher (or lower) level and/

or to grow at a different speed, and (iii) time-variant characteristics cause the growth curve to jump to a higher (or lower) level at the point when this characteristic changes, and/or it causes change in the speed of growth. Finally, separate models will be estimated for men and women.

3.3.3 Dependent variable

Occupational status: Assigning social positions to individuals is a difficult task in itself. Doing so over two centuries and across different national and international regions is even more so. Differing occupational terminologies have hindered international and longitudinal comparisons of occupational status for a long time (van Leeuwen, Maas and Miles 2004). However, such comparisons became possible after the development of the Historical International Standard Classification of Occupations (HISCO) (van Leeuwen, Maas and Miles 2004), based on the International Standard Classification of Occupations 1968 of the International Labour Office (ISCO68 1969). All occupational information we used was classified according to the HISCO codes. To analyse occupational status, we made use of the recently developed historical status scale HISCAM (Lambert *et al.* 2013). In developing the HISCAM scale, the same scale estimation techniques employed in the contemporary-focused version, the so-called CAMSIS scales, were used. These scales are premised on the assumption that patterns of social interaction (e.g., marriages) between people from different occupational strata are representative of the overall structure of occupational stratification. The HISCAM scale is an estimation of the occupational stratification structure, based on 1.5 million marriage records from 6 different countries (Britain, Canada, France, Germany, the Netherlands, and Sweden) and covers the period 1800–1938.⁷ In our analyses, the dependent variable is the respondent's occupational status, which on the HISCAM scale ranges between 1 and 99, with higher values indicating a higher occupational status. A servant, for example, has a HISCAM-score of 10.6, a lawyer a score of 99.0, and a tailor takes a middle position with a score of 49.7.

3.3.4 Independent variables

Experience: Occupational experience will be approximated using the age of the respondent. Every time information was updated in the original sources (e.g., marriage or death certificates) the age of the respondent was also noted. We assumed that occupational careers occur from the age of 15 years onwards, thus 15 was subtracted from the age of the respondent. The result was divided by 10. A quadratic term for experience was added to the analyses to test the hypothesis that the

⁷ In the HISCAM scale, it is assumed that the relative status positions of occupational groups do not change over time. A test of this assumption showed that changes are indeed relatively small (Lambert *et al.* 2013).

effect of experience declines over the occupational career. Note that this variable was a better indicator of men's occupational experience than of women's, as female careers were more likely to be interrupted by giving birth and the care of children.

Basic schooling: As a proxy for whether the respondent attended basic schooling we used information on whether the respondent was able to sign the marriage certificate (1) or not (0). A drawback to this variable is that it was only defined for people who were ever married. In order not to lose those cases where individuals were never married, we added a dummy variable to the analyses that indicated those who had never been married. Because the data collection is still under way a category of men and women who got married but their marriage certificate is not (yet) included in the HSN data, is added. Information on the signature is added to the analyses as a time-invariant characteristic.

Father's status: As with the respondents' occupations, the occupations of respondents' fathers were coded into HISCO and then assigned a HISCAM-score. If a respondent's father is known to have held more than one occupation, the data on father's employment taken closest to the respondent's birth was used.

Marital status: The HSN data include information on who married when. Being married is treated as a time variant characteristic. To all time points at which an occupation was observed, those before marriage were assigned a value of 0 and all points after marriage a 1. We do not consider divorce or widowhood. Note that information on an individual's marriage is not only available from marriage certificates but also from the population registers. Therefore a missing marriage certificate does not affect the registration of marital status.

Children: For an indication of whether there was a child in the household a value of 1 was given from the birth of the first child onwards.

Rural–urban move: The data provide us with information on the whereabouts of the respondents, including the dates of registration at a new address. This information was used to create two variables that represented migration.

The dummy variable, rural–urban move, received a value 1 for all occupations measured after a move from a rural to an urban area, until a next move took place. All other moves as well as no moves at all received a value of 0. Whether a community was rural or urban was obtained from the Dutch Census of 1859. All places registered as cities, for the purposes of our study, were treated as urban (Volkstellingen 1859). The dummy variable, different move, received a value of 1 for all occupations assessed after a respondent moved from a rural to a rural area, an urban to a rural area, or an urban to an urban area. A value 0 was assigned in those cases where he or she moved from a rural to an urban area or they did not move at all.

Urban: The urban variable was a control variable indicating whether the place of residence was urban or rural when the respondent's occupation was registered.

Year: The year variable measures the number of years since 1865 divided by 10.

The respondents' gender was taken into account by performing separate analyses for both men and women.

Descriptive information on all variables is provided in Tables 3.1 and 3.2.

Table 3.1 Summary statistics for time-invariant and time-varying variables - male respondents

Time-invariant variables (N=8291)	Min	Max	Mean/%	S.d.
Number of occupational measurements	1	27	2.81	2.05
Basic Schooling				
No			0.81	
Yes			53.20	
No marriage certificate			18.92	
Not known (never married)			27.08	
Father's Occupational Status (HISCAM)	10.60	99.00	46.94	11.87
Time-varying variables (N=23303)				
Dependent variable: Occupational status (HISCAM)	10.60	99.00	49.74	14.09
Experience/10	0	6.30	1.19	0.98
(Experience/10) ²	0	39.69	2.41	3.96
Married			23.16	
Child			28.65	
Urban			42.51	
Rural urban move			5.43	
Different move			18.64	
Year (from 1865)/10	0	7.50	4.70	1.50

Table 3.2 Summary statistics for time-invariant and time-varying variables -female respondents

Time-invariant variables (N=4611)	Min	Max	Mean/%	S.D.
Number of occupational measurements	1	21	2.16	1.65
Basic Schooling				
No			1.06	
Yes			48.12	
No marriage certificate			19.21	
Not known (never married)			31.60	
Father's Occupational Status (HISCAM)	10.60	99.00	47.00	12.20
Time-varying variables (N=9982)				
Dependent variable: Occupational status (HISCAM)	10.60	99.00	26.14	21.11
Experience/10	0	6.20	0.80	0.98
(Experience/10) ²	0	38.44	1.34	3.13
Married			4.50	
Child			9.80	
Urban			46.83	
Rural urban move			6.64	
Different move			20.78	
Year (from 1865)/10	0	7.50	4.38	1.63

Tables 3.3 and 3.4 present characteristics of career trajectories of men and women by marital status. Men who ever married have on average longer observation periods, namely 11 years in comparison to 7 years for men who never married, but the variance in both groups is very large. Never and ever married men also differ in the average number of occupational measurements, respectively 2.4 and 3. The difference is probably due the fact that the first group lacks information at marriage. The mean age at first occupational measurement for men who get married is slightly higher, 21.2 as compared to men who never get married, which is 20.4.

The length of occupational trajectories of women is on average 4.5 years long and thus much shorter than those of men. Many women are probably only observed between their entrance into the labour market and their marriages. In addition, some men and women have career length of 0; this meant that they were only observed once. Never married women have somewhat longer careers than women who marry (6 years compared to 4 years). The mean number of occupational measurements is lower as compared to men, for both ever and never married women it lies around 2 measurements. The mean age at the first occupational measurement is similar for men and women, but women end their occupational career much earlier than men, on average around age 24, although we do observe some occupations for women at age 77. With the exception of the difference in the careers between men and women, we conclude that any differences in the quality of the data between the subgroups are relatively small.

Table 3.3 Some descriptive characteristics of the occupational careers of men in the HSN-data by marital status

Individual characteristic	N	Minimum length in years	Maximum length in years	Mean length in years	S.d. length in years	Mean # occupations	Mean age at first occupation	Mean age at last occupation
All male respondents	8291	0	60	9.74	10.55	2.81	21.00	30.75
Married	6046	0	60	10.71	10.62	2.98	21.22	31.93
Never married	2245	0	53	7.14	9.92	2.37	20.44	27.58

Table 3.4 Some descriptive characteristics of the occupational careers of women in the HSN-data by marital status

Individual characteristic	N	Minimum length in years	Maximum length in years	Mean length in years	S.d. length in years	Mean # occupations	Mean age at first occupation	Mean age at last occupation
All female respondents	4611	0	58	4.42	7.32	2.16	19.78	24.20
Married	3154	0	58	3.81	6.21	2.14	19.42	23.22
Never married	1457	0	53	5.74	9.13	2.21	20.58	26.33

3.4 Descriptive results

The three careers described in figure 3.4 exemplify how diverse the careers recorded in the HSN database actually were. They differ in length of observation period, number of observations, and in the richness of information provided. They range from a career that starts in the lower part of the status scale ('worker') and continues without any change in occupational status, to one that shows upward mobility ('teacher'). That said, both worker and teacher were sons of agricultural workers. While they both started from the same point of origin, the career of the teacher was characterized by success, starting as a schoolteacher and ending in his last occupation as head of school. The worker, on the contrary, remained in the same occupation most of his life (at least during the period of his life that we observed). The career of the 'gardener' displays the most fluctuation in occupational status: this son of a carpenter started as a coachman, became a servant then worked again as coachman. After a period in which he worked as a gardener, he finished his career as a tree grower and finally as tree grower assistant.



Figure 3.4 Three careers from the HSN data; time points of measurement of occupational status are indicated by dots

Research question 1 asks to what extent people in the Netherlands had more successful careers over time between 1865 and 1940. To answer this question we compare the occupational careers of three birth cohorts. For each of the cohorts, Figures 3.5 and 3.6 relate the average occupational status scores to age for both men and women. To smooth these curves, 5-year moving averages are presented. The occupational careers of men clearly show signs of increasing success over time (figure 3.5). The first born cohort (born between 1850 and 1874) shows an increase of

occupational status during their life courses. In addition, towards the end of the careers, the status of the first cohort decreased. The second and third cohort started their careers on a higher level than the first cohort. The second cohort (born between 1875 and 1899) likewise shows a slight increase in career success, the average status of this cohort reached its peak around the age of 46 years. The last cohort (born between 1900 and 1922) started their career at around 50 status points, thus around 2 points higher than cohort 2. Furthermore, the last cohort shows an increase in status over the career, so that men started their career with on average 50 status points reach on average a status of 57 at the age of 35. Both the increase in status over the career as well as over time supports the expectation of increasing career success for the careers of men.

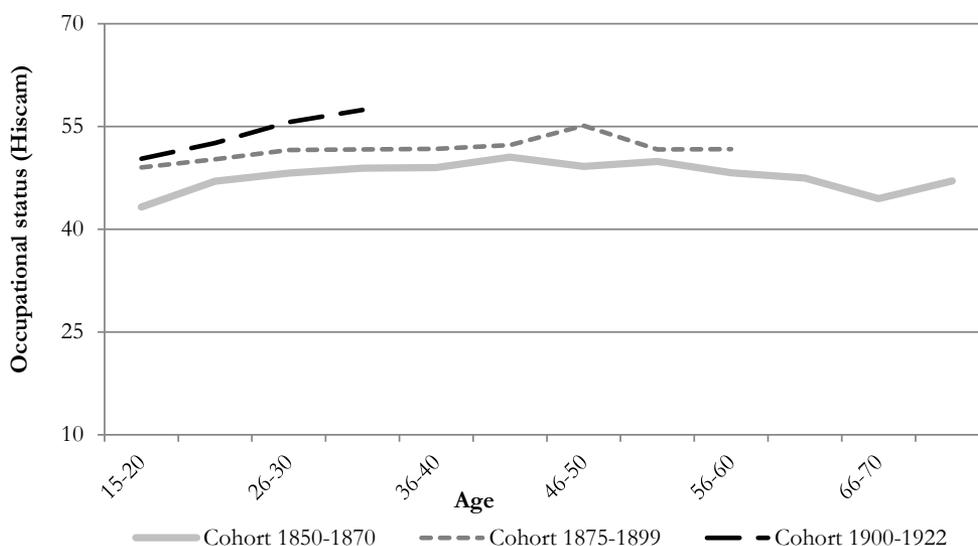


Figure 3.5 Average occupational status of men over the life course by birth-cohort (5-years moving averages)

The female careers (figure 3.6) in general show a much wider range in occupational status than the male careers. For all cohorts, between age 15 and 35 years, an increase in occupational status is visible. As in the case of men, the two later cohorts started their career at higher levels than the first. Cohort 2 (born between 1875 and 1899) develops parallel to cohort one. After 20 years in the labour market women's status reached on average 42 points, women in their 50s had on average a status of 50. The finding that the occupational status over the life course of the last cohort was at a higher level (on average) than the preceding ones, lends support to the expectation of an increasing status over time.



Figure 3.6 Average occupational status of women over the life course by birth-cohort (5-years moving averages)

3.5 Test of the hypotheses

First, the models for male respondents will be discussed, followed by a discussion of the models for women. The first model estimated (model 0) was the null model (table 3.5). This model indicates how much variation in occupational status is found both between and within individuals (i.e., between the different measurements of occupational status of a single respondent). There is more variation in occupational status between men than within men’s careers: 75 per cent $[149.787 / (149.787 + 50.793)]$ of the variance in occupational status is between men. Model 1 includes all of the main effects of variables measuring norms and resources. If we take the characteristics of men into account, there is some evidence for an overall movement towards more successful careers. With the passing of every 10 years, the average occupational status increased by 1.276 status points. In accordance with hypothesis 1, work experience increased the occupational status of men by almost 1.9 points for every 10 years. Likewise, there is a small negative effect of experience squared; thus over a life time, the amount that occupational status increased slowed down at older ages, as more experience had been accumulated.

Table 3.5 Individual effects on men's occupational status (N_{men} = 8,291 / N_{occupational measurements} = 23,303)

	Model 0	S.E.	Model 1	S.E.	Model 2	S.E.	Model 3	S.E.	Model 4	S.E.									
Fixed part																			
Constant	50.162	**	0.145		14.007	**	1.455		44.206	**	1.562		42.904	**	1.461		49.704	**	2.974
Experience/10					1.886	**	0.176		1.154	*	0.459		1.932	**	0.177		-0.534		0.999
Experience/10 ²					-0.378	**	0.037		-0.398	**	0.038		-0.398	**	0.038		-0.392	**	0.039
Father's status					0.493	**	0.011		0.515	**	0.012		0.500	**	0.011		0.485	**	0.013
Married					-0.106		0.219		-0.393		0.252		-0.227		0.224		-0.421		0.232
Child					-0.376		0.210		-0.353		0.211		-0.420	*	0.211		-0.386		0.211
<i>Basic schooling</i>																			
No basic schooling					ref.				ref.				ref.				ref.		
Yes					4.709	*	1.389		3.191	*	1.585		4.765	*	1.456		-2.208		2.977
Not known (never married)					3.805	*	1.404		2.822		1.576		3.870	*	1.471		-2.537		2.983
No certificate					5.293	**	1.411		3.886	*	1.585		5.336	**	1.478		-1.802		2.989
<i>Migration</i>																			
Rural-urban move					0.395	*	0.152		0.389		0.153		0.410	*	0.153		0.420	*	0.153
Different move					-0.101		0.254		-0.098		0.253		-0.118		0.255		-0.116		0.254
Urban					2.381	**	0.181		2.358	**	0.181		2.363	**	0.182		2.350	**	0.182
Year (since 1865)/10					1.276	**	0.079		1.334	**	0.091		0.844	*	0.410		3.054	*	0.945
Over the life course																			
Experience/10* father's status									-0.021	**	0.005						0.014		0.008
<i>Experience/10* basic schooling</i>																			
Experience/10*no					ref.				ref.				ref.				ref.		
Experience/10*yes					1.001	*	0.420		1.001	*	0.420		1.001	*	0.420		2.661	*	0.998
Experience/10*not known					0.409		0.438		0.409		0.438		0.409		0.438		1.986	*	0.998
Experience/10*no certificate					0.916	*	0.441		0.916	*	0.441		0.916	*	0.441		2.891	*	1.007
Over historical time																			
Year10*father status													-0.032	**	0.005		-0.040	**	0.006
<i>Year10*basic schooling</i>																			
Year10*no													ref.				ref.		
Year10*yes													0.620		0.403		-1.692		0.950
Year10*not known													0.341		0.415		-1.626		0.955
Year10*no certificate													0.417		0.418		-2.040	*	0.963
Year10*married													0.043		0.106		-0.082		0.107
Year10*rural-urban move													0.197		0.168		0.210		0.168
Year10*different move													0.267	*	0.098		0.268	*	0.098
Year10*urban													-0.248	*	0.100		-0.241	*	0.100
Random part																			
Between individuals	149.786				105.028				105.330				105.056				104.791		
Within individuals	50.793				48.771				48.632				48.571				48.566		
-2 log-likelihood	174771.889				171650.261				171645.948				171614.617				171600.485		

*p<.05; **p<.01; (two-tailed tests). Note: Experience starts to count at age 15, year starts to count at 1865, and the variables in the interaction terms are mean-centered, except for the variable experience/10.

Both time-constant predictors of basic schooling and father's social status affect occupational status of men at the beginning of their careers. Men who were able to sign the marriage certificate had an occupational status that was 4.7 points higher than those who were not able to sign. Moreover, men who did not marry at all during the observation period, men with basic schooling who did marry and men with missing marriage certificates all had a higher status compared to men without basic schooling who got married. This finding supports hypothesis 2a. For every additional status point of the father men gained half a point (0.493) thus the expected effect of a father's status on his son's occupational status at the beginning of his career is supported (hypothesis 3a). The expected increase in occupational status after marriage is not found, thus hypotheses 4a and b are not supported. In line with our expectations, after migration from a rural to an urban place men's occupational status was on average 0.4 points higher and therewith hypothesis 5a is supported.

Adding these predictors reduces the unexplained variance within men from 50 (the null model) to 48 and the unexplained variance between men from 149 to 105.

If father's status and/or basic schooling influences the rate at which occupational status grew is tested in model 2. The rate of growth was expressed by the effect of the experience variable (divided by 10). The interaction of experience and father's status shows a significant negative effect. For each additional status point of the father, the rate at which status grew over the career reduced by 0.021 per 10 years.

This means that the status of men with higher status fathers increased slower over their career. Thus model 2 yields no support for hypothesis 3b. Basic schooling had a significant effect on the rate of growth of occupational status. For every additional 10 years of experience, the status of men with basic schooling increased by one point more than from men without basic schooling. Therefore, hypotheses 2b is supported.

Model 3 includes over time interactions instead of interactions with experience. We expected the effects of father's status and basic schooling to decrease and the effect of marriage to increase over time. In line with our expectations the effect of father's status decreased slightly by 0.03 points per ten years. The effect of basic schooling, being married and rural-urban migration did not vary over time.

In Model 4, interactions with experience and with year are included. Including both interactions with father's status in the model causes the effect of the interaction with experience to turn insignificant and positive. Also, the interaction of father's status with year gets slightly stronger. Only after taking into account the effect of father's status over historical time it becomes clear that their father's status affected the speed at which status grew over the life course. Either way, we still found no support for hypotheses 3b which expected a positive effect of father's status for son's increase in status over the life course.

The same sequence of models is estimated for women (table 3.6). The first model is the null model. Similar to men, there is more variation in occupational status between women than within female careers: 73 per cent of the variance in occupational status is between women (which was only slightly less than the variance between men). Model 1 includes the main effects of variables measuring resources and norms. Adding these predictors to the model reduces the unexplained variance within women from 110 (in the null model) to 97 and the unexplained variance between women from 387 to 286. Over time, with each additional 10 years, the average occupational status of women increased by around 2 points. As expected according to hypothesis 1, work experience increased the occupational status of women by approximately 2.5 points for every 10 years. There is no effect of experience squared; thus over a life time, the amount that occupational status increased did not slow down at older ages. Hypothesis 1 is therefore only partly supported.

The expected effect of a father's status on his daughter's occupational status at the start of her career (hypothesis 3a) is found. For every additional point of status of the father, daughters gained around half a point (0.536). Less support is found still for hypotheses 2a, 4c, 5a, and 5b. Whether a woman had basic schooling did not significantly affect her occupational status at the start of her career. Contrary to our expectations, we find an increase in occupational status after marriage. After marriage women had occupations that are on average almost 11 points higher status than those from before marriage. In addition, having a child also increased a woman's occupational status. After the first child, women's status gains around two and a half points. Rural-urban migration did not affect the occupational status of women.

The next model (model 2) includes interactions with the respondent's experience; more specifically, we test for an interaction between father's status and experience, as well as between basic schooling and experience. Contrary to our expectation, women with higher status fathers had a slower increase in status over the life course, per 10 years of experience the growth in status was 0.059 status points slower for every additional status point of the father. The interactions with basic schooling yield no significant results.

In model 3, the over time interactions of a father's status, signature, and being married are added. The interaction term with father's status is not significant. Thus, the effect of father's status remained equally strong over time, which does not support hypothesis 3c. The over time interaction with basic schooling, being married and migration does not yield significant results. All other variables have effects that were similar to the ones described in model 1. In the final model (model 4), both the experience and the over time interactions with basic schooling, father's status and migration are added. In model 4 the interaction of time with father's status is significant and negative, indicating that with every ten years the effect of father's status (which was 0.618 in 1865) decreased slightly by 0.04 points. Further, there are no substantial changes in the effects of the variables after adding the over time interactions to the model.

Table 3.6 Individual effects on women's occupational status (N_women = 4,611 / N_occupational measurements = 9,982)

	Model 0	S.E.	Model 1	S.E.	Model 2	S.E.	Model 3	S.E.	Model 4	S.E.
Fixed part										
Constant	27.377	**	0.315							
Experience/10	-10.186	**	2.795		24.275	**	2.917		25.629	**
Experience/10 ²	2.556	**	0.446		2.373	*	1.306		2.501	**
Father's status	-0.043		0.109		-0.153		0.112		-0.026	
Married	0.536	**	0.023		0.584	**	0.026		0.535	**
Child	10.749	**	0.954		12.055	**	1.025		10.860	**
	2.487	**	0.711		2.632	**	0.717		2.330	**
<i>Basic schooling</i>										
No basic schooling	ref.				ref.				ref.	
Yes	-2.539		2.703		-2.339		2.914		-4.223	
Not known (never married)	2.781		2.703		2.069		2.947		1.180	
No certificate	-2.464		2.759		-1.861		2.980		-4.005	
<i>Migration</i>										
Rural-urban move	-0.803		0.545		-0.762		0.544		-0.096	
Different move	-0.178		0.344		-0.229		0.343		-0.520	
Urban	3.594	**	0.433		3.549	**	0.433		3.984	**
Year (since 1865)/10	2.016	**	0.172		2.010	**	0.172		2.341	*
Over the life course										
Experience/10* father's status					-0.059	**	0.014			
<i>Experience/10* basic schooling</i>										
Experience/10*no					ref.				ref.	
Experience/10*yes					-0.117		1.222		0.461	
Experience/10*not known					1.273		1.226		2.088	
Experience/10*no certificate					-0.883		1.314		-1.291	
Over historical time										
Year10*father status									-0.003	
Year10*basic schooling									0.011	
Year10*no										
Year10*yes									ref.	
Year10*not known									-1.130	
Year10*no certificate									-1.626	
Year10*married									0.006	
Year10*rural-urban move									-1.023	
Year10*different move									0.192	
Year10*urban									0.164	
									1.222	**
Random part										
Between individuals	387.787		286.691		286.339		283.261		281.920	
Within individuals	110.316		97.036		96.723		97.301		96.905	
-2 log-likelihood	84473.515		82514.740		82489.424		82485.771		82439.048	

* p<.05; ** p<.01; (two-tailed tests). Note: Experience starts to count at age 15, year starts to count at 1865, and the variables in the interaction terms are mean-centered, except for the variable experience/10.

3.6 Discussion and conclusion

In this chapter, we studied career success over an individual's life course using a long-term perspective. We sought to answer three research questions. The first question focused on whether, between 1865 and 1940, individuals' careers became more successful over time. A comparison of the life-course patterns of three cohorts along with a multilevel analysis revealed that careers indeed became more successful over time. Men and women who were born in later cohorts started their careers on a higher level than the first cohort. In addition, they succeeded in maintaining this advantage throughout their occupational career, at least as far as we could observe.

The second and third question concerned possible explanations for individual differences in career success and in their changes over time. These were approached by formulating hypotheses using a resource as well as a norms and societal expectations framework. To test several hypotheses we considered three types of influences on career success. First, based on the human capital literature we assumed that with increasing experience people gained occupational status but that these gains levelled off at the end of an individual's careers. Second, we studied the influence of time-invariant and time-varying characteristics on individual careers. These characteristics may have caused individuals to start their careers at different levels, or they may have caused a differential growth of status. Finally, in an effort to answer the third research question, we tested hypotheses on changes over time for some of the effects.

For men, resources played an important role in determining career success over the life course: experience, basic schooling, father's status and rural-urban migration facilitated the acquisition of occupational status. However, contrary to what we expected, men's occupational status did not increase after marriage. This finding is puzzling because based on theoretical accounts marriage is expected to increase men's status. Whereas basic schooling also facilitated the increase in status over the life course, men with higher status fathers did not increase faster in status over their careers as compared to men from lower status families. The finding that over time the effect of father's status decreases supports the prediction of the logic of industrialism thesis. The effects of the other individual characteristics (basic schooling, migration, being married) did not vary over time.

For women, the findings are somewhat more mixed: in support of the resource perspective we found positive influences for work experience, father's status, and being married and having a child, on female career success. The career success of women with basic schooling did not differ from that of women without basic schooling. The finding that women's status is higher after marriage contradicted the hypothesis based on the female housewife model. The positive effect of marriage on female careers seems counterintuitive, at least when taking into account the well-established theoretical and empirical knowledge on female careers in the nineteenth and

twentieth centuries. The most straightforward explanation for this finding is that after getting married many women simply left the labour market and thus were no longer observed. Hence, our findings may have emerged because women with higher status occupations were more likely to stay in the labour market after marriage than women with less attractive occupations. Pure human capital theory predicts that all women would stay in the labour market (Mincer 1958). On the contrary, pure household economics predicts that all women would leave the labour market (Becker 1981). Indeed our finding is intermediary and suggests that more productive women were more likely to stay in the labour market. Curiously, this is the opposite of what we would have expected from the housewife model. Higher status women did not in fact set the example by leaving the labour market; indeed they were more likely to continue working. Perhaps less successful women did not in fact leave the labour market but after marriage no longer reported their occupation in the official registers. We do not know to what extent this was the case, but we do know that this problem is smaller for our data than for other data sources (e.g., census data). The sources upon which the HSN data are based are registers in which women often had to state their occupation themselves. Other data often have an additional ‘filter’ (e.g., a census official who had his or her own ideas or instructions about whether women’s occupations should be recorded). These other sources are more vulnerable to under-reporting the occupations of certain groups deemed by elements of the population as not supposed to participate in the labour market.

Growth models assume that during the periods where women were not observed they nonetheless behave in the same way as women with similar characteristics who were observed. That said, in reality, many women were not observed simply because they had dropped out of the labour market at, or after, marriage. As a result, the models suggest that getting married increases occupational status. Based on these results we conclude that multilevel growth models presented here are more suitable for explaining male careers than female careers.

Nevertheless, we remain convinced that multilevel growth models can still be used to study female careers. First, almost all women had an occupation until their marriage. One could thus focus on women in general, before they get married and study the influences (e.g., social background) on their pre-marital occupational careers. Second, most of the women who were never married remained in the labour market. Alternatively, one could focus on these women and study their careers. In this way one could study a selective group, but for this group, the model assumptions would be met.

Another interesting finding of this study is that the place of residence (whether or not it was urban) did affect the careers of women and men likewise, but migrating from rural to urban areas affected only the career success of men. Presumably many women did not migrate to improve their own occupational situation but accompanied their husbands who relocated. Another possibility is that men’s and women’s career success was facilitated by different

contextual characteristics. Future research may further study this question by including (regional) indicators of modernization processes such as industrialization (c.f. Zijdeman 2008). Finally, it can be that migration does positively affect the occupational careers of women, but along other dimensions than status. Stovel, Savage and Bearman (1996) suggest that during this period in the United Kingdom tenure became a more important characteristic of a 'successful' career.

In conclusion, we sought to systematically examine careers longitudinally. We showed that, indeed in the case of the late nineteenth and early twentieth centuries Netherlands, there was a clear increase in the career success of individuals. Moreover, we showed that a theoretical framework that underscores the importance of resources for careers could explain part of the differences in career success. Future research should focus on obtaining a better understanding of female careers (e.g, examining women who drop out of the official labour market) and of the regional differences in career success.

4

Occupational career attainment during modernization. A study of Dutch men in 847 municipalities between 1865 and 1928

This chapter is co-authored by Ineke Maas and Marco H.D. van Leeuwen and is currently under review at an international journal.

4.1 Introduction

Recent advances in historical sociology have re-opened the long-standing discussion on the determinants of, and shifts in, social inequality and mobility in past eras. Occupations as standardized indicators of social position have become available to study social mobility over time, between regions and over an individual's life course (van Leeuwen and Maas 2010).

In this chapter, we study the effects of regional level modernization processes on individual career success in Dutch municipalities in the late nineteenth and early twentieth centuries. This was a period of tremendous social and economic change, rapid industrialization and continued urbanization. At the same time, modern transport, communication and meritocratization were spreading rapidly. These processes are assumed to have caused major changes in individual social mobility outcomes. Industrialization is often understood to have brought many individuals economic and social success, and to have increased mobility rates (Inkeles 1960, Kerr *et al.* 1960, Kaelble 1985, Mitch, Brown and van Leeuwen 2004). The average occupational status of the population is assumed to have increased; individuals are believed to have enjoyed more successful careers, a higher level of status and income and increased upward mobility (Treiman 1970, Hauser *et al.* 1975, Brown, Mitch and van Leeuwen 2004).

From previous research it is unclear whether 19th century modernization processes actually led to an increase in career success across the population at large. Historians of economics and labour, in addition to labour sociologists, have performed relatively few analyses on this subject. These examinations have yielded case studies, mostly relating to careers in well-regulated segments of the labour market such as banks and insurance companies (Jacoby 1984, Vincent 1993, Stovel, Savage and Bearman 1996, Seltzer and Simons 2001, Owen 2004, Miles and Savage 2004). It is difficult to generalize their results to the total male population.

In addition to this first strand of research, a second branch (also composed of a limited number of studies) has sought to model occupational careers, notably via log-linear modeling (Featherman and Hauser 1978, Kaelble 1985, Boonstra 1993) and sequence analyses (Abbott and Hrycak 1990). A disadvantage of log-linear modelling is that only very few independent variables can be included in the model, making these models less suitable for studies that aim to assess the influence of several modernization processes and individual characteristics. Sequence analyses demand detailed information on timing of occupational changes, which historical data of a sample of the working population normally do not provide.

Finally, there is the vast body of literature written by stratification sociologists (Spilerman 1977, Carroll and Mayer 1986, Mayer and Carroll 1987, and more recently Blossfeld, Mills and Bernardi 2006, Barone, Lucchini and Schizzerotto 2011, Barone and Schizzerotto 2011). These studies, however, focus on cohorts born in the 20th century who had their career mainly after WWII. They study careers against the light of other macro developments, such as globalization

and economic crises. Their research questions focus on life-cycle destandardization (Blossfeld, Mills and Bernardi 2006) and the role of social origins for occupational career attainment (Barone, Lucchini and Schizzerotto 2011).

The few studies of careers during times of industrialization do not point unequivocally toward an increase in career success. Maas and van Leeuwen (2004) find more career mobility during industrialization in Sweden; however, this finding reflects mostly lateral movements of unskilled farm workers who became unskilled factory workers. Schulz and Maas (2012) find only a slight increase in career success in the Netherlands in the late nineteenth and early twentieth centuries, suggesting an upward shift of the entire occupational structure, rather than greater upward mobility over the life course. Most of the variance in career success can be attributed to individual characteristics; basic schooling, father's social class, and marriage facilitated the attainment of occupational status. Notably, a trend toward increased success has not been found for formal careers either, such as careers in bureaucracies and other formally defined internal labour markets (Vincent 1993, Selzer and Simons 2001, Miles and Savage 2004).

This chapter will demonstrate another approach that has only recently become feasible. Unlike research focusing on specific occupational groups and localities, our study models and makes predictions for the careers of a random sample of the male labour force nationwide. We take advantage of recent advances in the field of history – the rise of large databases and common occupational coding schemes. We use data from the Historical Sample of the Netherlands (HSN) to analyse careers longitudinally. The HSN contains information on the occupational careers of 7,000 men who were present on the labour market between 1865 and 1928. Because the data represent a sample of all of the birth certificates from this period, which is extended to include information from marriage and population registers, many types of occupations are captured. We analyse between one and twenty-one measurements of occupational status of each individual. Regrettably, we can only study occupational careers of men, because the multilevel growth models employed assume that individuals are active on the labour market in periods that they are not observed. Due to childbirth, childrearing and household responsibilities women often have interrupted careers and therefore do not always meet the assumptions (Schulz and Maas 2010).

The historical data are not restricted to uniformly upwardly mobile careers, but reflect upward, downward and lateral occupational moves over the life course. We employ these data to test general hypotheses on the effects of nineteenth and twentieth century's modernization processes from classic work by stratification sociologists (Kerr *et al.* 1960, Treiman 1970). Whereas research on careers sometimes studies temporal differences (e.g., Maas and van Leeuwen 2004, Barone and Schizzerotto 2011), regional differences are almost completely ignored. We employ a multi-level research design, where the theoretical indicators- such as communication, transport and social values – are measured at the level of municipalities, and may vary yearly.

Such an approach is as pertinent to the literature as it is difficult to perform. It is challenging to systematically capture such indicators for hundreds of municipalities over a period of 63 years. Yet such work is essential, because without it, classical theories cannot be, or can at best only partially be, empirically tested.

We ask: Are men in more modernized areas more likely to have successful careers? And does the influence of individual characteristics on career success vary according to regional and temporal differences in modernization?

4.2 Theory and hypotheses

Treiman's (1970) theory on the effects of different modernization processes on individual mobility outcomes forms the starting point for the development of our hypotheses. Treiman (1970) relates societal changes in industrialization, educational expansion, mass communication, urbanization, and value change to variations in the stratification system.⁸ Since these developments may occur at different points in historical time and also expand at different rates, it is important to distinguish them (compare Zijdeman 2010). However, theoretically we expect the expansion of mass communication, transport, education and industry to affect career success in a similar way. We therefore discuss them together under the label of socio-technological changes. The effects of value changes are expected to be different from those of socio-technological change and are therefore discussed separately.

We start with formulating hypotheses regarding the direct effects of socio-technological changes on career attainment. Subsequently, we formulate hypotheses on how the effects of individual characteristics on career success vary according to socio-technological changes and value change. The individual characteristics we consider are work experience, basic schooling, social background and marital status. Numerous previous studies have theoretically argued and empirically shown that these characteristics are important predictors of career success nowadays (Blau and Duncan 1967, Rosenfeld 1992, Kerckhoff 1995, Kalmijn and Luijkx 2005). In a previous study we have shown that this was also the case for men in the late nineteenth and early twentieth centuries (Schulz and Maas 2012).

Socio-technological modernization and career success

The well-known “logic of industrialism” thesis states that a number of socio-economic changes have impacted the occupational structure and logic of the workplace in general (Inkeles 1960, Kerr

⁸ Treiman as well as numerous other researchers have applied the model of industrialism to historical developments in different countries, for example Grusky 1983, Grusky and Hauser 1984, Ganzeboom, Luijkx and Treiman 1989 and Smits, Ultee and Lammers 1998.

et al. 1960, Treiman 1970, Mitch, Brown and van Leeuwen 2004). It predicts that industrialization, educational expansion, mass transport and mass communication create an increased demand for goods and services provided by people in higher-status jobs. Such modernization processes simultaneously support the growth of infrastructures that qualify individuals to act on these new occupational opportunities.

Research on intergenerational mobility has found some support for the industrialism thesis (Zijdeman 2010), but has not reached a consensus on the question whether or not industrialisation has led to more openness in societies (for a review, see van Leeuwen and Maas 2010). We address this question of whether individuals in modernized municipalities profited more over the course of their careers than those in areas that were less modernized. The shift from the production of goods to the production of services, in addition to a growing demand for administrative and clerical workers in public bureaucracies, has created jobs that call for better-trained employees (Kaelble 1985, Mitch, Brown and van Leeuwen 2004). The emergence of more complex and higher-status occupations also led to the obsolescence of certain traditional forms of employment (Kuznets 1957). These shifts in occupational structure are believed to greatly increase individual social mobility (Hauser *et al.* 1975).

Educational expansion enabled more children from varying social strata to attend school. Consequently, a larger number of people were able to begin their careers in higher-status jobs. In labour markets with rapidly changing modes of production, expanded education also grants individuals easier access to additional training throughout the life course. The rise of mass communication enabled people to access information about new job opportunities with employers outside their social networks. For example, post offices began to distribute newspapers with job advertisements to a greater geographical area (Zijdeman 2010). Mass transport reduced the cost of travel, allowing residents to leave their homes and return with new information to share. Finally, mass mobility, established with train networks and later with private cars, made it possible for people to seek employment across a broader geographical area.

In the Netherlands, the second half of the 19th century was a time of accelerated changes brought about by the mechanization of work. Between 1850 and 1896, the number of steam engines (in horse-power per 1000 inhabitants) rose from 3 to 122 (van Zanden and Riel 2000: 290). In 1863, a new law on secondary schooling was passed with the aim of reaching children of ordinary workers (Boekholt and de Booy 1987:182). In 1860, only three rail tracks existed, whereas by 1940, all parts of the country were serviced (see figure 4.1).

There are two ways in which socio-technological changes potentially increased individuals' career success. First, men were able to begin their careers in higher-status first jobs, which had a strong effect on subsequent occupational positions (Blau and Duncan 1967). Second, those active on the labour market in industrializing countries may benefit from rapid developments in science and technology. Technological change is often associated with negative employment

outcomes for older workers. However, when formal training for new job skills in demand is not yet widely available, older workers can benefit from technological change by learning on the job and advancing to more complex and often higher-status positions (Mincer and Ofek 1982, Bartel, Lach and Sicherman 2005).

Hypothesis 1: In contexts that were socio-technologically more advanced, individuals had more successful occupational careers.⁹



Figure 4.1 The Dutch railway network in 1860 and 1940 - black lines represent the Dutch railway network in 1860; grey lines represent the railway network in 1940, source: stationsweb.nl
Modernization processes and individual determinants of career success

The “logic of industrialism” thesis (Kerr *et al.* 1960) predicts that with increasing modernization – specifically industrialization – the association between the father’s occupational status and the son’s occupational status decreases. Parents’ direct influence on the occupational decisions of their children is believed to decrease due to specialization of labour. With new demands for specialized and longer training, parents become unable to qualify their own children for work on the job market (Treimann 1970). Likewise, as old trades declined and more complex

⁹ “Contexts” are operationalized as municipalities in a certain year, e.g., Utrecht in 1880; Amsterdam in 1881.

occupations emerged, sons could no longer follow in their father's footsteps. Moreover, when skills and achievements gain primary importance, employers increasingly choose on the basis of merit, rather than social background. Educational expansion is, according to Treiman (1970), a concomitant of industrialization. The likelihood that working-class children would choose occupations different from those of their fathers increased with educational expansion. Information-sharing about job opportunities also changed. With the rise of mass communication, e.g., the spread of newspapers, people could access information about opportunities across a broader geographic area. Hence, sons became more likely to take jobs different from those of their fathers. In addition, mass transport made it affordable to travel the extra mile for work.

In sum, the processes discussed above contributed to a decrease in the influence of social background on career success.

Hypothesis 2: In contexts that were socio-technologically more advanced, high-status social background was less related to successful occupational careers.

According to Treiman industrialization, educational expansion and other modernization processes were accompanied by a spread of universalistic values. Such values stress that all individuals are equally worthy and should be judged on their efforts and skills rather than on ascriptive characteristics such as social background. No direct effect of the spread of universalistic values on career success is expected. However, we do predict changes in values to influence career attainment by hampering or increasing the impact of individual characteristics. Non-industrial societies often are described as traditional and static. In such societies, ascribed characteristics are primary determinants of individual career success (Kerr *et al.* 1960). In industrial and industrializing societies, on the other hand, people are believed to embrace universalistic values and to eagerly seize new opportunities. The spread of universalistic values is associated with a decrease in the importance of social background (Kerr *et al.* 1960, Inkeles 1960, Form 1979). In societies that hold universalistic values, workers and employers are believed to be less influenced by social background. An increase in the demand for better-skilled workers prompted employers to recruit efficiently based on workers' achievement. In consequence, individuals from high-status families lost some of their social privilege. Workers also became more inclined to choose occupations different from those of their fathers. Modernization theory assumes that the separation of household and workplace weakens the influence of family members on individual decision-making. Classical modernization theorists such as Inkeles and Smith (1974:311) describe this development as follows: "The modern man's sense of efficacy is reflected in his belief that, either alone or in concert with others, he may take actions which can affect the course of his life and that of his community... and in personal matters by his choosing the job and the bride he prefers even if his parents prefer some other position or some other person." Individuals

working outside of their parents' homes are able to provide for themselves, and establish their own households. Thus, an increase in personal autonomy is expected to lessen the influence of social background on career success.

Hypothesis 3: In contexts where universalistic values were more widely adopted, high-status background was less related to successful occupational careers.

Basic schooling was an important influence on career success, because it enabled individuals to be more productive and to perform a wider range of tasks (Knippenberg 1986, Boonstra 1993). Educational expansion was one of the significant social changes that occurred in the second half of the 19th century. Even before the first mandatory-schooling law was introduced in the Netherlands in 1901, primary school attendance rates were high. Yet, very few pursued secondary education in this period (Mandemakers 1996).

A lack of basic education makes it more difficult for an individual to attain a first job with a relatively high status. Moreover, employers face lower training costs when they hire more educated workers (Sicherman and Galor 1990, Kerckhoff 1995). Basic schooling is a “positional good;” therefore, it is more detrimental to be uneducated when the majority has completed primary education than when the majority is uneducated. In communities where work in general became more complex, the demand for skilled labour increased. Industrialization hindered the ability of uneducated individuals not only to find high-status first jobs, but also to access job training and otherwise improve their social status over time. Further, individuals without basic education could not capitalize on the new information channels opened by mass communication, and thus remained uninformed about job vacancies.

Hypothesis 4: In contexts that were socio-technologically more advanced, a lack of basic education placed a greater limit on occupational career success.

The idea that marriage influences career success is found in many studies (Janssens 1997, Vanhaute 2002, Pfau-Effinger 2004, van Poppel, van Dalen and Walhout 2009). According to all of them, men's occupational status increases following marriage. When men get married and have children, they take on greater responsibility and are expected to provide for their families. Married men are assumed to invest more time and effort in their work and therefore to become more productive (Horrell and Humphries 1995, Lewis 2001, Kalmijn and Luijkx 2005). Furthermore, employers favour married men, because they are believed to be more committed to their jobs than their single counterparts. Employers are also less prone to fire married men, as this is considered less fair than firing men with fewer responsibilities. Thus, married men are predicted to have more successful careers than unmarried men (Korenman and Neumark 1991).

If universalistic values become more important men will be judged and rewarded increasingly based on their efforts and productivity rather than on their marital status. Employers will care less about the marital status of men. In contexts in which universalistic values are more pronounced, men may themselves feel less responsible to act as sole providers for their families. Employers are also less likely to discriminate on the basis of marital status. Hence, in places in which values were more universalistic, we predict marriage to have had a weaker effect on career success.

Hypothesis 5: In contexts where universalistic values were more widely adopted, marital status was less related to occupational career success.

4.3 Data, method and variables

4.3.1 Data

The Historical Sample of the Netherlands (HSN) provides information about the occupational careers of a representative sample of the Dutch population in the nineteenth and twentieth centuries. The HSN is an excellent source for the study of men's careers in different regions and over time. The HSN includes a sample of birth registers from the period 1812-1922 and is supposed to eventually include the life courses of 78,000 individuals. The main individual level data sources are birth certificates, death certificates and marriage certificates. In addition, information from population registers is included. These were introduced to continuously document household composition and the place of residence of each individual living in the Netherlands. With the occurrence of any vital life event (e.g., marriage, the birth of a child, relocation to a different municipality), information on the individual concerned and, if applicable, his or her family, was recorded. This means that the amount of occupational information available for a given individual depends on the number of vital events the individual experienced, and not on the occupational career itself (e.g., number of different occupations held).

Because data collection is on-going, we will use a sub-sample (Data Set Life Courses Release 2010.01), which consists of information about individuals born between 1850 and 1922. The data include respondents' date of birth, literacy, fathers' occupations, changes in residence and employment. Figure 4.2 shows that the occupational information in the data set represents almost all of the regions of the Netherlands. The number of occupational measurements recorded differs across municipalities because the HSN is a sample of birth certificates drawn from the whole country.

Studies of social mobility in preindustrial or industrializing societies are challenged when the society in question is dominated by one very large occupational group (usually farmers).

This is not an issue for the period and sample we analyse. During this period in the Netherlands, employment rates decreased most in the agricultural sector (van Zanden and van Riel 2000:352). In consequence, only 18% of the measurements of occupations in the sample are related to farming. Furthermore, occupational titles allow for the distinction between jobs of varying statuses within the farming sector. According to the status scale that we use, farm owners have a score of 60.9, whereas farm labourers have a score of 32.1. The scale ranks a number of other farm employees including tree nursery workers (58.0), pastorals (48.4) and milkers (42.9).

Because we aimed to study occupational careers, we restricted our sample by age to include individuals most likely to belong to the working population (i.e., people who are at least 15 years old; we did not set a maximum restriction on age). We studied the period from 1865-1928. For the first part of our observation period until approximately 1885, most of the data refer to men aged 15-35, who are in the first half of their careers. The data from later in the observation period reflect the careers of men of all age groups. Some of the men observed in the later time period did not complete their occupational careers by 1928, so that their full occupational life-course is not captured in our dataset (see figure 4.3).

In the following sections we will return to this issue and discuss possible consequences.

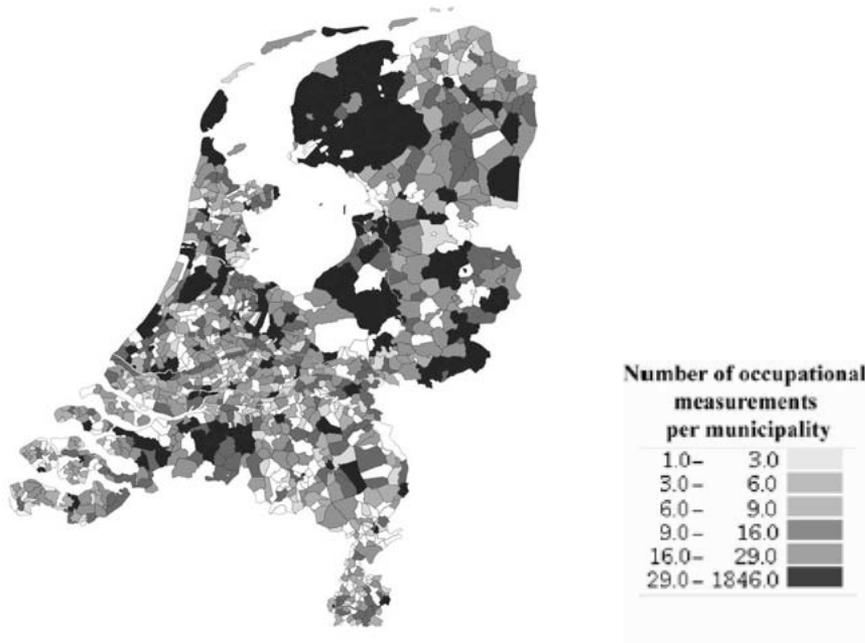


Figure 4.2 Geographical distribution of individual occupational information, source: HSN

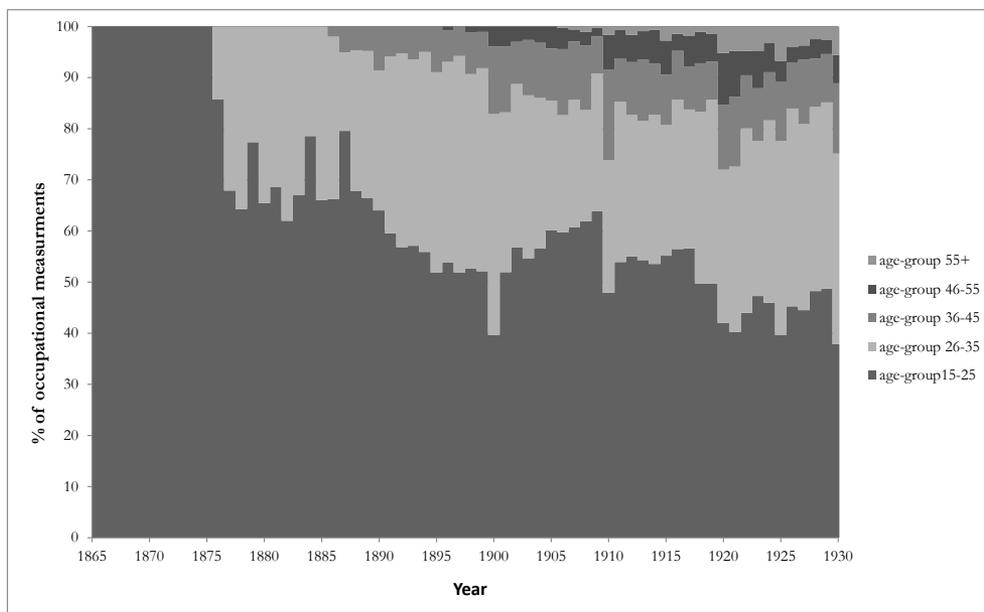


Figure 4.3 Age distribution of respondents by year, source: HSN

4.3.2 Data structure and model

We estimate growth models in which we predict that differential career success is affected by several individual and contextual determinants (Schulz and Maas 2010). We expect career success to increase with age until a certain point toward the end of a given career. We differentiate two aspects of career success: 1) at which level of occupational status the career starts and 2) how fast occupational status grows over the course of the career.

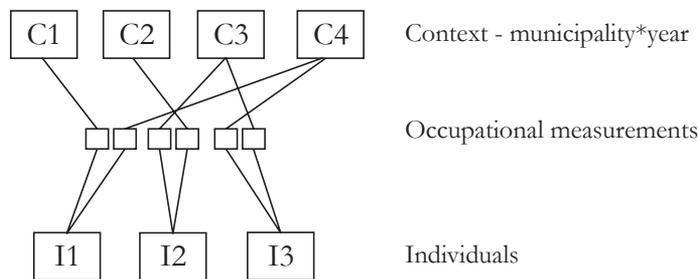
These two aspects are affected by time constant individual characteristics, e.g., basic schooling, and time varying characteristics, such as marital status and time varying regional characteristics, including levels of industrialization and educational expansion. When testing our hypotheses we will differentiate between firstly, effects on the level of status at the start of the career and secondly, effects on the speed of growth of status over the course of the career.

The HSN data include multiple measurements of an individual's occupational status over his life course. Moreover, residential location was recorded every time an occupational measurement was registered. We created a "context" variable, which reflects year and municipality. In our analyses, we include indicators of modernization at the "context" level: for example, the number of students pursuing secondary education in Utrecht in 1888 or whether there was a train station in The Hague in 1865.

We use seven different indicators to measure modernization processes on the context level. Three of them only cover a part of the research period, for example information on the number of steam engines is only available in the period 1865-1890. Therefore, some of the analyses only include a selection of careers of men. In the variable section we will discuss which periods the indicators cover and how the number of occupational measurements changes accordingly. Moreover, if necessary in the result section we will discuss possible consequences of such selections for the interpretations of the results.

We use cross-classified models, because our measurements of occupational status are both nested in individuals and in varying “contexts”. We cannot employ a classical hierarchical nesting structure because all occupational measurements of a given individual are not necessarily nested within the same “context”, i.e., people move during their occupational career. Figure 4.4 illustrates a simplified version of our data structure.

Strictly speaking, the nesting of occupational measurements within municipalities and across years constitutes a cross-classified structure in itself. Measurements of one municipality in different years are more similar to each other than measurements of two different municipalities taken in the same years. In addition, two measurements of modernization taken in two succeeding years have more in common than two measurements of modernization processes taken ten years apart. However, software limitations make it difficult to estimate models that take this structure into account. Therefore, we do not incorporate this additional structure (see also Zijdemans 2010). Note however that this additional structure is partly already taken into account by including variables on the municipality level. These indicators include the year in which the occupational measurement was taken and yearly measured modernization indicators such as educational expansion and industrialization.



- Individual 1: one occupation in Context 1, one in Context 4
- Individual 2: one occupation in Context 3, one in Context 2
- Individual 3: one occupation in Context 3, one in Context 4

Figure 4.4 Three individuals, each with two occupational observations in a total of four contexts

4.3.3 Dependent variable

Occupational status: It is difficult to assign social positions to individuals at certain points in their careers. Coding for social position over two centuries and across different regions – within one nation or internationally is even more challenging. For a long time, inconsistent occupational terminology hindered cross-national and longitudinal comparisons of occupational status (van Leeuwen, Maas and Miles 2004). Such comparisons became possible, however, with the development of the Historical International Standard Classification of Occupations (HISCO) (van Leeuwen, Maas and Miles 2004). This measure is based on the 1968 International Standard Classification of Occupations created by the International Labour Office (ISCO68 1969). All of the occupational data we analyze has been classified using HISCO (van Leeuwen, Maas and Miles 2002). In order to analyze occupational status, we used the recently developed historical status scale, HISCAM (Lambert *et al.* 2013). The same estimation techniques were used for the development of the HISCAM scale as for the contemporary CAMSIS scales. These scales are built with the assumption that patterns of social interaction (e.g., marriages) between people from different occupational strata are representative of the overall structure of occupational stratification. The HISCAM scale models an estimate of the occupational stratification structure based on 1.5 million marriage records from 6 different countries (Britain, Canada, France, Germany, the Netherlands and Sweden) from 1800 to 1938.

Our dependent variable is occupational status measured at the individual level. The HISCAM scale that we use to measure occupational status, ranges from 1 to 99, with higher values indicating higher occupational status. Servants, for example are assigned a HISCAM-score of 10.6. Lawyers receive the highest possible score of 99.0 and tailors are assigned a middle position with a score of 49.7.¹⁰

4.3.4 Independent variables

Experience: We approximate occupational experience using the age of the respondent. Each time information was updated in the original sources (for example, on marriage or death certificates), the individual's age was also noted. We assume that individuals begin occupational careers at or after the age of 15. Thus, we subtracted 15 from the age of the respondent and divided the result by ten. We added a quadratic term of career experience to the analyses to take into account that the effect of work experience on social status declines over an individual's occupational career.

¹⁰ In the HISCAM scale it is assumed that the relative status positions of occupational groups do not change over time. A test of this assumption showed that changes in status are relatively small and unsystematic, see: Lambert *et al.* 2013.

Basic schooling: As a proxy for whether a given respondent received primary education, we created a variable showing whether he was able to sign his marriage certificate (1) or not (0). One limitation of this variable is that it is undefined for people who never married. We added a dummy variable indicating individuals who were never married in order to avoid losing these cases. In our models, we treated this variable as a time-invariant characteristic.¹¹

Father's occupational status: As with the respondents' occupations, the occupations of respondents' fathers were coded into HISCO and then assigned a HISCAM-score. If a respondent's father is known to have held more than one occupation, the data on father's employment taken closest to the respondent's birth was used.

Marital status: The HSN data include information on who married when. Being married is treated as a time variant characteristic. We coded all points in time before marriage as 0, and all points after marriage as 1.

4.3.5 Contextual characteristics

Post office: We study the spread of mass communication with a variable reflecting whether or not a post office was present in a given municipality in a given year. Post offices held special importance in the Netherlands in the late nineteenth and early twentieth centuries. Letters, telegrams, fashion brochures and newspapers were distributed by post offices. We derived data on post office locations from annual reports by the Staatsbedrijf der Posterijen, Telegrafie en Telefonie (PTT) [Public Enterprise Post office, Telegraphs and Telephone] (see also Zijdemans 2008).¹²

We used two indicators for industrialization in our analyses. For the period from 1865 to 1890, we employed data on steam engines; from 1900 onward, we used municipality-wide investments into industrial facilities. Both indicators closely relate to Davis's definition of industrialization as the use of mechanical equipments and mechanized energy (Davis 1955).¹³

Steam engines: We found information on steam engines in the "Registers of the Dutch Department for Steam Engineering," which are essentially security reports on steam engines.

¹¹ In chapter 3 the variable basic schooling included an additional category for men and women who did marry but their marriage certificate is (still) missing. Additional analyses (not shown) revealed that the substantial results with the additional category are very similar. Therefore we decided not to include this category in the analyses of this chapter.

¹² The data on the presence of post offices cover the period up to 1918. By then almost all of the municipalities had a post office and only after 1930 some of the post offices closed down again (Hogestegger and Kramer 1995).

¹³ We have tried to combine the two measures of industrialization to create a variable that covers the whole period under study. However, the two measures do not highly correlate. Investments into industrial facilities such as electricity might not have replaced steam engines by 1900 but supplemented steam engines. Therefore presumably although measuring the same concept, they do not correlate highly. For that reason we present separate analyses for the period up to 1890 and after 1900.

Lintsen and Nieuwkoop (1989-1991) provide a description of these registers, with information on steam engines up to the year 1890. It was not possible to calculate the actual amount of horse-power or number of steam engines in use in a given municipality and year, because the registers do not provide sufficiently detailed information. Therefore, we follow Zijdemans' (2010) use of the number of steam engines ever purchased in a given municipality in a given year. In the analyses with steam engines only occupational measurements up to the year 1890 are included. Therefore the number of occupational measurements is 2386 in models which include this variable.

Industrial investments: For the period after 1900, we used information on municipality investments in industrial facilities as an indicator of industrialization. The data reflect municipality budget investments in several industrial facilities in 1900, 1905, 1910, 1915, 1920, 1925 and 1928. These facilities include, among others, gas utilities, electricity, sewage pipes, and telephone wires. These statistics were published by Statistics Netherlands in "Bijdragen tot de statistiek van Nederland CBS" [Statistics Netherlands] (CBS 1900-1928). The official reports on industrial investments of municipalities present a selection based on the number of inhabitants in municipalities. Up to 1915 only municipalities over 10,000 inhabitants are covered by the sources, in the years after 1925 only municipalities above 20,000 inhabitants are covered. In addition, in all years a selection of municipalities with a lower number of inhabitants was included. Aim of this selection was to include municipalities from different sizes that are representative of the province. Therefore, small but very rich municipalities and small municipalities in especially bad financial conditions were not included in the official reports. We estimated industrial investments for the years between 1900 and 1928, for which no data were available so that we could analyse the occupational measurements from these years as well. Our estimates are the weighted means of investment numbers from the years for which information on number of investments was retrieved. For example, our estimate of the industrial investments in 1902 is equivalent to the sum of three times the industrial investments in 1900 and twice the number of industrial investments in 1905, divided by five. Only municipalities are included for which data in all reports over the seven sample years are available. In the period from 1900 to 1928 the occupational data include 14716 occupational measurements. Because of the selection of municipalities, in models that include the variable industrial investments the number of occupational measurements drops to 5263.

We used two indicators for mass transport that refer to mechanized transport in our analyses. For the whole period, we employed data on presence of train stations; from 1900 onward, we used information on car density.

Train station: We retrieved data on the years that each train station in the Netherlands opened and closed from the website <http://www.stationsweb.nl/>. The data reflect the period from 1865 to 1928. Using this information, we created a variable that indicates whether there

was a train station present (1) or not (0) in a given year.¹⁴

Car density: Our “car density” variable reflects the number of cars per 1000 inhabitants that were present in a given municipality. We retrieved this information from Statistics Netherlands (see Wolf 2010) and the variable refers to the years 1900, 1905 and 1928. For the years in which no information on car density was available, we used the same estimation procedure as for industrial investments. Because car density is measured from 1900 onwards and it is included in the models which also include industrial investments, the number of occupational measurements in models with this variable drops to 5263.

Educational expansion: To capture educational expansion, we used a municipality-level measure of the number of students enrolled in secondary education per 100 inhabitants. Even before the first mandatory schooling law as introduced in 1901 participation in basic schooling was high in the Netherlands. Therefore rates in secondary education are a better indicator for educational expansion than participation in basic schooling. We consulted the annual reviews “Verslagen voor het hoger, middelbaar en lager onderwijs” on Dutch education for the period from 1860 to 1930 to obtain information on educational expansion. Every five years, the number of students registered for any type of secondary education was recorded at the municipality level.¹⁵ Although Gymnasia (secondary schools) students are registered in the reviews of ‘higher education’, we included them, because they prepare for higher education (Mandemakers 1996). We calculated estimates for the years between 1865 and 1928, in which no enrolment numbers were available by using the same method we employed to estimate missing numbers of cars and industrial investments.

Secularization: We measured the spread of universalistic values by the number of people who indicated that they had no religious affiliation. This is only an indirect measure. However, it can be argued that religious – in this case Christian - people’s values are not universalistic in at least two ways: they distinguish people of their own religion from others, and they place great emphasis on a traditional family life (Wilson and Sandormirsky 1991). Especially the latter may affect the relevance of marital status for men’s career success. During the period under study, religion was highly important to many people in the Netherlands. But as early as in the second half of the nineteenth century a process of secularization started which continued after 1928, the end of the period under study. Knippenberg (1999) describes the steady increase in secularization as an evenly progressing trend and attributes it to a number of modernization

¹⁴ We have conducted additional analyses using a measure of provision of mass transport (train station) and mass communication (post office) that takes into account the presence of these provisions in surrounding municipalities (results not shown). The effects of these variables are very similar to the effects of the dummy variables but the standard errors are much larger. This indicates that creating such complex variables in a valid and reliable way is a difficult task.

¹⁵ The school types included are the following: Gymnasium, Burger Avond School, Hogere Burger School, Middelbare Meisjes School, Tekon- en Ambachtsscholen, Vakscholen, Kookscholen, Kunstscholen, Hogere Burger School-Lyceum.

processes. Knippenberg argues that institutional differentiation, educational expansion, poor relief and the rise of the modern welfare state all contributed to the decrease in religious affiliation across Dutch society. We derived our secularization variable from the Historical Ecological Database of Dutch Municipalities for every tenth year. For a description of the data, see Beekink *et al.* (2003). We calculated estimates for the years between 1865 and 1928, in which no numbers on people without religious denomination were available by using the same method we employed to estimate missing numbers of cars.

4.3.6 Contextual control variables

Urbanization: We measured urbanization by calculating the population of an individual's home municipality in thousands of inhabitants for the years when his occupation was registered. We derived data on urbanization from the Historical Ecological Database (HED) and the Historical Database for Dutch Municipalities (HDNG) for the period between 1865 and 1928. In all of our models that include indicators of modernization, we control for urbanization.

Year: We controlled for year in all of our models.

See tables 4.1 and 4.2 for descriptive information on the variables we used in our analyses and correlations between the contextual variables.

Table 4.1 Summary statistics for time-invariant and time-varying variables

Time-invariant variables (N=7043)	Period	Min	Max	Mean/%	S.d.
Basic Schooling	1865-1928				
No				1.10	
Yes				68.39	
Not known (never married)				30.53	
Father's Occupational Status (HISCAM)	1865-1928	10.60	99.00	46.80	11.79
Time-varying variables (N=19244)					
Dependent variable: Occupational status (HISCAM)	1865-1928	10.60	99.00	49.47	13.94
Experience/10	1865-1928	0	6.00	1.18	0.97
(Experience/10) ²	1865-1928	0	39.00	2.40	3.71
Married	1865-1928			39.52	
Regional Indicators					
<i>Communication</i>					
Post office (1/0) (N=8072)	1865-1928			48.24	
<i>Educational expansion</i>					
Number of students per 100 inhabitants (N=8072)	1865-1928	0	14.14	0.48	0.90
<i>Transport</i>					
Train station (1/0) (N=8072)	1865-1928			47.17	
Car density per 1000 inhabitants (N=869)	1900-1928	0	13.25	3.35	2.77
<i>Industrialization</i>					
Steam engines per 100 inhabitants (N=1306)	1865-1890	0	1.65	0.16	0.28
Investments in industrial establishments per 100 inhabitants (in 1000 Guilders) (N=869)	1900-1928	0	10.94	1.42	1.84
<i>Community Values</i>					
Secularization per 100 inhabitants (N=8072)	1865-1928	0	44.76	2.92	4.32
<i>Control Variable</i>					
Urbanization in 1000 (N=8072)	1865-1928	0.30	743.40	17.77	57.77

Table 4.2 Correlations between contextual indicators of modernization

	Population	Post office	Train station	Secularization	Industrial investments	Educational expansion
Post office	0.236** (N=8072)					
Train station	0.230** (N=8072)	0.494** (N=8072)				
Secularization	0.150** (N=8072)	0.179** (N=8072)	0.107** (N=8072)			
Industrial investments	0.103** (N=869)	0.070* (N=869)	0.018 (N=869)	0.174 (N=869)		
Educational expansion	0.172** (N=8072)	0.447** (N=8072)	0.412** (N=8072)	0.149** (N=8072)	0.272** (N=869)	
Steam engines	0.190** (N=1306)	0.306** (N=1306)	0.379** (N=1306)	0.034 (N=1306)		0.376** (N=1306)
Car density	0.067** (N=869)	0.178** (N=869)	-0.013** (N=869)	0.006** (N=869)	0.283** (N=869)	0.344** (N=869)

** : Correlations are significant at the 0.01 level (2-tailed).

4.4 Results

Tables 4.3-4.6 display the results of our cross-classified multilevel models of men's occupational status. Models 0-4 present the direct effects of individual characteristics and modernization indicators on men's social status. The "null model" (model 0) shows that most of the variance in occupational status (74%) is found between men [$143.790 / (8.854 + 143.790 + 41.417)$]. We found considerably less variance (22%) in the occupational status of a given individual over the course of his working life ("within individuals"). Four per cent of the variance in men's occupational status can be attributed to context. Although variance at the context level is quite small, it is statistically significant, as is the variance at the other two levels.

Model 1 includes only individual predictors. It shows that men gained status with increasing job experience. For every 10 years of career experience, men's status increased by about 1.6 status points. In addition, we found the squared experience term to have a significant effect, indicating that men's occupational status decreases toward the end of their careers. The estimated top of occupational careers of men is reached at age 37 [$(1.616 / 0.720) * 10 + 15$].¹⁶

An increase of father's status is associated with a half-point increase of his son's status. Men who did not complete basic schooling had on average about a 4.9 points lower status than men who did pursue primary education. Married men did not have higher status as compared to men who were not married (yet). In all the models except model 0, we included the variable "year" as a control. The significant positive effect of "year" indicates that if we take the characteristics of men into account, there is some evidence for an overall movement towards more successful careers. With the passing of every 10 years, the average occupational status increased by 1.31 status points. Adding individual predictors reduced the variance between individuals' career status scores from 144 to 107; this addition reduced the variance at the context level from almost 9 to 4. The variation within individuals slightly increased from model 0 to model 1 from 41 to 42.¹⁷

In model 2, we added the modernization indicators "post office," "train station," "educational expansion" and "secularization." The presence of a post office, the presence of a train station, and educational expansion were associated with higher occupational status, however, the effects were rather small. In municipalities with a post office, men's occupational status scores were on average one point higher than in municipalities without post offices. Men in municipalities with a train station had status scores that were 0.6 points higher than men

¹⁶ The peak of status in occupational careers is defined as the age at which the slope of the curve is zero. This is calculated as follows: $(1.616 / 0.720) * 10 + 15$, in which 1.616 is the main effect of age divided by 10, 0.720 is the effect of age squared divided by 10 multiplied by 2, 15 is added because the careers start at the age of 15.

¹⁷ In contrast to standard regression models in multilevel models the variance can increase when predictors are added. More variation in occupational status over the course of the career becomes visible after adding predictors on the individual level (for details see Gelman and Hill 2006:480).

in municipalities without a train station. Every additional secondary school student per 100 inhabitants was associated with an increase of men's status by almost half a point. As expected, secularization had no significant effect on men's occupational status.

Before turning to model 3 we note that as discussed above we have performed separate analyses for the years up to 1890 and after 1900 due to the availability of the indicators on the context level. The data for the first part of our research period mostly reflect the careers of younger men, whereas our data on the later period cover the careers of men of all ages. Note also that the number of occupational measurements is affected by this selection.

The number of steam engines, an indicator of industrialization, was only measured in the period from 1865 to 1890. The number of steam engines had no significant effect on men's social status. From among the other indicators of modernization, only the direct effect of educational expansion remained significant. The effect of educational expansion is considerably stronger in the early research period (1.358 points in model 3) than in the later period (0.288 ns., model 4), this may suggest that when educational expansion was less spread it had a stronger effect on men's occupational status to live in a context with higher rates of secondary education. Alternatively this finding might indicate that at the beginning of men's career educational expansion had a stronger effect on men's status.

Model 4 estimates the effects of industrial investments and car density on men's occupational status. Both indicators are available only for the period after 1900; therefore, model 4 employs a limited selection of occupational measurements in the period from 1900 to 1928. Car density and industrial investments did not significantly affect men's social status between 1900 and 1928. Whereas living in a municipality with a post-office or a train station did not affect career success of men in the early period, it clearly did so between 1900 and 1928.

The second way to test hypothesis 1 is to analyse the effects of modernization indicators on the speed of growth of men's status over the course of their careers. Models 6-8 present interaction terms of the indicators of modernization and experience. Men in contexts with a post office (model 6) and more steam engines (model 7) enjoy a higher occupational status at the beginning of their careers but a slower increase in status over the course of their careers. The presence of a post office, which has a positive main effect of almost two (1.885) status points, decreased the speed of growth in status by 0.719 points per 10 years. Thus, over a period of 26 years ($1.885/0.719=2.6$), men in contexts with a post office lost the advantage in status they enjoyed over men who began their careers in a context without a post office. In a municipality with an average number of steam engines, men begin their careers with a higher status (4.461 points) than men in municipalities with fewer steam engines, but every additional 10 years of experience, their increase in status is 4.093 status points less. Thus, these men experience slower growth in occupational status over the course of their career. Also, men in contexts with more industrial investments had a slower increase in status over the course of their career, while

Table 4.3 Individual and context effects on men's occupational status

	Model 0	Model 1	Model 2	Model 3	Model 4
	1865-1928	1865-1928	1865-1928	1865-1890	1900-1928
	S.E.	S.E.	S.E.	S.E.	S.E.
Fixed part					
Constant	49.195 **	18.287 **	18.621 **	18.442 **	20.560 **
Experience/10	0.162	0.664	0.669	1.785	3.178
Experience/10 ²		1.616 **	1.736 **	4.633 **	1.403 **
Father's status		-0.360 **	-0.374 **	-1.169 **	-0.256 *
Married (1/0)		0.526 **	0.502 **	0.506 **	0.410 **
<i>Basic schooling</i>		-0.098	-0.156	-0.131	-1.142 **
Yes	Ref.	Ref.	Ref.	Ref.	Ref.
No basic schooling		-4.859 **	-4.893 **	-6.992 **	-4.079 **
Not known (never married)		-0.323	-0.272	-0.874	-0.722
Modernization Indicators					
Population in 1000s		0.004 **	0.001	0.008 **	0.003 **
Post office (1/0)		1.134 **	0.245	1.145	4.183 *
Train station (1/0)		0.615 *	0.258	0.509	6.238 **
Educational expansion per 100 inhabitants		0.435 **	0.109	1.358 **	0.288
Secularization per 100 inhabitants		0.000	0.019	-0.009	0.005
Steam engines per 100 inhabitants				1.661	
Industrial investments per 100 inhabitants					0.029
Car density per 1000 inhabitants					0.239
Year		0.131 **	0.107 **	-0.035	0.019
Random part					
Year/Municipality	8.854	4.351	0.024	9.008	0.085
Between individuals	143.790	107.469	102.695	127.470	115.770
Within individuals	41.417	42.205	45.973	29.677	33.911
-2 log likelihood	133743.221	133287.868	128279.913	14824.843	36565.163
<i># of units:</i>					
Year/municipality	8072	8072	8072	1306	869
Individuals	7043	7043	7043	1155	2485
Occupational measurements	19244	19244	19244	2386	5263

*p<.05; **p<.01; (two-tailed tests). Note: Experience starts to count at age 15, year starts to count at 1865.

the positive main effect of industrial investments was not significant (model 8). With every additional 10 years of experience, men's increase in status is 0.157 status points less.

Hypothesis 1, which states that men in contexts with greater socio-technological changes have more successful occupational careers, is only partially supported. A number of modernization indicators indeed had positive significant effects on the occupational status of men at the beginning of their career. However, the second aspect of career success, the faster increase in status over the working life was not found. On the contrary, men's status in context with post office, more steam engines and more industrial investments grew slower.

Models 5-8 test hypotheses 2 and 3, which predict that the effect of father's status decreased with socio-technological modernization. Before we discuss the models that test hypothesis 2, we present in model 5 the trend of the effect of father's status over historical time as well as during individual men's careers. The effect of father's status decreased with historical time, father status had no effect on the speed at which status grew over the career, however.

Only the interaction between father's status and the presence of a train station is significant. In a context with a train station, the effect of the father's status was 0.05 points less than in a context without a train station. In sum, when we control for trends over historical time and over the course of men's careers, modernization processes hardly changed the effect of the father's status on men's status.

Hypothesis 3, which predicts that the spread of universalistic values is associated with a decrease in the effect of the father's status, is not supported. In model 6-8 a change in the percentage of secularized people was not associated with a change in the effect of the father's status on individuals' occupational status.

Hypothesis 4 states that a lack of basic schooling was more severe in contexts with more socio-technological change. Models 10-12 test hypothesis 4. First, we tested for trends of the effect of lacking basic schooling over historical time as well as during individual men's careers (model 9). In all preceding models there is a rather strong negative effect of lacking basic schooling on men's status. Model 9 shows that this effect develops over the course of men's working life. There was a small positive effect of lacking basic schooling at the start of the career (0.569, n.s.) but with increasing job experience this effect quickly turns negative. Men who lacked basic schooling experienced a significantly slower increase in social status over the course of their career: 2.752 points per 10 years. The positive interaction between lacking basic schooling and year indicates that with historical time, the negative effect of lacking basic schooling that emerged over the course of men's career slightly decreased.

Table 4.4 Interaction effects of experience and father's status on men's occupational status – experience and father's status

	1865-1928		1865-1928		1865-1890		1900-1928	
	Model 5	S.E.	Model 6	S.E.	Model 7	S.E.	Model 8	S.E.
Fixed Part								
Constant	46.745 **	0.264	22.712 **	1.012	40.697 **	1.962	32.854 **	10.935
Experience/10	1.754 **	0.205	2.373 **	0.249	4.991 **	1.335	-0.042	1.842
Experience/10 ²	-0.380 **	0.045	-0.389 **	0.046	-0.847 *	0.476	-0.234	0.117
Father's status	0.490 **	0.014	0.513 **	0.021	0.684 **	0.152	0.180	0.258
Married (1/0)	-0.228	0.181	-0.231	0.188	-0.342	0.556	-1.138 **	0.343
<i>Basic schooling</i>								
Yes	Ref.		Ref.		Ref.		Ref.	
No basic schooling	-4.817 **	0.304	-4.811 **	1.260	-8.068 **	1.993	-3.320	2.442
Not known (never married)	-0.401 *	0.205	-0.407	0.297	-1.358	0.791	-0.853	0.565
Trend of father's status over life course and time								
Year	0.107 **	0.009	0.102 **	0.009	-0.055	0.062	0.041	0.042
Father's status x experience/10	0.012	0.008	0.017	0.009	0.031	0.049	0.034	* 0.016
Father's status x year	-0.004 **	0.001	-0.004 **	0.001	0.003	0.005	-0.009 **	0.003
Modernization indicators								
Population in 1000s	0.004 **	0.001	0.005 **	0.001	0.012 **	0.004	0.003 **	0.001
Post office (1/0)	0.998 **	0.256	1.885 **	0.344	2.396 **	1.058	4.544	2.994
Train station (1/0)	0.563 **	0.263	0.631	0.337	1.326	1.022	6.223 **	2.140
Educational expansion per 100 inhabitants	0.468 **	0.112	0.511 **	0.172	1.047	0.718	0.176	0.435
Secularization per 100 inhabitants	0.005	0.019	0.032	0.027	0.008	0.169	-0.029	0.053
Steam engines per 100 inhabitants					4.461 **	1.736		
Car density per 1000 inhabitants							0.207	0.168
Industrial investments per 100 inhabitants							0.213	0.123

Interactions – experience/10									
x post office (1/0)	-0.719	**	0.180	-1.572	0.934	1.454	1.312		
x train station (1/0)	-0.168		0.176	-0.656	1.007	-0.213	1.144		
x educational expansion	0.011		0.087	0.025	0.767	0.032	0.217		
x secularization	-0.018		0.014	0.018	0.122	0.040	0.035		
x steam engines				-4.093	**	1.811			
x car density						-0.004	0.066		
x industrial investments						-0.157	* 0.075		
Interactions – father's status									
x post office (1/0)	0.003		0.023	-0.123	0.068	0.297	0.210		
x train station (1/0)	-0.046	*	0.022	-0.025	0.070	-0.069	0.152		
x educational expansion	0.003		0.009	0.048	0.048	0.024	0.021		
x secularization	-0.001		0.001	0.006	0.008	-0.003	0.003		
x steam engines				-0.090	0.100				
x car density						0.014	0.009		
x industrial investments						0.001	0.006		
Random part									
Year/Municipality	0.469			12.118		0.124			
Between individuals	132.411			128.746		101.913			
Within individuals	14.527			26.886		45.992			
-2*log-likelihood	137926.874			16037.973		36561.961			
<i># of units:</i>									
Year/municipality	8072			1306		869			
Individuals	7043			1155		2485			
Occupational measurements	19244			2386		5263			

*p<.05; **p<.01; (two-tailed tests).
Note: Experience starts to count at age 15, year starts to count at 1865, and the variables in the interaction terms are mean-centered, except for the variable experience/10.

We tested whether men without basic schooling suffered more in terms of status in municipalities with more socio-technological change by including the interactions of basic schooling and modernization indicators (models 10-12). None of the interactions with basic schooling is significant, thus the negative effect of lacking primary education did not vary with modernization processes.

Our final hypothesis predicts that in contexts where universalistic values were more widely spread, men's status will benefit less from marriage. Model 13 presents the trend with regard to the effects of being married. The effect of being married at the beginning of the career was negative (-0.925), however this effect refers to men aged 15, and thus not yet married. The positive interaction term of being married with experience indicates that the negative start effect of being married vanished over the course of the career and turns into a positive effect around age 35. With historical time there was a decrease in the effect, approximately with the same extent as the increase over the course of the career, namely 0.46 per 10 years. The effects cancel each other out, also the reversion of the effects in model 15 and 16 indicates this. The effect of marriage on men's social status did not vary significantly by the degree of secularization in models 14 or 15. Only in model 16, which includes men's occupational information from 1900 onwards and includes car density and industrial investments, there is a significant positive interaction between being married and secularization. This model includes predictions for men of all age groups. Younger men suffered from the negative effect of being married at the start of the career, and therefore for them the positive interaction means a decrease in the negative effect of being married with secularization. For older men, the negative start effect of being married has vanished over the course of their career and therefore they benefited more from being married, the more secularized the context they live in. Either way, this result does not support hypothesis 5.

4.5 Discussion and conclusion

In this chapter, we studied the effects of modernization processes on career success in the Netherlands in the late nineteenth and early twentieth centuries. We posed two research questions. First, we asked whether individuals in more modernized municipalities have higher-status careers and second, to what extent the influence of individual characteristics on career success varied according to regional and temporal differences in modernization. We used a unique data set, the Historical Sample of the Netherlands (HSN), to analyse the careers of more than 7,000 men in 847 municipalities over 63 years. The data refer to the careers of men from various regions in the Netherlands and reflect a broad range of occupations. We measured modernization processes at the municipality level. Socio-technological processes included mass communication, mass transport, educational expansion and industrialization. We analysed change in social values with reference to the degree of secularization over time.

We addressed our first research question by studying whether individuals begin their careers with higher social status and whether their status grows faster over the course of their lives in contexts with more socio-technological advancement.

In municipalities with more socio-technological advancement, careers began at a higher status level, but over the course of men's careers, this comparative advantage disappeared. Although men start their careers on a relatively higher level, their social status grew slower over the course of their career than that of men in less advanced municipalities. It seems that an overall upgrade across the occupational structure increased the level of status with which individuals began their careers, but did not continue to provide more opportunities for individuals to increase their occupational status over the course of their careers.

The second research question referred to possible variations in the effects of individual-level characteristics on career success due to variations in modernization processes. In our hypotheses on the effects of modernization processes on individual characteristics for career success, we considered social background, the lack of basic schooling and marriage. The effect of father's status was weaker in municipalities with a train station. Further, we found no effect of the other modernization indicators (post office, educational expansion, secularization, steam engines, industrial investment, car density) on the influence of individual characteristics (being married, basic schooling) on status attainment. The process of status attainment over the life course seemed to be untouched by modernization processes. Also in more modernized locations individuals from higher-status backgrounds had an advantage over individuals from lower-status backgrounds (Grusky 1983, Bourdieu and Passeron 1990).

In sum, we can support the claim of the logic of industrialism that modernization processes led to an increase in the average occupational status of the male population, but this increase was rather small and occurred only at the start of occupational careers. Our findings suggest that societal changes in terms of regional modernization processes have had restricted impact on individual mobility outcomes.

Our results provide interesting points for discussion. The counterintuitive finding that socio-technological modernization decreased the speed at which occupational status grew over the career is probably due to the type of occupations that men in further advanced municipalities had. Men who start working in factories as industrial workers may have had lower chances for upwardly mobile careers as compared to men in less advanced areas in which possibly an apprentice-master trajectory was still more common. The general skills of skilled workers trained in an apprentice-master trajectory could be applied across a wider range of jobs and therewith offered more chances for upwardly mobile careers.

Table 4.5 Individual and context effects on men's occupational status - basic schooling

	Model 9		Model 10		Model 11		Model 12	
	S.E.	S.E.	S.E.	S.E.	S.E.	S.E.	S.E.	
Fixed part								
Constant	23.491	0.571	23.461	0.471	17.571	2.181	25.536	3.295
Experience/10	2.042	0.230	3.107	0.298	4.192	1.609	1.649	0.463
Experience/10 ²	-0.390	0.046	-0.539	0.067	-1.507	0.719	-0.282	0.101
Father's status	0.497	0.011	0.479	0.008	0.496	0.025	0.411	0.021
Married (1/0)	-0.426	0.206	-1.746	0.269	0.061	0.803	-1.294	0.371
<i>Basic schooling</i>								
Yes	Ref.		Ref.		Ref.		Ref.	
No basic schooling	0.569	2.468	0.543	2.355	-7.950	9.623	0.803	16.774
Not known (never married)	-0.081	0.343	-0.335	0.530	-6.510	3.385	-14.130	5.942
Trend of basic schooling over life course and time								
Year	0.103	0.011	0.078	0.008	-0.112	0.063	0.015	0.047
<i>Basic schooling x experience/10</i>								
Yes x experience/10	Ref.		Ref.		Ref.		Ref.	
No basic schooling x experience/10	-2.752	0.922	-2.270	0.778	0.904	2.726	-1.869	1.926
Not known x experience/10	-0.424	0.227	-1.192	0.223	3.068	1.234	-0.352	0.447
<i>Basic schooling x year</i>								
Yes x year	Ref.		Ref.		Ref.		Ref.	
No basic schooling x year	0.197	0.088	0.127	0.067	-0.083	0.264	0.262	0.376
Not known (never married) x year	0.003	0.019	0.019	0.016	-0.101	0.117	0.005	0.087
Modernization indicators								
Population in 1000s	0.004	0.001	0.009	0.001	0.007	0.007	0.003	0.001
Post office (1/0)	1.078	0.245	1.934	0.306	2.340	0.937	2.828	2.564
Train station (1/0)	0.605	0.250	0.796	0.282	-0.026	0.957	4.067	1.820
Educational expansion per 100 inhabitants	0.427	0.113	1.192	0.160	2.554	0.866	0.471	0.341
Secularization per 100 inhabitants	0.004	0.020	-0.000	0.000	0.000	0.000	0.011	0.037
Car density per 1000 inhabitants							0.245	0.142
Industrial investments per 100 inhabitants							0.032	0.085
Steam engines per 100 inhabitants					1.723	1.336		

Interactions with basic schooling					
Post office (1/0)					
x yes	Ref.	1.796	Ref.	3.458	Ref.
x no basic schooling	-1.996		-3.096		-5.555
x not known (never married)	-0.333	0.551	0.160	1.790	4.888
'Train station (1/0)					
x yes	Ref.	1.822	Ref.	3.636	Ref.
x no basic schooling	-0.617		-1.334		4.035
x not known (never married)	1.093	* 0.529	0.385	1.742	9.330 *
Educational expansion					
x yes	Ref.	0.927	Ref.	3.615	Ref.
x no basic schooling	1.346		-0.121		-1.246
x not known (never married)	-0.293	0.288	-1.151	1.147	-0.614
Steam engines					
x yes	Ref.		Ref.		
x no basic schooling			3.481	7.745	
x not known (never married)			5.848	* 2.687	
Car density					
x yes					Ref.
x no basic schooling					-0.204
x not known (never married)					-0.039
Industrial investments					
x yes					Ref.
x no basic schooling					-0.028
x not known (never married)					-0.076
Random part					
Year/Municipality	1.844	0.032	0.008	0.267	
Between individuals	102.424	132.949	148.480	115.284	
Within individuals	44.981	14.526	13.129	34.322	
-2 log-likelihood	137922.245	125188.807	15055.672	36570.550	
<i># of units:</i>					
Year/Municipality	8072	8072	1306	869	
Individuals	7043	7043	1155	2485	
Occupational measurements	19244	19244	2386	5263	

*p<.05; **p<.01; (two-tailed tests).

Note: Experience starts to count at age 15, year starts to count at 1865, and the variables in the interaction terms are mean-centered, except for the variable experience/10.

Table 4.6 Individual and context effects on men's occupational status - married

	Model 13		Model 14		Model 15		Model 16	
	1865-1928	S.E.	1865-1928	S.E.	1865-1890	S.E.	1900-1928	S.E.
Fixed Part								
Constant	23.722 **	0.571	23.005 **	0.441	13.059 **	2.049	20.319 **	2.176
Experience/10	1.752 **	0.208	2.648 **	0.274	4.854 **	1.600	2.123 **	0.530
Experience/10 ²	-0.426 **	0.054	-0.709 **	0.077	-1.010 **	0.894	-0.610 **	0.146
Father's status	0.497 **	0.011	0.480 **	0.008	0.499 **	0.026	0.422 **	0.015
Married (1/0)	-0.925 **	0.308	-3.068	0.427	6.673	4.057	-5.048 **	0.840
<i>Basic schooling</i>								
Yes	Ref.		Ref.		Ref.		Ref.	
No basic schooling	-5.488 **	1.274	-6.222 **	0.740	-6.787 **	1.467	-4.022 **	1.540
Not known (never married)	-0.391	0.303	-0.755 **	0.251	-1.362 *	0.670	-0.862	0.500
Trend of married over life course and time								
Year	0.119 **	0.010	0.090 **	0.009	-0.171 **	0.058	0.008	0.049
Married x experience/10	0.533 **	0.185	1.337 **	0.253	-2.342	1.637	2.088 **	0.487
Married x year	-0.046 **	0.012	-0.030 *	0.014	0.222	0.132	0.024	0.044
Modernization indicators								
Population in 1000s	0.004 **	0.001	0.006 **	0.001	0.010 **	0.004	0.005 **	0.001
Post office (1/0)	1.038 **	0.247	1.801 **	0.247	2.269 **	0.800	4.324 **	1.537
Train station (1/0)	0.582 **	0.246	1.104 **	0.253	0.208	0.776	6.016 **	1.456
Educational expansion per 100 inhabitants	0.455 **	0.112	1.122 **	0.123	1.868 **	0.560	0.593	0.353
Secularization per 100 inhabitants	-0.002	0.020	0.056 *	0.026	0.121	0.106	-0.082	0.053
Steam engines per 100 inhabitants					3.556 **	0.172		
Car density per 1000 inhabitants							0.105	0.137
Industrial investments per 100 inhabitants							0.158	0.100
Interactions with married								
x secularization			-0.066	0.038	-0.407	1.194	0.264 **	0.088
Random part								
Year/Municipality	1.210		0.025		0.023		0.060	
Between individuals	102.558		133.035		133.020		136.137	
Within individuals	45.483		14.476		14.462		15.342	
-2 log-likelihood	137960.007		125140.308		15042.004		31307.853	
<i># of inds:</i>								
Year/Municipality	8072		8072		1306		869	
Individuals	7043		7043		1155		2485	
Occupational measurements	19244		19244		2386		5263	

*p<.05; **p<.01; (two-tailed tests).
 Note: Experience starts to count at age 15, year starts to count at 1865, and the variables in the interaction terms are mean-centred, except for the variable experience/10.

In addition, skilled workers bore the costs for their training so they had an incentive to recoup their investments by means of reaching higher status occupations during their career. In the more advanced regions growing shares of the industrial labour force probably were semiskilled workers who were working in mass production in factories. They gained firm-specific skills and companies wanted to recoup their investments in these workers by offering incentives to stay (Owen 2004). Thus, our findings may indicate that other indicators of a successful working life than occupational status changed with modernization. Research on formal careers in internal labour markets, such as in banks or other bureaucracies, shows that tenure provided an important incentive for individuals to commit to working for a given company for a longer period, even when doing so meant accepting few chances for upward mobility (see Stovel, Savage and Bearman 1996).

We did not find the expected effect of marriage on men's career success, nor a decrease in this effect as a result of value changes. In contrast we found no overall positive effect of being married, but a negative effect at the start of the career that vanished over the course of the career. This finding is puzzling because based on the theoretical account marriage is expected to increase men's status. More studies are needed to decide whether the occupational career of men who marry young – perhaps too young – indeed suffers from this. The lack of support for our hypothesis that the spread of universalistic values lead to a decrease in the effect of marriage may be due to our measure of value change. As discussed before, secularization does not perfectly cover the changes in values that we expect to be responsible for a decrease in the effect of being married on men's career. Desirable would be an indicator that more specifically measures to what extent the population adheres to universalistic values, i.e., to what extent they are convinced that people should not be judged on characteristics that are not directly relevant for performance, and therefore should not affect career success. As desirable as such an indicator is, it is difficult to realize in the absence of, for example, surveys measuring the predominant norms in society. Finally, the lack of an effect of secularization may have been caused by other processes that took place in Dutch society during the same period. Pillarization, the separation of Dutch society into “pillars” identified with the different political ideologies and religious denominations, probably strengthened the particularistic values of the majority of the population who was still religious. Furthermore, in an increasing number of families the man became the sole breadwinner, probably as a consequence of increased prosperity that allowed households to live on one income earned by a single provider. This may have stimulated married men to invest more in their occupational career, which in turn made them more successful.

Future research could address several limitations of this study to get a better understanding of the determinants of career attainment during modernization. Work is needed, for example, to improve the available measures of industrialization. As we argued above, it is extremely difficult to find an indicator for industrialization that covers a long time-span at a level as detailed as

the municipality. Although our indicators of industrialization each cover 25- 30 years, it would be highly desirable to find an indicator that covers a 63-year span. This is difficult, because the nature of industrialization changed, i.e., from the use of steam engines to the use of other mechanized labour, e.g., electricity.

Future research could also benefit from the use of gravity or spatial models (Wegener 2011) which take into account the levels of modernization in surrounding municipalities. These models could for example improve upon our measures of mass transportation by taking into account how well a municipality by means of the connections of surrounding municipalities is connected to the railway network.

Studying differences across occupations as reflected in variables other than status would extend our understanding of the changes to occupational careers that modernization brought about. Next to the perspective of tenure that higher status job at the beginning of the career might have offered, these jobs maybe provided better working conditions as well. A tentative hypothesis could be that tenure and improved working conditions were characteristics of a successful career to which modernization processes gave rise. Other sources such as biographical or autobiographical material could help to further study this question. They provide great detail on individual working lives that was not preserved in official registers or registers of companies (Humphries 2010).

Recent advances in historical sociology now allow to empirical test classical theories of status attainment during modernization. This study benefits from the advances, as we analyze career trajectories of a random sample of the male labour force nationwide. We demonstrate that looking at the influence of regional and temporal differences in modernization on career attainment is a fruitful approach. While modernization processes increase men's status at the beginning of their career, they have hardly impacted the processes of status attainment over the life course.

5

Career attainment of single women – individual and contextual influences on women’s career success in the Netherland, 1865 - 1928

This chapter is currently under review at an international journal.

5.1 Introduction

Recent advances in historical sociology now allow one to study the determinants of, and shifts in, social inequality and mobility in past eras. Processes of status attainment among the general population over an individual's life course, over time and between regions can be studied (van Leeuwen and Maas 2010). Yet the processes of status attainment of women during the great socio-economic changes of the nineteenth and twentieth centuries have seldom been addressed. Modernization processes are said to have caused major changes in individual social mobility outcomes. Industrialization is often understood to have brought many individuals economic and social success, and to have increased mobility rates (Kerr *et al.* 1960, Kaelble 1985, Mitch, Brown and van Leeuwen 2004). Whether the predictions of the logic of industrialism thesis hold for the careers of women is unclear however.

While sociological studies address the careers of the general population and the role of macro-societal changes, they have almost always focused on the careers of women after World War II. They have addressed questions concerning the emergence of sex-specific structures over the life course (Blossfeld 1987). And, more recently, questions concerning the effect of social origin and education on gender-specific class distributions have been examined (Grundert and Mayer 2012).

Historical research on the occupational attainment of women in the nineteenth and twentieth centuries provides us with in-depth descriptions and analyses, but most of the analyses are restricted to specific contexts, i.e., one sector, one city or one occupation. Furthermore, research often focuses on fertility and family factors in determining the labour market participation of women rather than on addressing the determinants of status attainment (Plantenga 1993, Pott-Buter 1993). But those studies that do address those determinants tend to point to interesting variations over the life course in the status attainment of women.

Such examples include the in-depth descriptions of the life courses of women in the Belgium town of Verviers (Alter 1988), an examination of the survival strategies of eighteenth- and nineteenth-century female middle-class proprietors in London (Kay 2004) and Moreels's (2008) study of the career development of mothers in Antwerp. Burnette and Stanfors (2012) provide an in-depth account of the occupations and incomes of women working in the Swedish tobacco industry at the end of the nineteenth century, and Bras (2004) studies young women in domestic service.

There has been no systematic study of how regional modernization processes influenced the careers of the female working population however. The central aim of this study therefore is to systematically study the careers of single women in the nineteenth and twentieth centuries by testing theories concerning individual and contextual influences on career success and the interplay between the two. Unlike research focusing on specific occupational groups and

localities, this study models and makes predictions relating to the careers of a random sample of the single female labour force nationwide. The careers of single women provide an interesting case study because this group is very similar to men in the sense that they acted as breadwinners for themselves and sometimes even for their children.

One reason why little is known about the careers of the female population in the nineteenth and twentieth centuries is that it is difficult to study the working lives of women in industrializing societies. Often, frequently used data sources – such as marriage certificates – do not include information on women's occupations because of their selective dropping out from the labour market after marriage and child bearing (Zijdeman 2009, Schulz and Maas 2010, van Leeuwen and Maas 2010). In order to circumvent this problem I have studied a group of women who were active on the labour market throughout their whole life, namely women who never married. This was a large part of the population. Engelen and Kok (2003) report that 14 per cent of women born between 1890 and 1909 were unmarried at the age of 50. There is some debate as to whether the main reason for this group of women remaining unmarried was an unintended consequence of postponing marriage. If that were true, our sample of single women might be a selective sample of women with characteristics that could also have influenced their career success, e.g., a lack of resources. For the Netherlands a number of socio-economic and demographic factors (including religion, social background and household composition) were found to influence the marital behaviour of women, indicating that remaining single was not simply a consequence of postponing marriage. Thus, our sample of single women is presumed not to have been biased by factors determining the likelihood of single women having a successful career.

Another challenge in studying the careers of women concerns the under-reporting of their occupations. The data commonly used to study the labour-force participation of women often have an additional 'filter', i.e., a census official who had his or her own ideas or instructions about whether women's occupations should be recorded. I use the Historical Sample of the Netherlands (HSN), which is an excellent data set for studying the careers of women because the sources upon which the HSN data are based are registers in which, usually, women had to state their occupation themselves – thus presumably largely eliminating the problem of female occupations being under-reported.

Because little is known about the careers of single women, our first aim is to describe the pattern of those careers. We will describe in which occupations single women worked and how the distribution of single women across occupational groups changed over time. Further, developments in the occupational status of single women over the life course and over historical time will be described. We will answer the following descriptive questions:

How might one describe the careers of single women in the Netherlands, 1865 to 1928?

Was there a trend towards greater career success among single women over the course of their career?

Was there a trend towards greater career success among single women over historical time?

To explain differences in career success between single women, we formulate hypotheses on the role of individual characteristics, i.e., human capital, social background and breadwinner responsibilities. Subsequently, differences in the contexts in which women pursued their occupational careers are examined. In doing so, we test a number of general hypotheses on the effects of modernization processes in the nineteenth and twentieth centuries drawn from classic studies by a number of stratification sociologists (Kerr *et al.* 1960, Treiman 1970). Whereas there has been some research on temporal differences in careers (e.g., Maas and van Leeuwen 2004, Barone and Schizzerotto 2011), regional differences have been almost completely ignored. I employ a multilevel research design in which theoretical indicators, such as communication, transport and social values, are measured at the level of municipalities, and may vary yearly. Finally, the interplay between individual characteristics and context will be addressed. The classical theories predict that regional modernization will have caused the effects of individual characteristics to vary according to differences in the degree of modernization (Treiman 1970). Whereas in non-industrial societies social background was a principal determinant of status attainment, in industrializing and industrial societies an individual's own qualifications and skills became more important for occupational attainment.

The explanatory questions read as follows:

How can we explain individual differences in career success?

Were women in modernized areas more likely to have successful careers?

Did the influence of individual characteristics on the career success of single women vary according to regional and temporal differences in modernization?

5.2 Theory

In this section we start by formulating hypotheses on the effects of individual characteristics on the career attainment of single women in the nineteenth and twentieth centuries. The individual characteristics considered are: labour market experience, social background and breadwinner responsibilities.¹⁸ Numerous previous studies have argued, and shown empirically, that these characteristics were important predictors of career success (Blau and Duncan 1967, Kerckhoff 1995). Previous research has also shown that individual characteristics such as human capital and

¹⁸ For men and women who married, information on literacy can be gleaned from marriage certificates; inevitably then, this information is not available for the single women studied here.

social background were important determinants of the career success of men in the nineteenth century and the first half of the twentieth century (Schulz and Maas 2012).

We continue by formulating hypotheses on the direct effects of socio-technological change and changes in values on the career attainment of single women. Theoretically we expect the expansion of mass communication, mass transport, education and industrialization to have affected career success in a similar way. They are therefore discussed together under the label ‘socio-technological change’. The effects of changes in values are expected to have been different from those caused by socio-technological change and are therefore discussed separately. Finally, we formulate hypotheses on how the influence of social background and breadwinner responsibilities on career success varied according to socio-technological change and changes in values.

Individual determinants of career success

Human capital

The most basic theoretical approach for relating individual characteristics to career success is human capital theory. It has been argued that those with more human capital, i.e., both formal and informal education and general and specific work experience, are more likely to get ahead than those who have less (Mincer and Polachek 1974, Becker 1975). Work experience makes employees more productive and signals to the employer that training costs will be lower than those for a worker with less experience. Experienced workers are also the last to be fired, because they are the most valuable to an employer (Mincer and Polachek 1974). Over the course of a life, individuals gain experience specifically with regard to their job or in general with respect to their occupation. Because the novelty of an employee’s additional experiences is finite, the effect of work experience is expected to decline with increasing age.

The most straightforward indicator of human capital is experience, but schooling too is an important indicator. Marriage certificates are a common source of information on an individual’s basic schooling, as the signatures of the individuals getting married were requested on the certificate. For single women this information is not available, obviously, and we are therefore restricted to using experience as an indicator for human capital. When discussing the effect of modernization processes on career success, more specifically the effect of educational expansion, we will return to the role of human capital accumulation through schooling in determining the career success of single women.

For the period being studied, the predictions of human capital theory may have been less applicable to the careers of women. In the Netherlands in the nineteenth and twentieth centuries the most common ‘career trajectory’ for women was to drop out of the official labour

market after marriage. Pure human capital theory predicts that single women who stayed in the labour market would be rewarded for their investment in human capital, just as men were. Theories of statistical discrimination predict that women would have fewer opportunities for successful careers, because employers compare the risk of turnover between men and women (Bielby and Baron 1986). Not being able to assess the dropout risk of each individual, employers regard women as being at risk of dropping out and prefer to hire a man. Thus, although the differences in the dropout rates and career aspirations of men and single women may in fact have been small, employers presumably treated single women in the same way as they treated women who eventually got married. Based on this assessment, employers might come to hiring and promotion decisions that differed from those predicted by human capital theory. Female workers might therefore be allocated jobs with low turnover costs, fewer opportunities for skill enhancement and, so, less chance of increasing their status.

For the formulation of my hypothesis, I follow the argumentation of human capital theory and will return to issues of statistical discrimination when discussing the effect of industrialization on women's career success.

H1: The occupational status of single women increased with work experience, but the rate at which it did so declined as the degree of experience increased.

Social background

According to the classical status attainment model the occupational status of the father is important for a son's occupational attainment (Blau and Duncan 1967). In pre-industrial societies in which skill formation often took place within the family household, the direct occupational inheritance was particularly important for men's career attainment (Treiman 1970, Zijdemans 2009). For women too, social background was an important factor in determining their career success, but, for them, family resources rather than direct occupational inheritance were important. In the second half of the nineteenth and twentieth centuries the occupational structure was highly differentiated by sex. Some jobs were performed mostly by women, others mostly by men. Women, in particular, tended to be concentrated in domestic and public service and trading (shop assistants); men tended to be concentrated in construction, transport, banking and insurance and the minerals industry (de Groot 2001: 44). Because of the sex segregation within the labour market, it is unlikely that women would have been able to follow in their fathers' occupational footsteps. For women, career attainment was more likely to have been

influenced by the general social and financial status of their family of origin.¹⁹

Higher-status families have more resources to support the educational and occupational attainment of their children (Breen and Jonsson 2005). Single women from higher-status families were more likely to participate in advanced schooling because their parents could more easily afford to forego the earnings of their children during the time they were at school. From the 1860s onwards women could choose from a range of forms of secondary and vocational education²⁰ that qualified them for higher-status jobs. As noted earlier, social background was an important influence on women's chances of attending school. In the absence of direct information on the educational attainment of women, social background is an important indicator of the likelihood that they had schooling.

Moreover, families from better social backgrounds have better access to a network that can provide information on job openings in higher-status occupations (Flap and Völker 2003). In the period under study, social networks were important means of finding a job. Autobiographical material from nineteenth- and early-twentieth century England suggests that more than 50 per cent of autobiographers used their family or network of acquaintances to find a job (Miles 1993). Taken together, single women with a higher-status background were more likely to participate in schooling and to have access to information on better jobs. The advantages that a higher-status background offers at the start of a career are expected to affect too women's success during the course of their career. Qualifications and experience from higher-status first jobs have strong effects on subsequent occupational positions (Blau and Duncan 1967), so that single women were more likely than women from lower social backgrounds to improve their status over the course of their career.

H2: A higher social background was related to higher levels at which careers started and to a more rapid increase in status for single women.

¹⁹ Social background is operationalized as the status of the father. It would be desirable to include information on the occupations of the mothers of single women. For the majority of such mothers, no occupations have been recorded in the sources used by the HSN because they probably dropped out of the labour market due to childbirth. Although mothers were thus unable to pass on their occupation and/or employer to their daughters directly, they might have been able to provide information on their former occupation and so been able to influence their daughter's occupational decisions.

²⁰ Even before the introduction of the first law to make basic schooling mandatory in 1901, the rate of participation in primary schooling was high. Because basic schooling was widespread, the lack of such schooling impeded career advancement. Those individuals with secondary education probably had the best chances of pursuing successful careers.

Single women as breadwinner

There is ample theoretical and empirical research stressing how the responsibilities of being a family provider make men more productive and more successful in their employment career (Horrell and Humphries 1995, Lewis 2001, Kalmijn and Luijkx 2005). Furthermore, employers are expected to acknowledge the existence of breadwinning responsibilities and favour married men (Korenman and Neumark 1991). Thus, theoretically, for single women with breadwinning responsibilities one could also expect an increase in motivation and productivity.

Historical accounts of the working lives of single mothers provide us with mixed evidence on how the careers of women were affected by motherhood. On the one hand, women had to endure the burden of pregnancy and childbirth. Because of their responsibilities to provide for a child, single mothers worked until very shortly before their child was born and resumed work very quickly (Kok, van Poppel and Kruse 1997). On the other hand, Burnette and Stanfors (2012) report that both married and single mothers working in the cigar industry worked harder after having a child, resulting in a 'child premium' in the form of an increase in income. Another factor that could have increased the occupational status of single mothers was the need to find an occupation in which they were able to combine work and motherhood. Most jobs for women were in agriculture and domestic service – jobs with a lower status. Combining motherhood and work in these sectors was very difficult, if not impossible. Often, women employed as servants were fired when their employers discovered they were pregnant. It is therefore likely that pregnant women and women with breadwinner responsibilities would have tried to find work in other sectors, in factories, for instance, which offered somewhat more regulated working hours. These employment opportunities in industry offered jobs that were of a higher status than that offered by typical female jobs.

Given the necessity to earn a living and to work in sectors other than low-status sectors, single women with breadwinner responsibilities were likely to have had more successful careers than women without such responsibilities.

H3: Single women with breadwinner responsibilities had a higher occupational status and their status increased at a faster rate.

Modernization processes and career success

The logic of industrialism thesis states that a number of socio-economic changes have impacted the occupational structure and logic of the workplace in general (Treiman 1970, Inkeles 1960, Kerr *et al.* 1960, Mitch, Brown and van Leeuwen 2004). It predicts that industrialization, educational expansion, mass transport and mass communication will create an increase in the

demand for goods and services provided by people in higher-status jobs. Such modernization processes simultaneously support the growth of infrastructures that qualify individuals to act on these new occupational opportunities.

First, the role of industrialization and the emergence of large industrial facilities will be discussed, following which we will look at educational expansion, mass transport, mass communication and changes in values. This is discussed separately because industrialization and the emergence of large industrial facilities are expected to have influenced the career success of single women in different ways.

Industrialization and the emergence of industrial companies

Industrialization, taken to mean the use of mechanical equipment and mechanized energy (Davis 1955), caused a number of developments in the occupational structure. The production of goods became more mechanized. Changes in the production of goods, in addition to a growing demand for administrative and clerical workers in public bureaucracies, created jobs that called for better-trained employees (Kaelble 1985, Mitch, Brown and van Leeuwen 2004). These shifts in the occupational structure are believed to have greatly increased individual social mobility (Hauser *et al.* 1975).

In the nineteenth and early twentieth centuries the majority of women worked in agriculture, in domestic and public service and trading. These sectors were not massively influenced by industrialization and the processes discussed above that accompanied it. Although there was a rather strongly pronounced sex segregation in the labour market, women worked in several industrial sectors (de Groot 2001). However, it is difficult to obtain a reliable picture of female participation in the various sectors of the labour market. The occupational census data under-report the participation of women in the agricultural sector, the commercial sector and in industrial work. Nonetheless, they can be regarded as providing an indication of the minimum participation rates of women in different sectors. Plantenga (1993) and Pott-Buter (1993) show that until 1920 the percentage of women working in industry increased, as did the numbers employed in productive industry. The strongest increase took place in the administrative sectors, in which in 1900 0.1 per cent of employees were women. By 1920 this figure had increased to 2.6 per cent. Furthermore, women worked in the textile industry in the south and east of the Netherlands (Schmidt and van Nederveen Meerkerk 2012), and in shoe, leather-stitching and paper factories.

Thus, although it is difficult to trace the precise participation of women in industrializing sectors, there is reason to believe that the changes in the occupational structure would have increasingly affected women's careers. Whereas before the onset of the mechanization of work and the emergence of industrial facilities women worked to a large extent in domestic

service and agriculture, it subsequently became easier for them to work in the production sector. Occupations in the production sector were of a higher status than domestic service or agricultural occupations. Moreover, the emergence of larger industrial companies also created new job opportunities for women in administrative occupations. The creation of personnel departments caused an increase in the number of secretarial and administrative positions, and those were often filled by women (de Haan 1992).

Despite the increased likelihood of women having jobs in higher-status occupations, for two reasons I expect industrialization and the emergence of industrial companies to have had only a restricted impact on the career of women. More specifically, I expect that, although women were able to start their careers in higher-status occupations, they were subsequently blocked in their further advancement. There were two reasons for this.

First, owing to the organization of work and the hiring decisions of employers women had hardly any access to occupations that provided opportunities to increase their status over the course of their career. Women employed in industrial sectors were assigned to preparatory work, low-skilled and dead-end positions (de Groot 2001: 24). Their access to more senior administrative positions was likewise restricted; only the lowest ranks were open to women. The better administrative positions, such as that of an accountant, were filled only by men (de Haan 1992, Stovel, Savage and Bearman 1996).

Second, women faced legal restrictions regarding their work which made it less attractive for employers to hire them for industrial jobs. In the Netherlands, night work and work involving materials containing lead was restricted to men (Plantenga 1993).

In sum, whereas shifts in the occupational structure provided women with better access to higher-status jobs at the beginning of their career, those shifts did not facilitate growth in status over the life course of those women.

H4a: In contexts with large industrial facilities, women had a higher status at the start of their career.
Socio-technological changes

A number of other modernization processes – educational expansion, mass communication and mass transport – occurred during the period under study, and these too are expected to have facilitated the career success of women. These processes are thought to have also enhanced the status of women during their careers, and so were in contrast to industrialization, which is expected merely to have offered women a better starting position but no prospect of an increase in status over the course of their career.

Educational expansion offered more individuals a chance to gain educational qualifications by encouraging children from various social strata to attend school. Consequently, a larger number of adolescents were able to begin their careers in higher-status jobs. In labour markets

with rapidly changing modes of production, educational expansion also gives individuals easier access to additional training throughout their life.

In the Netherlands, during the period being studied, an increasing share of the population attended secondary and even tertiary education. From 1860 onwards, specialized artisan schools, commercial schools, domestic service schooling and many other types of educational and vocational school emerged (Boekholt and de Booy 1987:182). In more and more municipalities, girls too could benefit from the emerging educational opportunities. From 1876 onwards, in the highest form of secondary education, the *gymnasium*, boys and girls learnt together (Boekholt and de Booy 1987). In addition, in the second half of the nineteenth century girls' schools emerged. These were general secondary schools and cooking and household schools, which prepared women for jobs in domestic service. The school-leaving diploma awarded by such schools did not qualify them to go on to study at the university, but only to study as a teacher, or at art academies and colleges offering courses in social welfare. Women could also train to become a secretary.

Moreover, educational expansion is expected to have contributed to the development of a shared culture. The logic of industrialism thesis predicts that schooling will render cultural differences between employees less important for occupational attainment (Treiman 1970), since a larger proportion of male and female students will spend more time together in schooling, leading to an assimilation of basic knowledge, skills and behaviour. As for the dilution of cultural differences, I expect gender-specific attitudes and gender-specific behaviour to have converged somewhat. For employers, differences between men and women became less important criteria in the selection process.

The expansion of the educational system itself created new job opportunities for women. Until the 1860s the Dutch educational system was characterized by a strict gender division in teaching. Whereas men taught throughout the school system, women taught only pre-school children and female students. It was not until after 1860 that female teachers became eligible to teach at mixed secondary schools (van Essen 1999).

Mass communication and mass transport are expected to positively influence an individual's career by enabling access to new, and more, information, and to enable individuals to act upon that information in order to achieve their occupational aspirations. The rise of mass communication enabled women to access information on new job opportunities with employers outside their social networks. For example, post offices began to distribute newspapers with job advertisements across a wider geographical area (Zijdeman 2010). Job advertisements for domestic services and jobs in education were advertised in newspapers (chapter 6). Mass transport reduced the cost of travel, allowing residents to leave their homes and return with new information to share. Finally, the opportunities for mass transport presented by the ever-expanding railway network made it possible for people to seek employment across a wider

geographical area. Both processes thus provided women with better opportunities to gain information on job opportunities and with the infrastructure to act on those new opportunities.

In sum, I expect educational expansion, mass communication and mass transport to have provided women with better opportunities to secure higher-status first jobs, and also for women to have benefited from these infrastructural developments later on in their careers.

H4b: In more advanced socio-technological contexts single women had a higher occupational status and their status increased at a faster rate.

Changes in values

According to Treiman (1970), industrialization, educational expansion and other modernization processes were accompanied by the wider dissemination of universalistic values. Such values stress that all individuals are equally worthy and should be judged in terms of their efforts, skills and talents, rather than in terms of ascriptive characteristics such as gender. In non-industrial societies, ascribed characteristics are the primary determinants of attainment (Kerr *et al.* 1960). In industrial societies, employers and employees are believed to embrace universalistic values and eagerly seize new opportunities. The dissemination of universalistic values is therefore expected to have decreased the importance of gender in selection by employers. They are expected to have aimed to recruit the best-qualified worker, with the sex of that worker being irrelevant. Employers were increasingly willing to give to female applicants jobs offering long-term prospects that might also include training. Subsequently, too, employers would have considered women's qualifications rather than their sex.

The feminist movement provided many examples of women who managed to achieve their occupational aspirations. One important figure was Aletta Jacobs, the first female medical doctor in the Netherlands, who graduated in 1878. We expect women will have been more inclined to choose occupations that were previously the preserve of men, and those occupations were often of a higher status. These women strived for career success because they regarded themselves as equally worthy and equally eligible for higher-status jobs.

H5: In contexts in which universalistic values are more widely adopted, single women had a higher occupational status and their status increased at a faster rate.

Modernization processes and individual determinants of career success

The logic of industrialism thesis predicts that the role of individual determinants in career success will have changed in response to the social and economic changes engendered by modernization

processes (Treiman 1970). I will discuss the effects of socio-technological development and changes in values on the significance of social background and breadwinning responsibilities.

The influence of a father's status on his son's occupational attainment is believed to decrease due to modernization processes (Kerr *et al.* 1960, Zijdeman 2010). It is argued that the changes in the occupational structure that made occupational inheritance less likely are the mechanisms by which the influence of a father's status becomes weaker. In addition, individuals increasingly believe that an individual's qualifications and what they have achieved – rather than their social background – are what should count in status attainment. These changes in values contribute to the weakening of the influence of social background (Blau and Duncan 1967, Treiman 1970).

Due to the differences in the processes of status attainment between men and women, I expect educational expansion, mass communication and mass transport as well as changes in values to have increased (instead of reduced) the effects of the father's status on the status of his daughter or daughters.

Women benefited from the generalized resources of their fathers rather than from any direct occupational inheritance, and socio-technological advancement will have increased the degree to which single women benefited from the resources of their family. It will be easier for women to utilize the resources of their parents in municipalities that saw more advanced socio-technological changes. For example, in a municipality that offered schooling opportunities for girls, women will have benefited from the opportunity to attend schools, unlike those living in a municipality that offered no or few schooling opportunities for girls. In a municipality with mass communication, women from a higher social background are more likely to have better access to information disseminated by mass media, such as newspapers. These women could afford to read newspapers, and so were able to consult the personnel advertisements in order to find a job. Finally, women from a higher social background were more easily able to afford mass transport and to take advantage of new occupational opportunities even in more distant places.

In the same vein, women with children are expected to have been able to meet their breadwinner responsibilities more easily in more advanced municipalities. Single mothers have better access to a supportive infrastructure, and with mass communication and mass transport facilities it was easier to obtain information and to travel to other places that offered job opportunities.

Also, the dissemination of universalistic values is expected to have worked as a facilitator of social background, so that women benefited more from their parents' resources in places where universalistic values were more widespread. In contexts with stronger gender-specific role ideas, parents are likely to refrain from investing in the occupational careers of their daughters. In contexts where universalistic values are more widely disseminated, the gender of a child will be less important for investments in their career; women, too, then will be more likely to be

supported in their career compared with women in contexts in which universalistic values are less widespread. Furthermore, the higher the status of the family, the more the family can invest in the careers of their daughters.

An increase in the predominance of universalistic values can be expected to have given women who needed to act as a breadwinner for their child better opportunities to do so. Employers were probably more inclined to hire single women and acknowledge their need to act as breadwinner when the role of an individual's gender in determining their occupation declined in importance.

H6a: In socio-technologically more advanced contexts, a high social background was more positively related to the career success of women.

H6b: In contexts where universalistic values were more widely adopted, a high social background was more positively related to the career success of women.

H7a: In socio-technologically more advanced contexts, having breadwinner responsibilities was more positively related to the career success of women.

H7b: In contexts where universalistic values were more widely adopted, breadwinner responsibilities were more positively related to the career success of women.

5.3 Data, method and variables

5.3.1 Data

The Historical Sample of the Netherlands (HSN) provides information about the occupational careers of a representative sample of the Dutch population in the nineteenth and twentieth centuries. As such, it is an excellent source for studying women's careers in different regions and over time.

The HSN includes a sample of birth registers for the period 1812-1922 and will eventually include the life courses of 78,000 individuals. The main individual-level data sources are birth certificates, death certificates and marriage certificates. In addition, information from population registers is included. These were introduced in 1849 to continuously document household composition and place of residence of each individual living in the Netherlands. With the occurrence of any vital life event (the birth of a child or an individual relocating to a different municipality, for instance), information on the individual concerned, and, if applicable, their family, was recorded. As a result, the amount of occupational information available for any given individual depended on the number of vital events the individual experienced and not on that person's occupational career (the number of different occupations in which the individual was engaged during the course of their life, for example).

Because data collection is still underway, we will use a subset (Data Set Life Courses Release 2010.01), which consists of information on individuals born between 1850 and 1922. The data include respondents' date of birth, respondents' and fathers' occupations and place of residence.

Studies of social mobility in pre-industrial or industrializing societies are less revealing when the society in question is dominated by one very large occupational group (usually farmers). This is not an issue for the period and sample we have analysed. In the late nineteenth and early twentieth centuries, employment rates in the Dutch agricultural sector decreased (van Zanden and van Riel 2000:352). Only four per cent of the occupations in our sample relate to farming. Furthermore, occupational titles allow one to distinguish between jobs of varying status within the farming sector. On the status scale we use, farm owners have a score of 60.9, whereas farm labourers score 32.1. The scale ranks a number of other farm employees, including tree nursery workers (58.0), pastorals (48.4) and milkers (42.9). Because we aim to study occupational careers, we restricted our sample by age to include individuals most likely to belong to the working population (i.e., those aged at least 15; we did not set a maximum age). The sample includes occupational data for the period 1865-1928.

From all women for whom at least one occupation was recorded, we selected all those who never married. Of the 4,611 women in the total sample (HSN 1865-1928) 1,148 never married. Figure 5.1 gives the percentage of occupations recorded per age group for single and married women. The group of ever married women is considerably larger than the group of single women, but the occupational information rate shows that 80 per cent of the occupations recorded for ever married women are in age groups 15 to 25. For subsequent age groups we see a steep decrease in occupational information. The age group 36 to 40 includes just 1.5 per cent of all occupations recorded for women ever married. Likewise, the occupational information for single women decreased over the life course; however, that decrease was less steep, because single women did not drop out of the labour market after marriage and childbirth. More than ten per cent of occupational measurements of single women relate to ages 36 to 50.

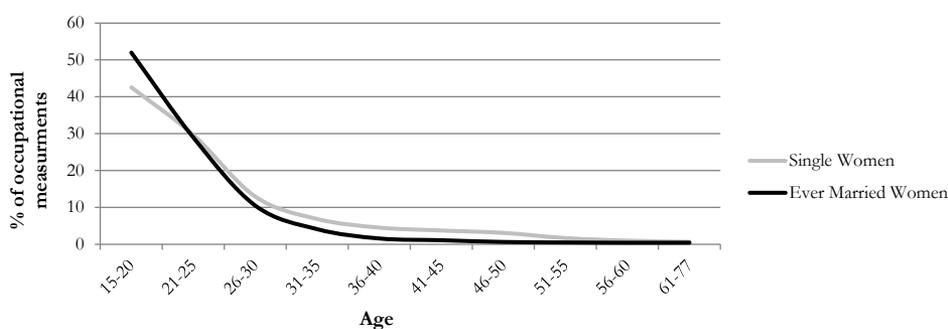


Figure 5.1 Percentage of occupational measurements of single and ever married women, by age group

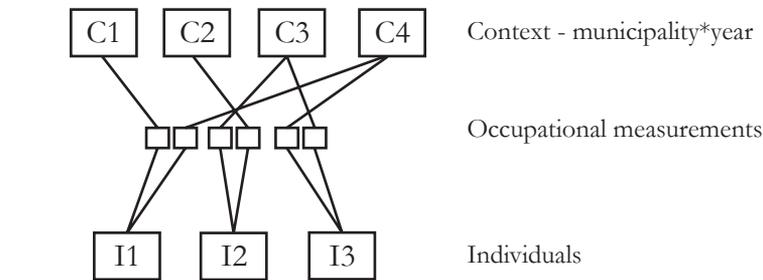
5.3.2 Data structure and model

We estimate multilevel growth models in which we predict that differential career success is affected by several individual and contextual determinants (Schulz and Maas 2010). We expect career success to increase with experience until a certain point towards the end of a given career. We differentiate two aspects of career success. First, the level of occupational status at the start of a career; and secondly, the rate at which occupational status grew over the course of the career.

These two aspects are affected by time-constant individual characteristics, such as social background, time-varying individual characteristics, such as having a child, and time-varying regional characteristics, including levels of educational expansion. When testing our hypotheses, we will differentiate firstly between effects on the level of status at the start of the career, and, secondly, effects on the rate of growth in status over the course of that career.

Residential location was recorded every time occupational data were registered. We created a ‘context’ variable, which reflects year and municipality. In our analyses, we include indicators of modernization at the ‘context’ level: for example, the number of students in secondary education in Utrecht in 1888, or whether there was a train station in The Hague in 1865.

We use cross-classified models, because our measurements of occupational status are nested in individuals and in varying ‘contexts’. We cannot employ a classical hierarchical nesting structure because not all occupational measurements relating to a given individual are necessarily nested within the same ‘context’, since people moved during their occupational career. Figure 5.2 illustrates a simplified version of our data structure.



- Individual 1: one occupation in Context 1, one in Context 4
- Individual 2: one occupation in Context 3, one in Context 2
- Individual 3: one occupation in Context 3, one in Context 4

Figure 5.2 Three individuals, with two occupational observations for each, in a total of four contexts

Strictly speaking, the nesting of occupational measurements within municipalities and across years constitutes a cross-classified structure in itself. Measurements from one municipality in different years are more similar to one another than measurements from two different municipalities taken in the same year. In addition, two measurements of modernization taken in two consecutive years have more in common with one another than two measurements of modernization processes taken ten years apart. However, software limitations make it difficult to estimate models that take this structure into account. Accordingly, we do not incorporate this additional structure (see also Zijdemans 2010).

5.3.3 Dependent variable

Occupational status: For a long time, inconsistent occupational terminology hindered cross-national and longitudinal comparisons of occupational status. Such comparisons became possible, however, with the development of the Historical International Standard Classification of Occupations (HISCO) (van Leeuwen, Maas and Miles 2004). This classification is based on the 1968 International Standard Classification of Occupations created by the International Labour Office (ISCO68 1969). All the occupational data we analyse have been classified using HISCO (van Leeuwen, Maas and Miles 2002). In order to analyse occupational status, we used the recently developed historical status scale, HISCAM (Lambert *et al.* 2013). The estimation techniques used to develop HISCAM are the same as those used for contemporary CAMSIS scales (Prandy 2000). These scales are designed with the assumption that patterns of social interaction (marriage for instance) between people from different occupational strata are representative of the overall structure of occupational stratification. The HISCAM scale models an estimate of the occupational stratification structure based on 1.5 million marriage records from six different countries (Britain, Canada, France, Germany, the Netherlands and Sweden) from 1800 to 1938.

Our dependent variable is occupational status measured at the individual level. The HISCAM scale we use to measure occupational status ranges from 1 to 99, with higher values indicating higher occupational status. Servants, for example are assigned a HISCAM score of 10.6. Teachers in primary education receive a score of 70.4 and midwives are assigned a middle position, with a score of 51.3.²¹

²¹ The HISCAM scale assumes that the relative status positions of occupational groups do not change over time. A test of this assumption showed that changes in status were relatively small and unsystematic. See Lambert *et al.* (2013).

5.3.4 Independent variables

Experience: We approximate occupational experience using the age of the respondent. We know for each point at which information was updated in the original sources (for example, on registration in the municipality, or through death certificates) in what year it was updated. By subtracting the year of birth from the year in which the information was updated, we can calculate the age of the women in our sample at that point. We assume that individuals begin their occupational careers at or after the age of 15. We therefore subtracted 15 from the age of the respondent, and divided the result by ten to allow easier interpretation. We added a quadratic term for career experience to the analyses to operationalize the fact that the effect of work experience on social status declines over an individual's occupational career.

Father's occupational status: As with the respondents' occupations, the occupations of respondents' fathers were coded into HISCO and then assigned a HISCAM score. If a respondent's father is known to have held more than one occupation, the data on the father's employment taken closest to the respondent's birth were used.

Child: For an indication of whether a single woman had breadwinner responsibilities, a value of one was given to the variable 'child' from the birth of the first child onwards.

5.3.5 Contextual characteristics

Post office: We included the spread of mass communication in our analysis with a variable reflecting whether or not a post office was present in a given municipality in a given year. Post offices held a special importance in the Netherlands in the late nineteenth and early twentieth centuries. Letters, telegrams, fashion brochures and newspapers were distributed by post offices. We derived data on post office locations from the annual reports issued by the Staatsbedrijf der Posterijen, Telegrafie en Telefonie (PTT) [State Post Office, Telegraph and Telephone Company] (see also Zijdeman 2008).²²

Train station: For the period 1865 to 1928, we retrieved data on the years that each train station in the Netherlands opened and closed from the website <http://www.stationsweb.nl/>. Using this information, we created a variable that indicates the presence (1) or otherwise (0) of a train station in any given year.

Educational expansion: To capture educational expansion, we created two municipal-level measures of the number of students enrolled in secondary education per 100 inhabitants. Even before the first mandatory schooling law was introduced in 1901, participation in basic schooling

²² The data on the presence of post offices cover the period up to 1918. By then, almost all municipalities had a post office; it was only after 1930 that some post offices were closed (Hogestegger and Kramer 1995).

was high in the Netherlands. Therefore, rates of participation in secondary education are a better indicator of educational expansion than participation in basic schooling. We consulted the annual reviews *Verslagen voor het hoger, middelbaar en lager onderwijs* of Dutch education for the period from 1860 to 1930 to obtain information on educational expansion. For every year, the number of students registered for any type of secondary education was recorded at the municipal level. Although *gymnasia* (secondary schools) students are registered in the reviews of higher education, we included them here because in practice the *gymnasia* merely prepared students for higher education (Mandemakers 1996).

One measure indicates the number of female and the second the number of male students in secondary education. From the 1860s onwards girls were admitted to ‘normal’ schools, and from 1870 onwards the number of girls’ schools increased. The variable ‘female students’ indicates the total number of female students in a municipality in a given year participating in some form of schooling or other.

Secularization: We measured the spread of universalistic values by the number of people per 1,000 inhabitants who indicated that they had no religious affiliation. This is only an indirect measure. However, it can be argued that religious – in this case Christian – values are not universalistic in at least two ways: they distinguish people of their own religion from others, and they place great emphasis on traditional family life (Wilson and Sandormirsky 1991). Especially the latter might have affected societal expectations regarding the occupational success of women.

During the period under study, religion was highly important to many people in the Netherlands. But as early as the second half of the nineteenth century, a process of secularization started which continued after 1928, the end of the period being studied here (Knippenberg 1999). Knippenberg (1999) describes the steady increase in secularization as a trend even in its progression and attributes it to a number of modernization processes. He argues that institutional differentiation, educational expansion, poor relief and the rise of the modern welfare state all contributed to the decrease in religious affiliation across Dutch society. The feminist movement interprets the historical development of feminism in the Netherlands in the second half of the nineteenth century and the early twentieth century as one made possible only due to that process of secularization (Jansz 2008).

We derived our secularization variable from the Historical Ecological Database (HED) for Dutch municipalities for every tenth year. For a description of the data, see Beekink *et al.* (2003). We calculated estimates for the years 1865 to 1928, for which no data were available, so that we could analyse the occupational measurements for those years as well. Our estimates are the weighted means of the number of secularized inhabitants from the years for which this information was retrieved. For example, our estimate of the number of secularized inhabitants in 1902 is equivalent to the sum of eight times the number of secularized inhabitants in 1900 and twice the number of secularized inhabitants in 1910, divided by ten.

Top 100 companies: To capture the presence of larger industrial enterprises we use information on the locations of the top 100 Dutch companies. Top 100 companies are enterprises that, in terms of total assets, are among the 100 most successful companies in the Netherlands. Ideally, one would like to include a measure of how many companies in a municipality in a given year had ILM structures; however, this information is not available. Bloemen, Kok and van Zanden's (1993) study of the top 100 Dutch companies provides us with information on which companies were top 100 companies in 1913 and 1930.

To Bloemen, Kok and van Zanden's (1993) listing we added the founding years and locations of the main establishments of the companies involved. Companies included in the 1913 or 1930 list were included for the respective year. Companies included in the 1913 list and established before that date were included as a top 100 company from the year of their foundation.²³ Companies founded after 1913 and included in the 1930 list were included for the years between their foundation and 1930 as well. Where a company was on the list in 1913, it was included for the years of its foundation onwards. If it was on the list in 1930 and founded before 1913 but was not in the list in 1913, the variable was coded 1 in 1930 only.

Year10: We controlled for year in all of our models. The variable 'year' starts in 1865 and is divided by 10.

5.3.6 Contextual control variables

Urbanization: We measured urbanization by calculating the population of an individual's home municipality for the years in which her occupational career was recorded. We derived data on urbanization from the Historical Ecological Database and the Historical Database for Dutch Municipalities (HDNG) for the period 1865 to 1928. In all of our models that include indicators of modernization, we control for urbanization.

Tables 5.1 and 5.2 summarize the descriptive information on the variables we used in our analyses.

²³ Chandler (1990) argues that only after 1880, with the second industrial revolution and its technological innovations, did companies begin to become larger and change their form of organization, or new companies emerge with these new hiring strategies. We therefore tried out alternative specifications of this variable, for instance regarding the years prior to 1880 as having no top 100 companies. Analyses with the different variables resulted in substantially very similar results.

Table 5.1 Summary statistics for time-invariant and time-varying individual-level variables

Time-varying variables (N=2499)	Min	Max	Mean/%	S.d.
Occupational status respondent (HISCAM)	10.60	98.60	31.53	24.87
Experience/10	0	5.60	0.99	0.99
Experience/10 ²	0	31.36	1.96	3.72
Having a child (1/0)			4.00	
Year/10	0	6.30	4.23	1.47
Time-constant variables (N=1148)				
Occupational status father (HISCAM)	10.60	99.00	48.84	13.28

Table 5.2 Summary statistics for contextual variables

Contexts (N=1655)	Min	Max	Mean/%	S.d.
Train station (1/0)			55.00	
Post office (1/0)			56.00	
Number of male students per 100 inhabitants	0	19.82	0.74	1.12
Number of female students per 100 inhabitants	0	5.17	0.15	0.36
Secularization per 1000 inhabitants	0	393.47	31.43	43.02
Top 100 industrial company (1/0)			23.00	
Population in 1000s	0.28	743.40	47.50	117.29

5.4 Descriptive results

How did the careers of single women develop in terms of status in the late nineteenth and early twentieth centuries in the Netherlands? How did the average status of these women develop over their life course? To provide a descriptive answer to these questions, Figure 5.3 compares the occupational careers of three cohorts. For each of the three birth cohorts Figure 5.3 presents the average occupational status by age. To smooth out these curves, five-year moving averages are presented.

The level of status at the start of women’s careers clearly increased during the period being studied. Cohort 1 (born 1850-1871) started their careers with an average status of 18. The status of cohort 2 (born 1872-1892) is five status points higher than that of the first cohort. On average, women in our final cohort (born 1893-1913) started their careers with an average status of 32, and this advantage over the preceding cohort endured during the remainder of the life course observed in the present study.

Despite fluctuations, all three cohorts show increased status over the course of their career. Though the careers of the third cohort had not been completed by 1928, by the age of 30 they already had a higher status than either of the two preceding cohorts would ever achieve during their working lives. The increase in status both during the career as well as over time supports the expectation of increasing career success for women.

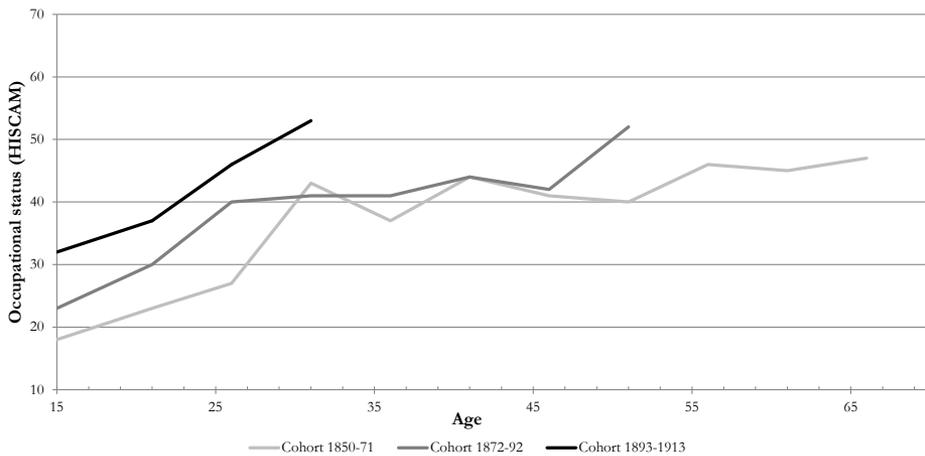


Figure 5.3 Average occupational status of single women over the life course by birth cohort (five-year moving averages)

Table 5.3 presents data on the distribution of female labour by HISCO three-digit groups, and changes over time between 1865 and 1930. It presents a complete list of the occupational groups

of single women,²⁴ from which it becomes apparent that the number of occupational groups in which single women worked at the start of their career increased considerably. In the last period (1921 to 1930) single women worked in more than four times as many occupational groups as they had done in the period 1865 to 1880.

Figure 5.4 presents a selection of the most prevalent occupational sectors in which single women worked during the period 1865 to 1930. Several of the occupations in which few women were initially active grew at the expense of domestic service and cleaning. In the period 1865 to 1930 the proportion of women in domestic service or cleaning occupations decreased from almost 80 to around 40 per cent. Despite some fluctuations, the largest increase in the percentage of single women occurred in the textile, retail and administrative sectors (clerks). In the first period (1865-1880) around four per cent of all single women worked in the textile sector; this figure had virtually doubled by 1921-1930. In the first period less than two per cent of single women were clerks; by 1921-1930 the corresponding figure was almost seven per cent. Over that same span of time, the employment rate in the retail sector showed a rather gradual increase, from three per cent to eight per cent. There were also occupations in which initially no women were active. Whereas in the first period no single women were working as nurses, the proportion of women in nursing had increased to seven per cent by 1921-1930. The proportion of women working in the teaching sector and the proportion in general farming remained about the same. The occupations in which increasingly more women worked tended to have a higher occupational status than occupations in the service/cleaning sectors. Servants are assigned a status score of 10.6, occupations in the retail sector have an average score of 67 points. Textile workers have an average status score of 36 points.



Figure 5.4 Development of the most prevalent occupational sectors of single women expressed as a proportion of all occupations, 1865–1930. The occupational sectors include the following: Teaching – Pre-primary and Primary Education Teachers, and Teachers not further specified; Retail – Working Proprietors, Saleswomen, Shop Assistants; Clerks – Mail Distribution, Correspondence and Reporting Clerks; Nurses – Professional Nurses; Farmers – General Farmers; Textile Sector – Sewers, Weavers, Spinners. Source: HSN.

²⁴ The HSN data include multiple measurements of women's occupational status throughout their life course. Only the first occupational measurement was selected for the descriptive analyses.

Table 5.3 Distribution of female labour by occupation, and over time, 1865 to 1930, source: HSN

Total number of occupations	1865-1880		1881-1890		1891-1900		1901-1910		1911-1920		1921-1930	
	8	25	28	29	32	35						
Maids	78.57	65.24	59.02	54.24	43.94	39.36						
Sewers	4.29	4.88	8.2	8.9	7.27	6.74						
Prim. Education Teachers	4.29	3.66	2.73	5.51	7.96	4.96						
Workers	4.29	3.05	2.73	2.12	3.81	2.84						
Working Proprietors	2.86	0.61	2.19	1.27	0.35	2.13						
General Farmers	1.43	3.05	4.92	5.08	0.69	2.13						
Mail Distribution Clerks	1.43	0.61	0	0	0	0.35						
Teachers	1.43	0	0	0	0	0						
Pre-Prim. Educ. Teachers	0	2.44	0	0	0.35	0.71						
Salesmen / Shop Assistants	0	1.83	2.73	3.81	4.84	6.03						
General Farm Workers	0	1.83	0.55	0.42	0.35	0						
Spinners / Winders	0	1.83	0.55	0.42	0.35	0						
Housekeeping Service Supervisors	0	1.22	1.64	2.97	3.11	4.96						
Weavers	0	1.22	0.55	2.12	1.73	0.71						
Bakers	0	1.22	0	0.42	0.35	0						
Painters / Construction	0	1.22	0	0	0	0						
Milliners	0	0.61	0	0	0	0						
Char workers	0	0.61	2.19	0.42	4.15	1.42						
Ministers of Religion	0	0.61	1.64	0.85	2.77	2.84						
Jewellery / Precious Metal Workers	0	0.61	0.55	0	0.35	0						
Correspondence / Reporting Clerks	0	0.61	0	0.85	4.84	7.09						
Cooks	0	0.61	0	0	0.35	0.35						
Tailors and Dressmakers	0	0.61	0	0	0	0						
Blacksmiths / Hammersmiths	0	0.61	0	0	0	0						
Street Vendors / News Vendors	0	0.61	0	0	0	0						
Tobacco Preparers	0	0.61	0	0	0	0						
Field Crop Workers	0	0	1.09	0	0	0.71						
Shoemakers	0	0	1.09	0	0	0.35						
Livestock Workers	0	0	0.55	0	0.35	0						
Librarians / Archivists / Curators	0	0	0.55	0	0	0						
Professional Nurses	0	0	0.55	2.54	4.5	6.74						

The descriptive findings support the notion that women worked in a larger number of different occupations. Moreover, it also lends support to the idea that women increasingly worked in higher-status occupations.

The three careers described in Figure 5.5 exemplify how diverse the careers of single women actually were. They differ in length of observation, period, number of observations and in the richness of information provided. They range from a career that started at the very bottom of the status scale ('maid') to a teacher in primary education.

The career of the maid is observed for a period of 45 years. The first occupational information for this carpenter's daughter was recorded when she was 15 years old, and she was still in that occupation when she was aged 25 and 35. By the time we see her again in her fifties, she had experienced considerable upward mobility. Aged 55 and 60, she gave 'housekeeper' as her occupation, pushing her almost 35 points higher up the status scale. The second example in Figure 5.5 is that of a sewer who became a housekeeper in her late forties. Her career is observed for 17 years, and in these 17 years she experienced little mobility in terms of status. Both occupations engaged in by this labourer's daughter were very similar in terms of status – the sewer has a status score of 43, the housekeeper a status score of 45. The third woman in Figure 5.5 gave her occupation at the age of 23 as 'coppersmith'; she went on to become a primary school teacher. Both occupations are of above-average status, as is the occupation of her father, a painter (54.8 points). The length of her observed trajectory was rather short, just six years.

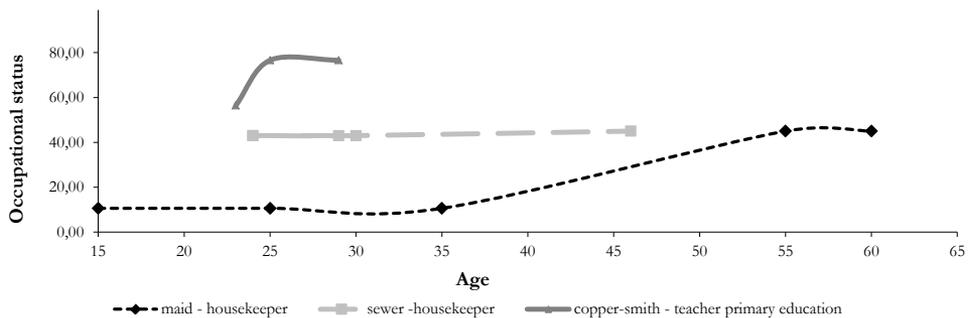


Figure 5.5 Careers of three single women

Note: The cases are taken from the HSN data. Occupational status measurement points are indicated by dots.

5.5 Explanatory results

Tables 5.4, 5.5 and 5.6 display the results of cross-classified multilevel models of women's occupational status over the life course. The 'null model' (model 0) shows that most of the variance in occupational status (77%) is found among women [$476.281 / (33.226 + 476.281 + 108.125)$]. We found considerably less variance (17.5%) in the occupational status of a given individual over the course of her working life ('within individuals'). Five and a half per cent of the variance in women's occupational status can be attributed to context. Although variance at the context level is quite small, it is statistically significant, as is the variance at the two other levels.

Model 1 presents the effects of individual characteristics on the social status of single women. It shows that women gained status with increasing work experience. For every ten years of career experience, women's status increased by about three status points. The squared experience term is not significant, indicating that the speed at which status increased over the course of the career did not slow down towards the end of that career. Accordingly, Hypothesis 1 is only partially supported: women's status increased with experience, but there is no indication that the rate of increase in status slowed down later on in women's careers.

In all the models except model 0, we included time, i.e., the variable 'year10', as a control variable. The significant positive effect of this variable indicates that if we take the characteristics of women into account, there is some evidence for an overall movement towards more successful careers. With the passing of every ten years, average occupational status increased by 2.65 status points. Additional analyses (not shown here) revealed that adding the time variable causes the huge reduction in the variance at the context level. The differences in occupational status between contexts is thus to a large extent explained by a gradual upgrading of the occupational structure over time.

One expected positive effect of father's status is found in all models. For example, in model 1 an increase in the father's status is associated with a 0.604 point increase in his daughter's status. Before discussing the test of hypothesis 2, we present in model 2 the trend in the effect of a father's status over historical time. The interaction term is not significant, indicating that the effect of a father's status did not vary over historical time.

Turning to the effects of individual characteristics over the life course, i.e., the effect on the rate at which status grew over the life course, we must conclude that, contrary to what we had expected, the status of women from a higher social background did not increase at a higher rate than that of women from lower-status backgrounds. With every additional status point for the father, for women from higher-status backgrounds the growth in status was 0.131 less per ten years of experience (model 2). Single women with fathers from the highest-status quartile, i.e., fathers with a status score in excess of 75 points, were over-represented within teaching and nursing. Teachers had a status score of 76.6 points and nurses a score of 63 points.

Table 5.4 Results of cross-classified multilevel models on women's status: individual and contextual effects

	Model 0	S.E.	Model 1	S.E.	Model 2	S.E.
Fixed component						
Constant	32.089	0.703	-11.250	2.758	18.415	1.758
Experience/10			3.054	0.937	3.243	0.925
Experience/10 ²			-0.198	0.221	-0.255	0.222
Father's status			0.604	0.048	0.715	0.056
Child (1/0)			4.744	2.165	3.763	2.071
Year10			2.650	0.430	2.609	0.424
Trends over life course / time						
Father's status* experience/10					-0.131	0.040
Father's status*year10					0.022	0.034
Child*experience/10						
Child*year10						
Modernization indicators						
Population in 1000s						
Post office (1/0)						
Train station (1/0)						
Male students per 100 inhabitants						
Female students per 100 inhabitants						
Secularization per 1000 inhabitants						
Top 100 company (1/0)						
Random component						
Context	33.226	6.479	0.308	0.377	0.388	0.535
Individuals	476.281	24.243	379.548	19.495	381.411	19.630
Occupational measurements	108.125	6.627	125.011	4.769	123.151	4.822
-2*log likelihood:	20047.105		20106.600		20081.362	

Note: Experience is counted from age 15, year is counted from 1865, and except for the variable experience/10 the variables in the interaction terms are mean-centred. Bold coefficients are significant at the 0.01 level (two-tailed).

Table 5.5 Results of cross-classified multilevel models on women's status: individual and contextual effects

	Model 3	S.E.	Model 4	S.E.	Model 5	S.E.
Fixed component						
Constant	-11.262	2.722	18.590	1.782	-10.085	2.878
Experience/10	3.332	0.931	3.534	0.935	2.813	0.944
Experience/10 ²	-0.347	0.233	-0.371	0.231	-0.194	0.223
Father's status	0.603	0.047	0.710	0.056	0.548	0.051
Child (1/0)	-2.469	3.960	-1.668	3.911	5.455	2.118
Year10	2.665	0.418	2.577	0.426	2.399	0.464
Trends over life course / time						
Father's status* experience/10			-0.124	0.038		
Father's status*year10			0.022	0.033		
Child*experience/10	3.417	1.630	2.605	1.625		
Child*year10	-0.949	1.666	-0.957	1.600		
Modernization indicators						
Population in 1000s					-0.003	0.003
Post office (1/0)					1.293	1.438
Train station (1/0)					-0.118	1.428
Male students per 100 inhabitants					0.963	0.615
Female students per 100 inhabitants					0.638	1.586
Secularization per 1000 inhabitants					0.000	0.010
Top 100 company (1/0)					3.845	1.409
Random component						
Context	0.371	0.507	0.002	0.003	0.021	0.014
Individuals	380.159	19.581	381.622	19.373	372.071	19.200
Occupational measurements	123.334	4.867	123.675	4.761	124.800	4.808
-2*log likelihood:	20103.826		20080.922		20104.412	

Note: Experience is counted from age 15, year is counted from 1865, and except for the variable experience/10 the variables in the interaction terms are mean-centred. Bold coefficients are significant at the 0.01 level (two-tailed).

Both occupations were thus considerably above average in terms of the status of single women (32 status points), and yet they seem not to have provided opportunities for upward mobility later on in their career. Accordingly, hypothesis 2 is only partially supported since although women from higher-status backgrounds had a higher occupational status at the start of their career, their status grew at a slower rate compared with the corresponding rate for women from lower-social backgrounds.

Hypothesis 3 is tested in model 3. This model includes the main effect of having a child and the interaction between this and experience and time. In model 2 the effect of having a child on women's status is positive. In model 3 the main effect of having a child is negative (-2.469 n.s.). However, this effect relates to women aged 15, when women would not yet have had any children, and it is thus an artefact. The positive interaction term of having a child and experience indicates that the negative effect of having a child at the start vanished over the course of a career. By the age of 25 the negative effect had been transformed into a positive effect. Note that in model 4, which takes into account both the interactions with father's status and having a child over the life course and over time, the interaction term between having a child and experience is insignificant, while the negative interaction between father's status and experience remains significant. This finding indicates that the effect of having a child is explained by the lower status of fathers of single mothers. Many of the single women who had a child come from lower-status backgrounds. These women had greater growth potential during their career and therefore, taking into account their social background, the effect of motherhood on the rate at which status grew over the life course vanished. All in all, hypothesis 3, too, is only partly supported. Whereas having a child had an effect at the start of a career, it did not influence the rate at which status grew over the life course.

In model 5, the modernization indicators 'post office', 'train station', 'educational expansion', 'female students in secondary schooling', 'secularization' and 'presence of a top 100 company' are added. Of these modernization indicators, only the presence of top 100 companies had an effect on women's status. The status of women in contexts with one or more top 100 companies was almost four points (3.845) higher than was the case for single women in contexts without top 100 companies. Accordingly, hypothesis 4a is supported. Descriptive analyses too support the indication that large industrial facilities did indeed offer women specific opportunities for higher-status occupations by offering them administrative jobs. In places in which at least one top 100 company was located, three per cent of single women worked in administrative jobs; in places with no top 100 companies the corresponding figure was just one per cent.

The modernization indicators 'post office', 'train station', 'educational expansion', 'female students in secondary schooling', and 'secularization' did not significantly influence women's status. In additional analyses the modernization indicators were added separately to the model,

controlling for just population size. Post office, train station and the number of male students in a context positively influenced women's status. After including an additional modernization indicator, the effects disappeared. The correlation matrix (see Table 5.7) shows that some of the context indicators are correlated to a moderately high degree, but none of the correlations exceeds 0.65. The modest correlations are unlikely to be responsible for modernization indicators lacking a significant effect. Also, the strong reduction in variance at the context level after adding time and individual predictors (compare models 0 and 1) already indicates that much of the variance across contexts is explained by the gradual upgrading of the occupational structure and the characteristics of women.

Model 6 presents interaction terms of the indicators of modernization and experience. A more rapid increase in status was found for women in contexts in which a post office was present. In a context with a post office, women's status increased 2.971 points per decade faster than in a context without a post office. None of the other indicators influenced the speed at which status grew during women's careers. Accordingly, we find only limited support for hypothesis 4b, which states that in contexts with more extensive socio-technological changes women started their career at a higher level and experienced a more rapid increase in status. Furthermore, we found no indication that, notwithstanding hypothesis 5, women had more successful careers in places characterized by a greater degree of secularization.

Whether the other processes of status attainment changed in response to modernization processes is tested in models 7 and 8. All interactions between modernization processes and father's status are included. In addition, the trend in the effect of a father's status over historical time as well as during individual women's careers is included as a control variable. The effect of a father's status did not vary according to the degree of secularization, nor according to the degree of socio-technological change.

Our final hypothesis tests the prediction that in contexts where socio-technological changes and universalistic values are more widely disseminated, the effect of having a child will increase. Model 7 also includes the trend in having a child over historical time and over the course of a woman's life. The effect of having a child on women's status was not influenced by the presence of a train station, a post office, a top 100 company or the level of secularization or educational expansion.

Table 5.6 Results of cross-classified multilevel models on women's status: interaction effects

	Model 6	S.E.	Model 7	S.E.	Model 8	S.E.
Fixed component						
Constant	-7.318	3.129	18.722	2.163	-8.869	3.044
Experience/10	1.905	1.196	3.048	0.955	3.142	0.971
Experience/10 ²	-0.064	0.230	-0.275	0.229	-0.365	0.240
Year/10	2.188	0.441	2.232	0.459	2.366	0.446
Father's status	0.554	0.049	0.718	0.085	0.548	0.049
Child	5.414	2.157	4.768	2.011	-5.152	5.741
Year/10	2.188	0.441	2.232	0.459	2.366	0.446
Trends over life course / time						
Father's status*year10			0.025	0.036		
Father's status* experience/10			-0.142	0.039		
Child*year10					-1.559	1.855
Child*experience/10					4.402	1.781
Modernization indicators						
Population in 1000s	-0.003	0.003	-0.001	0.003	-0.002	0.003
Post office (1/0)	-1.492	1.853	1.517	1.572	1.044	1.481
Train station (1/0)	0.873	1.830	-0.591	1.563	-0.109	1.492
Male students	1.756	0.937	1.011	0.621	0.981	0.613
Female students	4.449	2.509	1.122	1.555	1.103	1.603
Secularization in 1000	-0.009	0.013	0.000	0.010	-0.000	0.010
Top 100 company (1/0)	4.081	1.716	3.440	1.512	3.954	1.541
Interactions: experience/10						
Post office (1/0)	2.971	1.165				
Train station (1/0)	-1.819	1.181				
Male students	-2.205	1.432				
Female students	-0.587	0.456				
Secularization in 1000	0.007	0.007				
Top 100 company (1/0)	-0.372	0.896				
Interactions: father's status						
Post office (1/0)			0.051	0.129		
Train station (1/0)			-0.121	0.121		
Male students			-0.079	0.042		
Female students			0.209	0.115		
Secularization in 1000			0.000	0.001		
Top 100 company (1/0)			0.001	0.096		
Interactions: child						
Post office (1/0)					10.978	6.696
Train station (1/0)					-5.636	6.800
Male students					-1.449	3.574
Female students					-4.246	5.973
Secularization in 1000					-0.017	0.058
Top 100 company (1/0)					-8.494	5.258
Random component						
Context	0.031	0.047	0.010	0.000	0.056	0.077
Individuals	372.942	19.153	372.285	337.441	373.049	18.809
Occupational measurements	124.217	4.842	124.060	115.206	124.470	4.802
-2*log likelihood:	20095.674		20072.016		20105.575	

Note: Experience is counted from age 15, year is counted from 1865, and except for the variable experience/10 the variables in the interaction terms are mean-centred. Bold coefficients are significant at the 0.01 level (two-tailed).

Table 5.7 Correlations between contextual indicators of modernization

	Population	Post office	Train station	Secularization	Top 100 company	Male students
Post office	0.316 ^{**}					
Train station	0.317 ^{**}	0.646 ^{**}				
Secularization	0.272 ^{**}	0.153 ^{**}	0.173 ^{**}			
Top 100 company	0.593 ^{**}	0.457 ^{**}	0.449 ^{**}	0.242 ^{**}		
Male students	0.160 ^{**}	0.519 ^{**}	0.475 ^{**}	0.214 ^{**}	0.305 ^{**}	
Female students	0.156 ^{**}	0.278 ^{**}	0.298 ^{**}	0.217 ^{**}	0.205 ^{**}	0.603 ^{**}

** Correlation is significant at the 0.01 level (two-tailed).

5.6 Conclusion and discussion

In this chapter, I studied the effects of individual characteristics and modernization processes on the career success of single women in the Netherlands in the late nineteenth and early twentieth centuries. Careers are described in terms of the development of status over the life course and over historical time. Furthermore, the influence of individual characteristics, such as social background and breadwinner responsibilities, and of modernization processes, such as educational expansion and mass communication, was assessed.

I used a unique data set, the Historical Sample of the Netherlands (HSN), to analyse the careers of 1,148 single women in 421 municipalities over 63 years. The data refer to the careers of single women from various regions in the Netherlands working in a broad range of occupations. Modernization processes are measured at the municipal level. Socio-technological processes included mass communication, mass transport, educational expansion and the presence of top 100 companies. Changes in social values were analysed with reference to the degree of secularization over time.

The first descriptive research question was addressed by studying moving averages of women's status over the life course and over time. Over historical time as well as over the course of their careers, the status of women increased. Furthermore, the descriptive analyses showed that, over time, women worked in an increasingly wider range of occupations.

The results of cross-classified multilevel growth models support the descriptive findings of increasing career success. However, while women gained status over the course of their career there is no indication that the rate of increase slowed down towards the end of their career. That is a rather surprising finding, as we had expected that the new experiences gained by individuals would have been finite. As expected, in the nineteenth and early twentieth centuries the careers of men showed a decline in the rate at which status increased towards the end of their career (Schulz and Maas 2010). One possible explanation for this finding could lie in the high dropout rate among women after marriage. Because many women stopped working at younger ages, very few of them managed to acquire the experience necessary to be eligible for higher-status jobs. Because there were few competitors for jobs that required more experience, single women who remained active in the labour market throughout their life had fairly good prospects of getting such a job.

Another interesting finding is that women from higher-status backgrounds started their career at a higher level of status but experienced a slower rate of increase in status over the course of their career. That is a surprising finding, as we had expected that the resources and networks available to those from a higher social background would facilitate career success later in life. One possible explanation for this finding might be the effect of glass ceilings on the advancement of women. Women could 'see' higher-status positions but they were excluded

from them. If glass ceilings exist, the disadvantaged position of women cannot be explained by the job-relevant characteristics of the employee, and the effect of that disadvantage would have been greater at higher levels of status (Cotter *et al.* 2001). Van Essen (1999) describes an example of this effect on the careers of women in the Dutch education sector in the 1920s. Women were more successful than men in the examinations that had to be set in order to become head of a school. Despite women outperforming men, it was often men who were appointed. Eventually, fewer women took the examination, because they realized that, regardless of their academic success, they were unlikely to be appointed.²⁵

Another possible explanation is that many women from higher-status backgrounds presumably had dead-end jobs, like midwives. Midwives had an above-average status but hardly any opportunity to progress to a position of higher status in their occupational field.

As expected, on average, women with children had a higher occupational status. Thus, despite the hardship of being a single mother women's status increased after having a child. However, the rate at which their status subsequently grew was not affected.

Contextual modernization processes had hardly any influence on women's status. Only women in municipalities with large industrial facilities had a higher status. In municipalities where a top 100 company, our measure of industrial facilities, was located, the percentage of women working as office clerks was twice as high as in municipalities without top 100 companies. This suggests that administrative jobs especially provided women with better prospects of career success. Also pointing in that direction is the finding that women in municipalities with mass communication experienced a more rapid increase in status over the course of their career. The measure of mass communication – the presence of a post office – is in fact an indicator of the presence of a bureaucratic organization. Other modernization processes had neither an effect on the rate of growth of status nor on the effect of social background or motherhood. Thus, the process of status attainment among single women was hardly affected by modernization processes.

All in all, the results of this study indicate that individual differences, i.e., in human capital, social background and breadwinning responsibilities, were important in determining the career success of single women. Our analyses have revealed that the differences between contexts can, to a very large extent, be explained by a general upgrading in the occupational structure over time. Regional differences mattered only in terms of specific career opportunities, namely for the administrative job opportunities provided by large bureaucracies.

²⁵ In some European countries (including the UK and Sweden), marriage bars or other legal restrictions on married and unmarried women working in teaching were in place. In the Netherlands, no restrictions on single women being employed in teaching were imposed, and it was not until the mid-1920s that marriage bars were introduced in the teaching sector. From 1924 onwards, municipalities were entitled to dismiss married women; from 1934 onwards, municipalities were compelled to dismiss women intending to marry.

The findings of this study offer some interesting theoretical implications and directions for further research. The logic of industrialism thesis seems not to capture well the effect of societal changes on the career success of women. Rather than benefiting from general changes in the occupational and educational structure, women's career success was enhanced only by very specific opportunities. Also, the prediction that the mechanisms of status attainment would change in response to modernization processes was not confirmed in the case of women's careers.

The finding that women with a higher status were restricted in their career advancement might point to the role of discriminatory laws and practices among employers. Future research could aim to systematically address the role of restrictive provisions aimed at prohibiting the employment of women. While restrictions generally aimed at barring married women, there was an ongoing discussion about banning non-married women from employment too, and these public debates set the tone for how the role of women in society was viewed.

Furthermore, it would be desirable to extend the explanatory framework of this study to include the impact of household characteristics on the career success of single women. We have shown that breadwinner responsibilities were important for women's career success. Single women living in a family household might have been breadwinners for other family members as well. It might be interesting to assess the residential situation of single women, i.e., whether they lived alone or in a family household. In addition, the role of occupational networks for women's status attainment can be studied by taking into account the occupations of family members – siblings for instance. Moreover, a framework that includes the household context could also facilitate a study of the occupational attainment of married women, by allowing one to consider, for example, the role of husbands in the occupational careers of their wives.

6

Employer's choice – selection through job advertisements in the nineteenth and twentieth centuries

This chapter is co-authored by Ineke Maas and Marco H.D. van Leeuwen and is currently under review at an international journal.

Wanted: well-bred female bar personnel and waitresses, must be 18 or older and of unimpeachable character. Foreign, married or divorced women need not apply.

Advertisement in the *Rotterdamsch Nieuwsblad*, 30 May 1939, p. 8

6.1 Introduction

Theories of industrialism take the view that in non-industrial societies an individual's life chances were primarily determined by his or her status at birth. In modern or modernizing societies an individual's qualifications, talents and merits increasingly became key factors in occupational success (Inkeles 1960, Kerr *et al.* 1960, Kaelble 1985, Treiman 1970). Occupational role allocation is supposed to have fundamentally changed due to a shift from ascription-based to achievement-based selection. Research on status attainment during modernization usually focuses on individual attainment (for a review see van Leeuwen and Maas 2010, Zijdeman 2010). The role of employers, whose hiring preferences are supposed to have shifted, is largely ignored. We fill the gap in the literature by analysing a large long-term dataset on job advertisements covering the period of industrialization and modernization in the Netherlands. As the job advertisement from the *Rotterdamsch Nieuwsblad* illustrates, job advertisements are a rare historical source that document – for a large number of occupations – what characteristics employers looked for when selecting personnel.

We will address changes in hiring preferences among employers in response to structural labour market changes, i.e., the emergence of more complex and higher-status occupations, and in response to other modernization processes, such as educational expansion and mass communication. The nineteenth and twentieth centuries were periods of tremendous social and economic change, rapid industrialization and continued urbanization. At the same time, modern transport, communication and educational expansion were spreading rapidly. Educational expansion, mass communication and mass transportation were accompanied by national and international competition in the new industrial order, and these processes are believed to have compelled managers to recruit efficiently in a similar way in all countries (Brown, van Leeuwen and Mitch 2004). By efficient recruitment we mean that only the characteristics of a potential employee directly related to the execution of the job play a role. We will call these achieved characteristics. Ascribed characteristics, such as religious affiliation or social background, should not play a role. Thus, our application of the concepts of achieved and ascribed characteristics is based on the distinction between job-related and non-job-related requirements.

Research on the role of the employer in employee selection during modernization is scarce. The few studies that exist focus on modern bureaucratic companies with internal labour

markets (ILMs). In their study of Lloyds Bank in Britain, Stovel, Savage and Bearman (1996) found some indications suggesting a shift towards achievement-based careers, but at the same time processes of ascription were still at work. Jacoby (1984, 1985) describes the development of more systematic hiring practices in US companies in the twentieth century. Personnel departments were introduced to reduce turnover and to increase satisfaction with the employees selected. Economic theories emphasize that on-the-job training became more common and employers selected the most promising workers and offered lifetime jobs to recoup investments in their training (Owen 2004). Recruitment outside ILM structures is also expected to have changed towards achievement-based selection as well (Treiman 1970). The focus on modern company settings, however, makes a generalization of the findings to the general population difficult.

Some studies exist on the role of the employer in the allocation to jobs in industrial and post-industrial labour markets. Jackson (2007) studied class differentials in requirements by analysing job advertisements and found that across the social strata both ascribed and achieved characteristics were requested by employers. A number of studies focus on ethnic discrimination by employers in the job selection process (for a review see Pager 2007). Studies addressing selection processes in industrial and post-industrial labour markets cannot assess the role of modernization processes such as industrialization and educational expansion.

So far, it remains unclear whether nineteenth- and twentieth-century modernization processes did indeed cause a shift from ascribed to achieved recruitment for the population at large. We address this question by studying a sample of job advertisements from five Dutch newspapers in the period 1870 to 1939. Job advertisements include information on the occupation and tasks that a potential employee has to execute, and, to a varying extent, information on requirements. These requirements include achieved characteristics, such as educational and vocational qualifications, and experience, but also ascribed characteristics, such as marital status and religious affiliation.

Because little is known about the requirements that employers formulated in job advertisements in the nineteenth and twentieth centuries, we first ask: *What ascribed and achieved characteristics were used by employers to recruit employees through job advertisements in the Netherlands between 1870 and 1939?* Secondly, we ask: *Did employers in the Netherlands decreasingly select on ascribed characteristics between 1870 and 1939?*

In order to investigate the changes in hiring preferences of employers in response to structural labour market changes, we ask: *Were employers seeking employees for more complex and higher-status occupations less likely to select on ascribed characteristics?*

Furthermore, we study the hiring preferences of employers against the background of the general modernization processes that took place during the nineteenth and twentieth centuries: *Were employers in more modernized regions and periods less likely to select on ascribed characteristics?*

6.2 Theory and hypotheses

The “logic of industrialism” thesis states that during the nineteenth and twentieth centuries a number of socio-economic changes impacted individual occupational attainment and the logic of the workplace in general (Treiman 1970, Inkeles 1960, Kerr *et al.* 1960, Mitch, Brown and van Leeuwen 2004). It predicts that industrialization, the emergence of internal labour market structures, educational expansion, mass transport, mass communication and value changes compelled employers to select employees increasingly based on achieved characteristics such as skills, education and experience. Ascribed characteristics, such as social background, marital status and religious affiliation, became less important hiring criteria.

Two mechanisms of how modernization processes reduced ascription-based recruitment are usually given (Inkeles 1960, Kerr *et al.* 1960, Treiman 1970, Mitch, Brown and van Leeuwen 2004). The first relates to changes in the occupational structure, and the second addresses the effect of modernization processes on the hiring behaviour of employers. We start by discussing the role of structural labour market changes. Subsequently, we discuss the influence of internal labour markets, educational expansion, mass communication, mass transportation and value changes on the selection criteria of employers.

Industrialization, taken to mean the use of mechanical equipment and mechanized energy (Davis 1955), caused a number of developments in the occupational structure that led employers to select their employees increasingly based on achieved characteristics.

The production of goods became more mechanized. More specialized occupations emerged which demanded better trained skilled workers who were also able to assume supervisory positions (Owen 2004). Employees in such positions had more responsibilities and needed specialized training. These positions were often of a higher status compared with positions with fewer responsibilities. Employers hired workers based on achieved characteristics, such as schooling and motivation, to ensure they were able to perform well in their jobs, otherwise those employers would run the risk of incurring losses in terms of the quality of the goods produced or damage to costly machinery. Thus for the growing number of specialized and higher-status jobs employers are expected to have recruited on characteristics directly related to performance in these jobs, such as skills, education or experience, and less so on ascribed characteristics such as social background and marital status. We formulate two hypotheses:

H1a: Employers hiring for specialized occupations as opposed to non-specialized occupations less often required ascribed characteristics.

H1b: Employers hiring for higher-status occupations as opposed to lower-status occupations less often required ascribed characteristics.

Industrialization and the structural changes in the labour market were accompanied by a number of socio-economic processes, such as changes in the organization of work, educational expansion, mass communication, mass transport and value changes. In the following we will discuss how these processes are assumed to have reduced ascription-based hiring preferences.

The mechanization of industrial production decreased ascription-based selection by changing the organization of work in the company setting. Capital intensification and managerial capitalism caused an increasing number of large enterprises to emerge (Bloemen, Kok and van Zanden 1993). Enterprises such as Shell (founded in 1890) and Phillips (founded in 1891), were established, as were many more medium-sized enterprises (van Gerwen and de Goey 2008). Specific configurations of machinery required firm-specific skills (Owen 2004). Companies therefore aimed at hiring a trainable workforce willing and able to learn those firm-specific skills and able to retrain to adjust to the continual, rapid and widespread changes in production methods and products.

To secure such a workforce, internal labour market structures (Doeringer and Piore 1971, Mitch, Brown and van Leeuwen 2004) were established. Companies invested more in the selection of employees to be able to compete in the market place. Hiring was organized more systematically and more bureaucratically. Often, unified rules and standards for hiring employees were applied. Typically, for firms with internal labour market structures the recruitment into the firm was very selective. In return, employees with the potential to be trained and retrained during their career were offered the prospect of a permanent position. Ascribed characteristics were not particularly revealing indicators of trainability and long-term performance and therefore lost their importance in the selection of employees.

Educational expansion offered employers a wider choice of educational qualifications in the labour force to choose from in order to hire the best-qualified worker for the job. An increasing share of the population attended secondary and even tertiary education. From 1860 onwards, specialized artisan schools, commercial schools, domestic service training and many other types of vocational school emerged (Boekholt and de Booy 1987: 182). In order to decrease the costs of firm-specific training employers were expected to increasingly use educational qualifications as selection criteria.

Educational expansion is also expected to have contributed to the development of a shared culture that would make the cultural characteristics of potential employees less efficient as selection criteria. A larger share of the population spent more time together in schooling, which caused an assimilation of basic knowledge, skills and behaviour. Diminution of regional, ethnic and class differences in attitudes and behaviour made it less necessary and informative for employers to select based on these criteria (Treiman 1970).

The rise of mass communication and mass transportation contributed to the weakening of the ascriptive factor in hiring by enabling employers and employees to access information

about job candidates and job opportunities respectively outside their social networks (Treiman 1970). Mass communication increased rapidly, post offices began to distribute newspapers carrying jobs advertisements to a wider geographical area (Zijdeman 2010). The rise of mass transportation is also assumed to have weakened the influence of ascribed characteristics by enabling greater geographical mobility. In more mobile societies the ascriptive component in selection is reduced as more people are able to live and work outside their own community, in which everybody knows everyone else and people are easily judged by their social background or religious affiliation. Ascribed characteristics such as social background became less informative criteria for employers and, due to the increase in the size of the pool of potential employees, an applicant's own talents and skills became more important for selection into an occupation.

According to Treiman (1970), industrialization, educational expansion and other processes were accompanied by a dissemination of universalistic values. Such values stress that all individuals are equally worthy and should be judged on their efforts, skills and talents rather than in terms of ascriptive characteristics such as social background. In non-industrial societies ascribed characteristics were the primary determinants of attainment (Kerr *et al.* 1960). In industrial societies, employers (and employees) are believed to have embraced universalistic values. The spread of universalistic values is thought to have decreased the importance of social background for selection into occupations (Kerr *et al.* 1960, Inkeles 1960, Form 1979).

To summarize, in contexts in which modernization processes were more advanced, employers are expected to have selected less based on ascribed characteristics for all positions.

H2: Employers hiring in contexts in which modernization was more advanced selected on ascribed characteristics less often.

6.3 Data

6.3.1 Data collection and sample strategy

In 2006 the Dutch Royal Library (www.kranten.kb.nl) embarked on a large-scale project to digitize newspapers from 1618 up to the present; this project is still in progress. From the selection so far made available by the Royal Library we chose three newspapers: *Het Nieuws van den Dag: de kleine Courant*, *Nieuwe Rotterdamsche Courant* and the *Nieuwe Tilburgsche Courant*. In addition, we selected the *Leeuwarder Courant* and *Rotterdamsch Nieuwsblad*.²⁶ The *Leeuwarder*

²⁶ The *Rotterdamsch Nieuwsblad* is also included in the selection being digitized by the Royal Library. During the period of data collection, the publication being prepared by Rotterdam's municipal archive was at a more advanced stage of completion, and we therefore took the issues from its website: <http://www.gemeentearchief.rotterdam.nl/collectie/rotterdamsch-nieuwsblad>.

Courant is a general newspaper for a large region in the north of the Netherlands and has been digitized and published by the Stichting Digitaal Archief Noord-Nederland [Digital Archive North-Netherlands Foundation] (SDANN). These newspapers cover a variety of religious and social subgroups within Dutch society. The selected newspapers include liberal, socialist, Catholic²⁷ papers, as well as newspapers for the general public. Furthermore, the readership of the newspapers includes higher and lower social classes, while different geographical regions are covered too. Table 6.1 presents the political and religious orientation as well as information on the social class and geographical spread of the readership of the selected newspapers. The research period starts in 1869 and ends just before the Second World War. In 1869 a tax on newspapers was abolished, and newspapers became a more important medium in people's lives for information, entertainment and job searching (van Vree and Broersma 2009).

We aimed to collect a sample of advertisements from each newspaper for every tenth year, but we did not completely succeed in that aim. Because the digitization and publication project of the Royal Library is still underway, not all years for which a newspaper was selected for inclusion in the sample of the Royal Library have actually been published on its website yet. The sample of newspaper issues we collected is based on the issues digitally available to us in the period September 2011 to December 2011. The number of issues of a newspaper varied because some newspapers were published daily, others once or twice a week. Also, the number of advertisements differed across newspapers and also fluctuated across issues of the same newspaper.

To avoid an oversampling or undersampling of job advertisements from specific months, periods or days of the week, we took a stratified sample of newspaper issues to produce a week for a given newspaper in which the seven days of the week were all selected from different months. The first day of the week could be a Wednesday in week 7, the following randomly chosen day a Friday in week 14 of the same year. In principle, all advertisements of a selected issue are included in the sample. Only in case an issue would proportionally contribute too many advertisements to the sample, we chose to restrict the maximum number of advertisements from a single newspaper issue to 60. For issues with more than 60 advertisements, we chose a random sample of 60 advertisements.

Table 6.2 provides an overview of the number of advertisements collected from the different newspapers over the research period.

²⁷ Whereas Catholics in Dutch society had their own newspapers, Protestants read liberal newspapers such as the *Nieuwe Rotterdamsche Courant*.

Table 6.1 Newspapers included in the sample, and their characteristics

Newspaper	Political and religious orientation	Social class of readership	Region
<i>Het Niems van den Dagg: de kleine Courant</i>	General	Lower	National, Amsterdam-based
<i>Rotterdamsch Niemsblad</i>	General	Lower and middle	Rotterdam area
<i>Nieme Rotterdamsche Courant</i>	Liberal	Higher	National, Rotterdam-based
<i>Nieme Tilburgsche Courant</i>	Catholic	Lower	Tilburg area
<i>Leenwarder Courant</i>	Liberal	General	Friesland

Table 6.2 Number of advertisements per newspaper

Newspaper	1870-1880	1881-1890	1891-1900	1901-1910	1911-1920	1921-1930	1931-1940	Total N=2194
<i>Het Niems van den Dagg: de kleine Courant</i>		1890 (N=223)	1900 (N=136)	1910 (N=54)				413
<i>Rotterdamsch Niemsblad</i>			1894 (N=34)	1904 (N=118)		1929 (N=240)	1939 (N=182)	574
<i>Nieme Rotterdamsche Courant</i>				1910 (N=74)	1919 (N=199)	1929 (N=101)		374
<i>Nieme Tilburgsche Courant</i>	1880 (N=28)						1939 (N=139)	167
<i>Leenwarder Courant</i>	1870 (N=118) / 1880 (N=46)	1890 (N=54)	1900 (N=122)	1910 (N=101)	1920 (N=141)	1930 (N=84)		666

6.4 Comparison of occupations mentioned in the newspapers with the occupational structure in the Netherlands

As in contemporary labour markets, in industrializing labour markets employers and employees used different channels to recruit employees or find employment. Job seekers consulted advertisements in newspapers or asked family, friends and acquaintances about vacancies (van Gerwen 2000). Vacancies in larger companies were sometimes filled by job seekers who came directly to the factory gates. After 1910, the use of employment agencies became more common. A study of the role of placing services in the period 1870 to 1940 (de Kort 1940) estimated that in the late 1930s around 15% of placements were arranged through commercial employment agencies and 20% through public employment agencies. Commercial agencies charged both the employer and the employees for their services. Moreover, commercial and public service agencies focused on urban centres.

Throughout the whole period, the use of advertisements and social networks remained important channels for finding a job. De Kort noted an increase in the number of job advertisements between 1930 and 1940 (de Kort 1940: 182). One reason was that advertisements were a direct and affordable medium for both employees and employers. Moreover, newspapers also reached rural areas and were therefore a means for employers in rural areas to find employees.

A comparison of the occupations in the job advertisements with the occupational structure of the Netherlands provides clues to the coverage of our source. We selected the 20 most frequent occupations in the Historical Sample of the Netherlands (HSN) and the 20 most frequent occupations in job advertisements. The HSN is a sample of individuals representative of the Dutch population born between 1850 and 1922 (Data Set Life Courses Release 2010.01). In order to assess in how far the jobs advertised in our sample correspond to the occupational structure of the Netherlands in the period under study, we compare the distribution of occupational groups in the HSN with that in the job advertisements.²⁸

The occupational titles given in the advertisements have been coded in accordance with the Historical International Standard Classification of Occupations (HISCO) (van Leeuwen, Maas and Miles 2004). This taxonomy is based on the 1968 International Standard Classification of Occupations created by the International Labour Office (ISCO68 1969). The most detailed version of HISCO utilizes a five-digit code, but for comparison with the HSN data we grouped all occupations into the more general three-digit HISCO code. In the HISCO scheme, clusters of similar occupational groups are organized into 298 occupational three-digit groups. For example, occupational group 8-95.30 refers to Ceramic Painter and 8-95.60 to Ceramics Dipper. They are part of the three-digit group 8-95 Glass and Ceramics Painters and Decorators (van Leeuwen, Maas and Miles 2002).

²⁸ The HSN data include multiple measurements of an individual's occupational status throughout their life course. Only the first occupational measurement of individuals was selected for the comparison with the job advertisements.

Figure 6.1 presents a comparison of the 20 most frequently appearing HISCO three-digit groups in the job advertisements and in the HSN data. The most frequent occupations in both the HSN and job advertisements are maids and domestic service occupations. In both sources this group accounts for between 20% and 25% of occupations. Most occupations cover between 1% and 3% of the total in both sources. There are some exceptions. Farming occupations were hardly ever advertised in newspapers, but they accounted for about 8% of the occupations in the HSN. Family networks and occupational associations were probably the main channels through which vacancies in the agricultural sector were filled (de Kort 1940). Unskilled workers comprised around 12% of the HSN data, but they were represented hardly at all in the job advertisements. It may be that they were easy to find through social contacts. Bakers, cooks and salesmen were represented to a larger extent in the newspaper advertisements than in the HSN. In conclusion, with just a few exceptions, the most common occupations among the population were well represented in the advertisements.

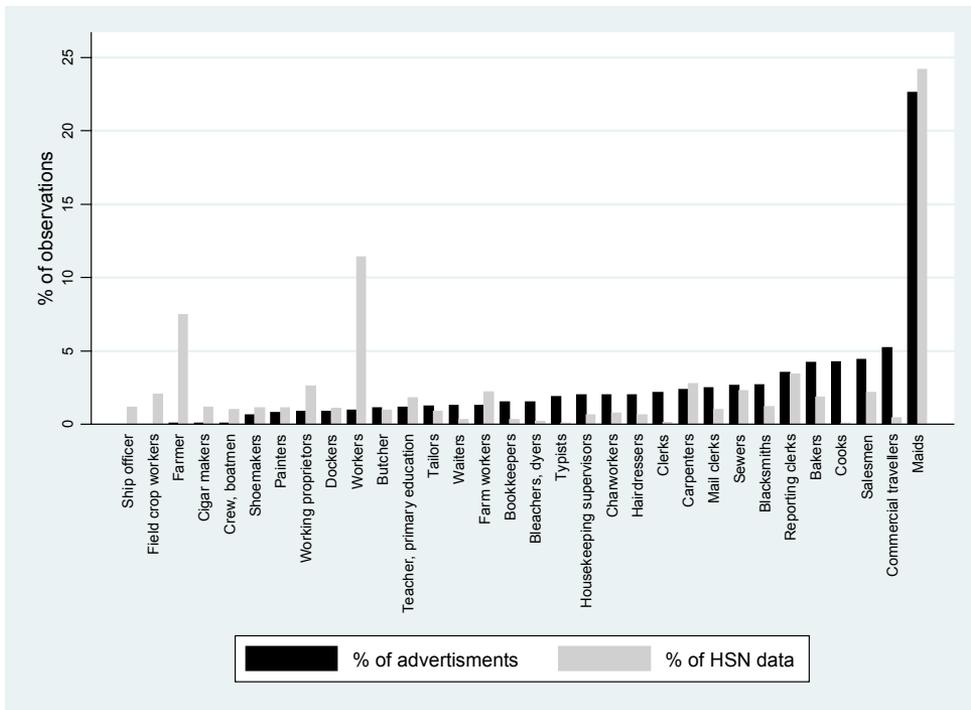


Figure 6.1 Comparison of the distribution of occupational groups (HISCO 3 digits) across the population HSN (N=13,730) and across the job advertisements (N=2,194), 1870-1939

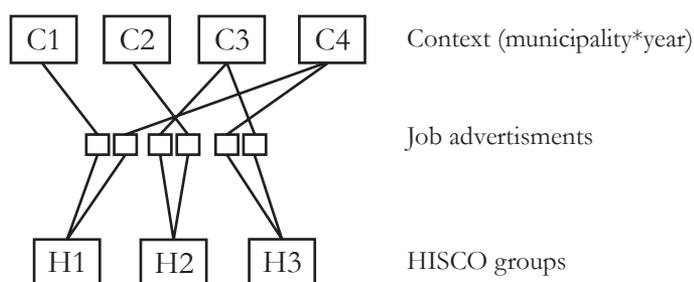
6.5 Data structure and method

Job advertisements generally included, in addition to information on the vacancy, information on the place of work. The information on the place of work allows us to study the effect of regional modernization on recruitment based on ascribed characteristics.

The data structure is complex because we distinguish three levels of analysis. We explain the use of ascribed requirements in terms of differences between contexts²⁹ for which the job is advertised, differences between occupations and differences between the advertisements themselves.

Figure 6.2 illustrates a simplified version of our data structure. We will use cross-classified multilevel models to analyse our data, because our individual advertisements are nested both in occupations (HISCO codes) and in varying contexts. We cannot employ a classic hierarchical nesting structure because not all advertisements for a given occupation are necessarily nested within the same “context”.

Strictly speaking, the nesting of job advertisements within municipalities and across years constitutes a cross-classified structure in itself. Advertisements in one municipality in different years are more similar to one another than advertisements in two different municipalities taken from the same year. In addition, two measurements of modernization taken in two succeeding years have more in common than two measurements of modernization processes taken ten years apart. However, software limitations make it difficult to estimate models that take this structure into account.



HISCO1: one advertisement in Context 1, one in Context 4

HISCO2: one advertisement in Context 3, one in Context 2

HISCO3: one advertisement in Context 3, one in Context 4

Figure 6.2 Nesting structure of the data

²⁹ “Contexts” are operationalized as municipalities in a certain year: Utrecht in 1880 for example, and Amsterdam in 1881.

6.5.1 Dependent variable

Ascribed characteristics are defined in the literature as characteristics that an individual did not acquire himself or herself but that came with their status at birth or that are features such as ethnicity or race that cannot be changed by individual effort. Achieved characteristics are qualifications, skills and capacities that individuals acquire or learn themselves, such as their educational qualifications (Blau and Duncan 1967). Although the logic of industrialism thesis refers to ascription and achievement, the theoretically more interesting distinction here would seem to be slightly different. Some of the characteristics that would normally be considered ascribed can be directly related to the execution of a task. According to modernization theory, selection on such a characteristic should increase and not decrease. It should therefore be counted as an achieved characteristic here. One example are physical features, such as strength, which are to a large extent ascribed. Yet, for a maid in a nineteenth-century household, being strong was an important prerequisite for the execution of household tasks in the absence of home appliances.

The opposite also occurs. Some characteristics though definitely achieved are not related to job performance at all. An example is marital status. This is a requirement that is sometimes mentioned in job advertisements, but it was not directly related to carrying out an occupation. Thus, although people generally decide themselves whether or not to get married, we will treat marital status for present purposes as an ascribed characteristic.

Thus, to test the hypotheses on changes in the hiring preferences of employers we define ascribed characteristics as characteristics that are not directly related to the execution of an occupation.

In the analyses the dependent variable is the proportion of the characteristics that a job advertisement contains which are ascribed. All requirements mentioned in the advertisements were coded in accordance with the following categories: experience, effort, formal, professional or vocational qualifications, numeracy and literacy, languages and physical features. These are treated as achieved characteristics. Ascribed characteristics are the following: religious affiliation, morals, marital status, social background, appearance, age and other personal characteristics not related to the job.

There are two requirements for which a distinction is not that easily made, namely age and experience. It may have been the case that employers asking for an older employee were in fact looking for experience. Whereas in the literature experience is sometimes approximated by age, we distinguish the two and treat experience as an achieved and age as an ascribed characteristic. In the advertisements the age requirements seem not to imply experience.

Table 6.3 Examples of achieved and ascribed requirements in job advertisements, and as a proportion of all requirements specified (N=2,194)

Ascribed requirements	%	Achieved requirements	%
Age <ul style="list-style-type: none"> 16-30 jaar – between 16 and 30 years old beneden 16 jaar – younger than 16 omstreeks 40 a 50 jaar – around 40 to 50 years old 	18	Experience <ul style="list-style-type: none"> reeds als zoodanig gewerkt hebben – experience in such work bekend met dergelijke werkzaamheden om leiding te geven – experience in such work and able to assume supervisory role 1 a 2 jaar bij het vak – 1 to 2 years' experience in the profession 	46
Religion <ul style="list-style-type: none"> PG – Protestant RC – Catholic Lib. protestant – Liberal Protestant 	13	Effort <ul style="list-style-type: none"> geschikt – suitable ijverig – eager degelijk – hard-working 	20
Morals <ul style="list-style-type: none"> fatsoenlijk – respectable beschaafd – well-mannered taktvol optreden – tactful manners 	4	Physical features <ul style="list-style-type: none"> flink – well-built sterk – strong energiek – energetic 	12
Marital status <ul style="list-style-type: none"> gehuwd – married alleenstaand – single weduwe zonder kinderen – widow without children 	2	Languages <ul style="list-style-type: none"> Frans, Duits, Engels – French, German English moderne talen strekt tot aanbeveling – modern languages would be an advantage oude talen – classical languages 	5
Other personal <ul style="list-style-type: none"> uit de provincie – from the province zacht humeur – even temper vrij van ziekten – free of disease 	2	Formal, vocational, professional qualifications <ul style="list-style-type: none"> 5-j HBS OHS en of HHS – 5-year secondary schooling diploma Ambachtschool – craft school diploma diploma boekhouden M.O. – secondary schooling, accountancy diploma 	4
Social background <ul style="list-style-type: none"> beschaafden stand – mannered descent van nette familie – from a decent family goede afkomst – good background 	1	Literacy, numeracy <ul style="list-style-type: none"> goed kunnen schrijven – good writing skills accuraat rekenen – accurate calculation skills net handschrift – neat handwriting 	2
Appearance <ul style="list-style-type: none"> flink uiterlijk – tidy appearance goed uiterlijk – attractive appearance beschaafd uiterlijk – representative appearance 	0.4		

The age requirements are formulated rather vaguely, as the examples in table 6.3 illustrate (“between 16 and 30 years old”, “younger than 16” or “around 40 to 50 years old”). Employers requesting experience formulated their requirements rather specifically by referring to skills or to how many years an applicant should have worked in an occupation.³⁰

Although some advertisements include information on the preferred gender of an applicant, it is not always clear whether there was a genuine preference for, for example, a male applicant or whether the male term was being used as a generic term for convenience and women were equally welcome to apply. In additional analyses we analysed specifications of the dependent variable with gender as an ascribed characteristic. The results are substantively very similar; we do not therefore treat gender as an ascribed characteristic, and we include it as a control variable in the analyses.

Table 6.3 provides an overview of the achieved and ascribed characteristics and the percentage of all requirements they accounted for. It also provides three examples for each category of requirements from the job advertisement database. Of all the advertisements, 461 include neither achieved nor ascribed characteristics. These are treated as advertisements including no ascribed characteristics.

6.5.2 Explanatory variables

Specialized occupations: The advertised occupations were divided into specialized and non-specialized occupations (1/0). Those in specialized occupations perform tasks which are distinct from more general tasks. The subtasks are often more complex because special machinery or skills are required to perform them. The process of specialization in the production of goods is a counterpart to the increase in the number of specialized occupations, occupational titles and employees (van Leeuwen, Maas and Miles 2002). The distinction between special and general occupations is inherent in the HISCO structure. Occupations for which the five-digit HISCO code ends in 00, 05 or 10 are generally non-specialized occupations. All occupations with HISCO codes that end in other digits are specialized occupations. For example, in the HISCO unit group “Launderers, Dry-Cleaners and Pressers” Launderer, General (“Performs duties such as washing, drying and ironing clothing, textile fabrics and similar articles in a laundry or in private house”) has the HISCO code 5-60.10. Specialized occupations in this group include the occupations Dry-Cleaning Machine-Operator (“Operates mechanical equipment to dry-clean, with a chemical solution, clothing, textile fabrics and similar articles”) (5-60.30) and Wardrobe Mistress (Stage and Studio) (“Cares for costumes of members of theatrical, television or motion

³⁰ As a control, we also ran the analyses with age as an achieved characteristic (not shown). The results were very similar.

picture production cast") (5-60.80).^{31 32}

Status of the advertised occupation: The status of the advertised occupations is measured using the recently developed historical status scale HISCAM (Lambert *et al.* 2013). The same estimation techniques used for the contemporary CAMSIS scales (Prandy 2000) were used too to develop the HISCAM scale. These scales were developed based on the assumption that patterns of social interaction (marriages for instance) between people from different occupational strata are representative of the overall structure of occupational stratification. The HISCAM scale estimated the occupational stratification structure using 1.5 million marriage records from six different countries (Britain, Canada, France, Germany, the Netherlands and Sweden) from 1800 to 1938. The scale ranges from 1 to 99, with higher values indicating higher occupational status. Servants, for example, are assigned a HISCAM score of 10.6. Lawyers receive the highest possible score, 99.0, and tailors are assigned a position in the middle, with a score of 49.7.³³

6.5.3 Control variables at the job advertisement level

Newspaper: This variable indicates in which newspaper the advertisement was published. The reference category is *Het Nieuws van den Dag*.

Gender: Employers often indicate whether they are looking for (1) a female candidate, (2) a male candidate or whether (3) both sexes can apply. Of the advertisements, 439 include no clear indication of the sex of potential candidates (4). The variable "gender" is included in selected models. Category 1, female, is the reference category.

Year/10: We controlled for year in all our models. The variable "year" starts in 1870 and is divided by 10.

³¹ HISCO codes belonging to the general categories end in the digits 00, 05 or 10. The codes for the following occupations end in 00, 05 or 10 but are, in fact, specialized occupations: 0-62.10, 0-66.10, 0-72.10, 0-73.10, 0-74.10, 0-77.10, 0-83.10, 1-21.10, 1-22.10, 1-23.10, 1-24.10, 1-29.10, 2-01.10, 2-02.10, 2-22.10, 4-32.00, 5-83.00, 6-41.00, 6-22.10, 6-24.00, 6-24.10, 6-25.10, 6-26.10 and 7-57.10. The codes for the following occupations do not end in 00, 05 or 10, but are general occupations: 1-30.20, 1-30.30, 4-10.25, 4-51.25, 5-10.20, 6-11.15, 6-21.20, 8-12.08 and 9-37.15. For a more detailed discussion of the distinction between specialized and non-specialized occupations based on the HISCO coding see van Leeuwen and Maas 2007.

³² We tried an alternative operationalization of specialized occupations in which occupations are coded as specialized when workers used mechanized labour, using new sources of energy (steam, gas, electricity), were working in mass production or in the design and maintenance of complex machinery. Because the results were very similar, we present only the results with the coding into specialized and non-specialized occupations based on the HISCO system.

³³ HISCAM assumes that the relative status positions of occupational groups do not change over time. A test of this assumption showed that changes in status are relatively small and unsystematic. See Lambert *et al.* 2013.

6.5.4 Context variables

Of the 2,194 advertisements in our sample, 622 included no information on place of work. In 195 of these advertisements, the address of an agency or the office of the newspaper were given. In these cases, the addresses provided were taken as the place of work. The remaining 427 advertisements gave no indication of the place of work. Of these, 321 advertisements were published in newspapers that had a local focus on the cities of Rotterdam, Tilburg or Amsterdam, and in those cases the place of publication of the newspapers was taken to be the place of work. *The Leeuwarder Courant* is a regional, Frisian newspaper and also includes many advertisements for the rural areas in the vicinity of the city of Leeuwarden. For the vast majority of advertisements in this newspaper, location information is provided. For 106 advertisements, information on the place of work is missing, though it was most likely somewhere in the province of Friesland. It is likely, furthermore, that when they sought personnel in rural areas employers would have stated that clearly. Therefore, for this newspaper too, with its more regional focus, we assign the city of Leeuwarden as the place of work for advertisements unless a different place was specifically given.

6.5.5 Contextual characteristics

Post office: We approached mass communication in our analysis using a variable reflecting whether or not there was a post office in a given municipality in a given year. Post offices held special importance in the Netherlands in the late nineteenth and early twentieth centuries. Letters, telegrams, fashion brochures and newspapers were distributed through post offices. We derived data on post office locations from the annual reports of the Staatsbedrijf der Posterijen, Telegrafie en Telefonie (PTT) [State Post Office, Telegraph and Telephone Company] (see also Zijdeman 2008).³⁴

Train station: We retrieved data on the years that each train station in the Netherlands opened and closed from the website <http://www.stationsweb.nl/>. The data cover the period 1870 to 1939. Using this information, we created a variable that indicates whether there was a train station (1) or not (0) in any given year.

Educational expansion: To capture educational expansion, we used the number of students in a municipality enrolled in secondary education per 100 inhabitants. Even before the first mandatory schooling law in 1901, participation in basic schooling was high in the Netherlands. Rates of participation in secondary education are therefore a better indicator of educational expansion than participation in elementary schooling. We consulted the annual reviews *Verslagen*

³⁴ The data on the presence of post offices cover the period up to 1918. By then, almost all municipalities had a post office; it was only after 1930 that some post offices were closed (Hogesteeger and Kramer 1995).

voor het hoger, middelbaar en lager onderwijs of Dutch education for the period 1860 to 1930 to obtain information on educational expansion. Every five years, the number of students registered for any type of secondary education was recorded at the municipal level. Although *gymnasia* (secondary school) students are registered in the reviews of higher education, we included them here because the *gymnasia* in practice merely prepared students for higher education (Mandemakers 1996). For 1939 no information on the number of secondary school pupils is available. Therefore in the results section models including this variable are presented for the period 1860-1930.

Secularization: We measured the spread of universalistic values by the number of people per 1,000 inhabitants who indicated that they had no religious affiliation. This is only an indirect measure. However, it can be argued that religious – in this case Christian – values are not universalistic in at least two ways: they distinguish people of their own religion from others, and they place great emphasis on traditional family life (Wilson and Sandomirsky 1991). Both aspects may affect the relevance of ascribed characteristics such as marital status and religious affiliation. During the period under study, religion was highly important to many people in the Netherlands. But as early as the second half of the nineteenth century a process of secularization started which continued after 1939, the end of the period being studied here. Knippenberg (1999) describes the steady increase in secularization as a trend even in its progression and attributes it to a number of modernization processes. He argues that institutional differentiation, educational expansion, poor relief and the rise of the modern welfare state all contributed to the decrease in religious affiliation across Dutch society. We derived our secularization variable from the Historical Ecological Database for Dutch municipalities for every tenth year. For a description of the data, see Beekink *et al.* (2003). For the period 1870 to 1939, for which no data were available, we estimated the degree of secularization so that we could analyse the job advertisements from these years as well. Our estimates are the weighted means of the number of secularized inhabitants for the years for which information on the number secularized inhabitants was retrieved. For example, our estimate of the number of secularized inhabitants in 1919 is equivalent to the sum of the number of secularized inhabitants in 1910 and nine times the number of secularized inhabitants in 1920, divided by ten.

Top 100 companies: To capture the presence of enterprises which probably had internal labour market arrangements we use information on the locations of the top 100 Dutch companies. Top 100 companies are enterprises which in terms of total assets are the 100 most successful companies in the Netherlands. Ideally, one would like to include a measure of how many companies had ILM structures; however, this information is not available. Bloemen, Kok and van Zanden's (1993) study of the top 100 Dutch companies provides us with the information we require for the years 1913 and 1930. They argued that not only were the top 100 companies likely to use unified hiring strategies, they also acted as role models for other companies in this respect.

Table 6.4 Summary statistics for variables in the analyses

	Min	Max	Mean/%	S.d.
Variables at level of advertisement (N=2194)				
Proportion of ascribed characteristics	0	1	0.19	0.32
Year/10	0	6.90	4.19	1.97
Variables at level of occupation (N=244)				
Status (HISCAM)	0	99	49.16	22.75
Specialized (1/0)			70.34	
Context indicators (N=365)				
Population in 1000s	0.60	757.38	48.21	115.55
Train station (1/0)			60.86	
Post office (1/0)			57.37	
Secularization per 1000 inhabitants	0	436.83	64.28	82.21
Educational expansion per 100 inhabitants (N=353)	0	3.93	0.72	0.88
Top 100 company (1/0) (N=353)			22.71	
Control variables				
Gender				
Female			41.73	
Male			37.12	
Both			1.36	
Unknown			19.79	
Newspaper				
<i>Het Nieuws van den Dag</i>			18.82	
<i>Leeuwarder Courant</i>			30.36	
<i>Nieuwe Rotterdamsche Courant</i>			17.05	
<i>Nieuwe Tilburgsche Courant</i>			7.57	
<i>Rotterdamsch Nieuwsblad</i>			26.21	

To Bloemen, Kok and van Zanden's (1993) data we added the founding years and locations of the main establishments of the companies involved. Companies included in the 1913 or 1930 list were included for the respective year. Companies included in the 1913 list and established before 1913 were included as a top 100 company from the year of their foundation.³⁵ Companies founded after 1913 and included in the 1930 list were included for the years between their foundation and 1930 as well. Where a company was on the list in 1913, it is included in the top 100 from the years of its foundation onwards. If it was on the list in 1930 and founded before 1913 but not on the list in 1913, the variable is coded 1 for 1930 only.

For the advertisements from 1939 no information on the existence of top 100 companies is available. Therefore in the results section separate models including this variable are presented, covering the period 1870 to 1930.

6.5.6 Contextual control variables

Urbanization: We derived data on urbanization from the Historical Ecological Database (HED) and the Historical Database of Dutch Municipalities (HDNG) for the period 1865 to 1928. In all of our models that include indicators of modernization, we control for urbanization. Descriptive information on the variables is provided in Table 6.4.

6.6 Descriptive results

The first aim of this study is to describe the requirements that employers specified in job advertisements in the Netherlands from 1870 to 1939. Figures 6.3 and 6.4 present the trend in the reference to achieved and ascribed characteristics in job advertisements over the period 1870 to 1939. Experience was the characteristic most often required. In the period 1870 to 1880 almost 60% of all advertisements mentioned experience. This proportion decreased to around 40% (1891-1900), after which it steadily increased to around 54%. Effort was mentioned in very few advertisements (around 1%) in the first period. In the period 1890 to 1900 this proportion increased to around 23%, and fluctuated with an increase to *c.* 28% in the last period being researched here. Physical features of applicants were initially (1870-1880) mentioned in around 8% of all advertisements. This proportion increased, levelling off at around 12% by the end of the nineteenth century, a figure at which it remained for the rest of the period. Languages, qualifications and numeracy/literacy generally accounted for less than 10% advertisements throughout the whole period. There was a peak in 1911 to 1920, at almost 20%.

³⁵ Chandler (1990) argues that only after 1880, with the second industrial revolution and its technological innovations, did companies begin to become larger and change their form of organization, or new companies emerge with these new hiring strategies. We therefore tried out alternative specifications of this variable, for instance regarding the years prior to 1880 as having no top 100 companies. Analyses with the different variables resulted in substantially very similar results.

The trend in the occurrence of ascribed characteristics is presented in figure 6.4. Overall, of the seven ascribed characteristics none is mentioned in more than 30% of all advertisements; only religion and age are referred to in more than 10% of the advertisements. Initially, religion was mentioned in around 12% of all advertisements. References to religion increased to 18-19% in the periods 1881-1890 and 1891-1900. In the periods thereafter religion was mentioned in *c.* 8% of advertisements, and only in 1931-1939 did the proportion of advertisements mentioning religion again increase, to 11%. Initially, age requirements were mentioned in around 11% of all advertisements, and this number steadily increased, to 30%, in the last period. Marital status was mentioned in 9% of all advertisements from the first period; that proportion gradually declined to *c.* 2% over the entire period being studied here. Moral requirements were mentioned in around 4% of advertisements, with a modest increase in the period 1891 to 1900. Requirements referring to other personal characteristics, social background and appearance were mentioned in *c.* 2 to 3% of all advertisements during the whole research period.

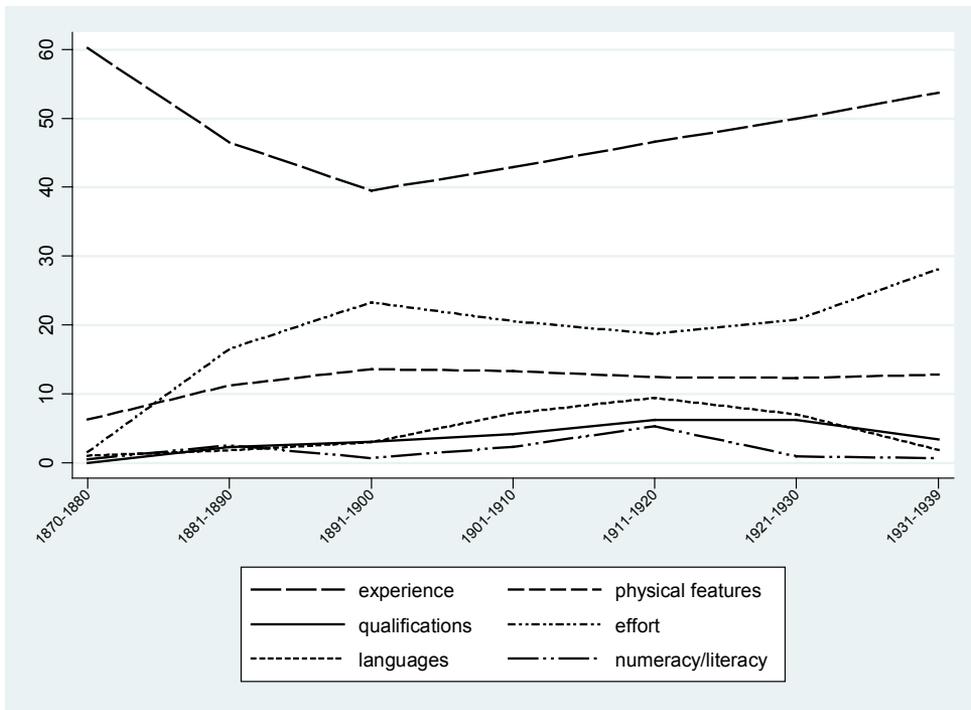


Figure 6.3 Percentage of advertisements including at least one of the achieved characteristics, 1870-1939

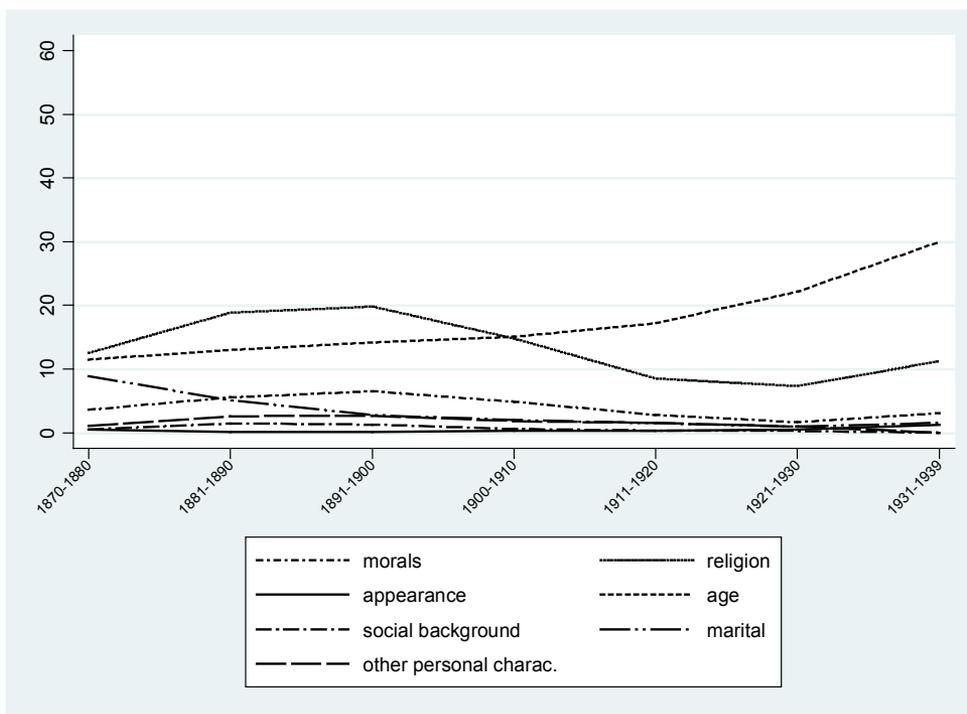


Figure 6.4 Percentages of advertisements including at least one of the ascribed characteristics, 1870-1939

It is apparent from these figures that throughout the research period considerably more achieved than ascribed characteristics were mentioned in job advertisements. The trends presented in figured 6.3 and 6.4 may however be influenced by the selection of newspapers in the different time periods. Figures 6.5a to 6.5e indicate that this is not the case. Figures 6.5a to 6.5e present for each of the five newspapers the proportion of ascribed and achieved requirements mentioned in job advertisements in a given period. The proportion of ascribed characteristics ranges between 10 and 30. The proportion of achieved characteristics ranges between 40 and 70. There was no clear trend towards fewer ascribed characteristics in any of the newspapers.

From the descriptive information it becomes clear that, in all periods, for all newspapers, achieved characteristics were mentioned more frequently. Moreover, no clear trend towards a reduction in ascription-based selection can be identified, although in *Het Nieuws van den Dag* (figure 5a), *Leeuwarder Courant* (figure 5b) and *Rotterdamsche Nieuwsblad* (figure 5e) a slight reduction in ascribed requirements can be seen.

Figures 6.3 to 6.5e illustrate that throughout the period being studied job advertisements included more achieved than ascribed characteristics. At the start of the research period the proportion of ascribed characteristics was rather low, and there was no clear trend towards

a reduction in ascription-based requirements. Regarding a reduction in ascription-based selection, the only notable trend was the decrease in how often marital status was referred to as a requirement.

In sum, the descriptive results indicate that the selection of employees through job advertisements tended to be achievement-based throughout the whole period. To study variations across complex and higher-status occupations and more or less modernized municipalities, we estimated a number of cross-classified multilevel models.

Figure 6.5a

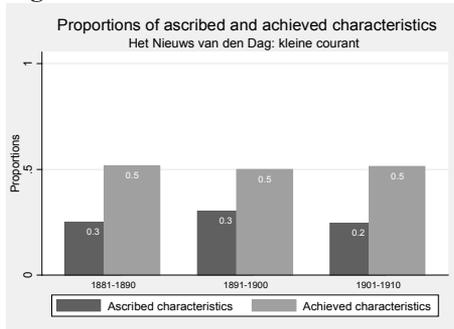


Figure 6.5b

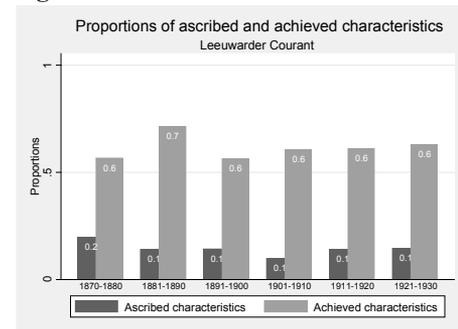


Figure 6.5c

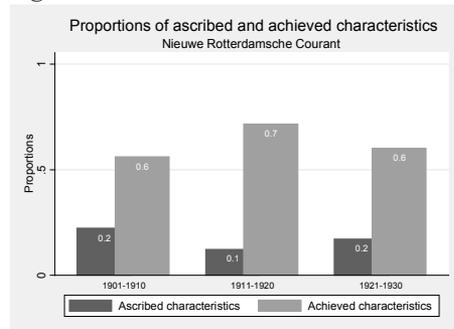


Figure 6.5d

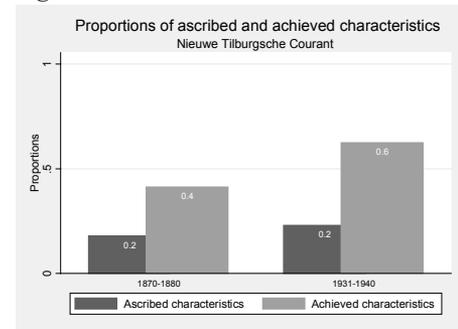
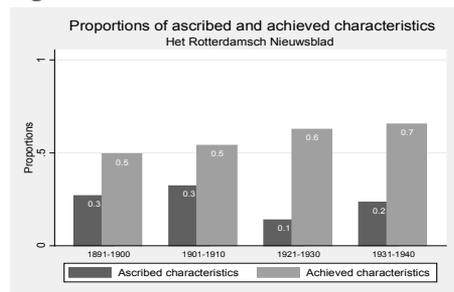


Figure 6.5e



Figures 6.5a–5e Proportions of achieved and ascribed characteristics across period per newspaper

6.7 Explanatory results

Table 6.5 and 6.6 display the results of our cross-classified multilevel models of the proportion of ascribed characteristics in job advertisements in the Netherlands 1870-1939. The “null model” (model 0) shows that most of the variance in the proportion of ascribed characteristics (88.5%) is found between advertisements [$0.092/(0.002+0.010+0.092)$]. Around 2% of the variance is due to differences in the context (year*municipality) for which the vacancy was advertised. The remaining 9.5% of variance is due to differences between occupations (HISCO codes). The constant in model 0 (0.161) indicates that 16% of all requirements are ascribed characteristics.³⁶

In model 1, year is added to the model. With every decade, the proportion of ascribed characteristics decreased by 1%, thus from 1870 to 1939 the proportion of ascribed characteristics decreased by a considerable 7.7%.

Hypotheses 1a and 1b, which predict that advertisements for higher-status and specialized occupations required a lower proportion of ascribed characteristics, are tested in model 2. There is no significant effect of whether a job is specialized on the proportion of ascribed characteristics; thus model 2 does not lend support to hypothesis 1a. Hypothesis 1b is supported, as we find that advertisements for higher-status jobs included proportionally fewer ascribed characteristics. Advertisements for jobs with a ten-point higher HISCAM status have a 0.02 lower proportion of ascribed characteristics. Adding these predictors to the model reduces the variance at the HISCO level from 0.010 to 0.009. The variance at the level of the advertisement and at the context level remains the same. That means that the status of an occupation and whether it is specialized explain only a small part of the variance in the proportion of ascribed characteristics between occupations.

In model 3, controls for the newspaper in which an advertisement was published and the gender of the potential job candidate are added.³⁷ Adding these controls causes the time trend to become insignificant, and the variance at the level of the advertisement increases slightly from 0.092 to 0.093.³⁸

³⁶ In additional analyses (not shown) we ran the models with alternatively specified dependent variables. In one version we have excluded the 481 advertisements with no requirements. We also ran the models with a dichotomous dependent variable, indicating whether at least one ascribed requirement was mentioned. Both specifications lead to very similar substantial results.

³⁷ For the models that include the controls for gender and newspaper, Appendix A presents the coefficients of the two variables.

³⁸ In additional analyses (not shown) we added gender and newspaper separately to the model to assess due to which control variable the year/10 effect becomes insignificant. After adding gender the coefficient of year/10 remains equal (-0.011) but the standard error increases (0.006). Adding the dummy for newspaper separately increases the coefficient (-0.012) as well as the standard error (0.006) of the year/10 variable. These results indicate that both the gender of a potential job candidate as well the newspaper caused the year effect to become insignificant.

Table 6.5 Cross-classified multilevel models of the proportion of ascribed characteristics

Fixed part	Model 0	S.E.	Model 1	S.E.	Model 2	S.E.			
Constant	0.161	0.013	**	0.204	0.022	**	0.299	0.053	**
Year/10				-0.011	0.005	*	-0.010	0.005	*
HISCAM							-0.002	0.001	*
Specialized (1/0)					0.030		0.030	0.024	
Context indicators									
Population in 1,000s									
Train station (1/0)									
Post office (1/0)									
Secularization per 1000									
Top 100 company (1/0)									
Educational expansion ²									
Random Part									
Context	0.002	0.001		0.002	0.001		0.002	0.002	0.001
HISCO	0.010	0.002		0.009	0.006		0.008	0.008	0.002
Advertisement	0.092	0.003		0.092	0.003		0.093	0.093	0.003
-2*log likelihood:	1093.100			1090.426			1087.457		
Units: Context	365			365			365		
Units: HISCO	244			244			244		
Units: Job advertisement	2194			2194			2194		

*p<.05; **p<.01; (two-tailed tests). Note: year starts to count at 1870. Model 3 to 5 include controls for the newspaper in which the advertisement was published and the preferred gender of the applicant (see Appendix A).

Table 6.6 Cross-classified multilevel models of the proportion of ascribed characteristics

Fixed part	Model 3	S.E.	Model 4	S.E.	Model 5	S.E.
Constant	0.402	0.081	** 0.378	0.082	** 0.374	0.089
Year/10	-0.010	0.006	-0.007	0.007	-0.010	0.008
HISCAM	-0.002	0.001	* -0.002	0.001	* -0.002	0.001
Specialized (1/0)	0.032	0.024	0.030	0.024	0.027	0.024
Context indicators						
Population in 1,000s			-0.000	0.000	-0.000	0.000
Train station (1/0)			-0.010	0.035	0.001	0.038
Post office (1/0)			0.047	0.031	0.049	0.031
Secularization per 1000			-0.000	0.000	-0.000	0.000
Top 100 company (1/0)					0.001	0.036
Educational expansion ⁴¹					-0.001	0.015
Random Part						
Context	0.002	0.001	0.002	0.001	0.002	0.001
HISCO	0.010	0.002	0.009	0.006	0.007	0.002
Advertisement	0.092	0.003	0.092	0.087	0.089	0.003
-2*log likelihood:	1067.978		1070.893		876.008	
Units: Context	365		365		352	
Units: HISCO	244		244		219	
Units: Job advertisement	2194		2194		1869	

* $p < .05$; ** $p < .01$; (two-tailed tests). Note: year starts to count at 1870. Model 3 to 5 include controls for the newspaper in which the advertisement was published and the preferred gender of the applicant (see Appendix A).

³⁹ Students in secondary education per 100 inhabitants.

In model 4 modernization indicators at the context level are added. Population size, the presence of a train station and of a post office and the proportion of secularized inhabitants have no influence on the proportion of ascribed characteristics mentioned in job advertisements. Model 5 includes the two indicators that are measured only up to 1930. Because these cover a shorter period, the number of observations drops to 1,959. Neither indicator, whether or not at least one top 100 company is located in a context and the number of pupils in secondary education per 100 inhabitants, has any significant effect on the proportion of ascribed characteristics in job advertisements.

6.8 Discussion and conclusion

Occupational role allocation is supposed to have fundamentally changed in Western Europe in the nineteenth and twentieth centuries. For the population at large a shift from ascription- to achievement-based selection is thought to have occurred. In this chapter we address this question by studying employers' selection criteria in job advertisements.

We asked whether employers who hired employees for more complex and higher-status occupations were less likely to select on ascribed characteristics. The same question was asked in relation to employers in more modern municipalities. We collected a sample of 2,194 job advertisements from five Dutch newspapers for the period 1870 to 1939. The data include advertisements for 244 different occupations in more than 154 municipalities over a period of 69 years. Modernization processes are measured at the municipal level; they include mass communication, mass transport, value changes and the presence of internal labour market structures.

The first aim of this study was to describe the use of ascribed and achieved requirements in job advertisements. We have shown that in the period 1870 to 1939 advertisements included more achieved than ascribed characteristics. Moreover, there was no clear trend towards less ascription-based recruiting in any of the five newspapers included in the sample. The descriptive results indicate that recruitment through job advertisements was to a large extent achievement based in the 1870s, and remained so subsequently. Also, the explanatory results show that once we take into account the newspaper in which an advertisement was placed and the preferred gender of applicants the time trend towards a reduction in the proportion of ascribed requirements becomes negligible and non-significant.

We addressed our first explanatory question by analysing whether advertisements for higher-status or specialized occupations included a lower proportion of ascribed characteristics. We found this indeed to be the case for higher-status occupations. However, whether the job advertised was specialized or not did not matter for the proportion of ascribed characteristics. Further, the selection into occupations was not influenced by regional modernization processes.

Our findings provide interesting points for discussion. The consistently higher proportion of achieved characteristics and the lack of a clear trend towards less ascription-based selection is somewhat surprising given the theoretical discussion on the shift from ascription- to achievement-based recruiting. It appears that the shift to achievement-based selection predicted to have been concomitant with modernization processes was already under way before that time, at least in certain sectors of the economy in which employers endeavoured to recruit employees through newspaper advertisements. Miles (1993) reports that in the nineteenth and early twentieth centuries job seekers increasingly found work through advertisements, but that, at the same time, the most common way of finding a job was through relatives or family. Potentially, changes in the selection requirements occurred in the selection through channels other than newspaper advertisements. Alternatively, employers might have changed the channels by which they tried to recruit employees, so that overall ascription-based recruiting might still have diminished.

The lack of an effect of specialized jobs and modernization processes on the inclusion of ascribed characteristics in job advertisements might indicate that the motives of employers when recruiting employees are not fully captured by the arguments of the logic of industrialism thesis. We have argued that employers hiring for higher-status and specialized jobs will select less often on the basis of ascribed characteristics. Alternatively, trust in employment relations might have been generated through homophily. Employers might have trusted potential employees more easily where they shared with them similar characteristics seemingly unrelated to a job, such as social background or religious confession (Weesie and Raub 2000).

Value change is expected to have been an important influence on changes in the hiring preferences of employers, yet our measure of value change had no effect in our study. As discussed before, secularization does not perfectly cover the changes in values that we expect to have been responsible for a decrease in ascription-based hiring. Ideally, one would have an indicator that more specifically measures to what extent employers adhered to universalistic values, i.e., to what extent they were convinced that people should not be judged on the basis of characteristics not directly relevant for performance and that should not therefore affect their hiring decisions. That secularization had no effect might possibly have been the result of other processes that took place in Dutch society during the same period. Pillarization, the separation of Dutch society into “pillars” identified with the different political ideologies and religious denominations, might have strengthened the particularistic values of the majority of the population, who were still religious.

Based on the findings and limitations of this study, we propose a number of directions for further research. We have studied a part of the labour market that includes a wide range of occupations. Future research should aim at systematically assessing which employers found employees through other channels, for example through wider kin or family members. Other

sources, such as biographical or autobiographical material, could help us to further study this question. They could potentially provide a wealth of detail on individual working lives that was not preserved in official registers or company archives (Miles 1993, Humphries 2010).

It is recommended that further research be conducted to enable us to improve on our measurements for specialized occupations. Within the group of specialized occupations, there were perhaps occupations that required “new” and institutionally learned skills and others that were specialized but whose skill requirements did not change owing to changes in the mode of production. A measure that captures whether an occupation required vocational or professional training could increase our understanding of the role of occupational specialization in the selection criteria of employers.

In analysing the requirements stipulated in job advertisements, only one stage in the hiring process has been scrutinized. Other stages in the selection process were not considered. For example: Who applied? Who was considered a potential candidate? And who eventually got the job? One possibility would be to systematically collect information on the hiring practices of companies. By linking this information to personnel records, other stages in the selection process could be studied.

Finally, our findings offer theoretical implications. We provide another empirical test of the logic of industrialism, more specifically a test of one mechanism by which changes in individual attainment are assumed to have happened (for a review see van Leeuwen and Maas 2010). Although the existing studies do not as yet allow us to evaluate conclusively the logic of industrialism thesis, they indicate that changes in the occupational structure were important for long-term changes in attainment, but also that the mechanisms of status attainment were not fundamentally touched. Future research should aim to revise and specify the classical theoretical ideas by including the motives of actors, for example the motives of employers in their hiring behaviour.

In this study, we address the classic question of selection into social positions using a seldom studied data source that covers 69 years. We demonstrate that looking at the influence of regional modernization on employers' hiring preferences is a fruitful approach to test a central mechanism of theories of industrialism. While employees for higher-status occupations were recruited less often on the basis of ascribed characteristics, other modernization processes hardly had an effect on the hiring preferences of employers.

Appendix A Coefficients for control variables newspaper and gender

	Model 3	S.E.	Model 4	S.E.	Model 5	S.E.
Newspaper						
<i>Het Nieuws van den Dag</i>	ref.		ref.		ref.	
<i>Leenwarder Courant</i>	-0.126	0.024 **	-0.128	0.027 **	-0.125	0.028 **
<i>Nieuwe Rotterdamsche Courant</i>	-0.036	0.031	-0.013	0.036	-0.001	0.038
<i>Nieuwe Tilburgsche Courant</i>	-0.041	0.044	-0.059	0.048	-0.109	0.073
<i>Rotterdamsch Nieuwsblad</i>	-0.050	0.032	-0.039	0.035	-0.040	0.038
Gender						
Female	ref.		ref.		ref.	
Male	0.010	0.023	0.012	0.023	0.031	0.025
Either	0.010	0.060	0.012	0.059	0.022	0.060
Unknown	-0.031	0.025	-0.032	0.024	-0.012	0.026

7

Conclusion and discussion

7.1 Research aim and approach

The central research aim of this dissertation has been to study the process of status attainment during the careers of men and women in the Netherlands in the nineteenth and early twentieth centuries and the influence of modernization processes on that process of status attainment. This aim was achieved by studying the careers of men and women and the hiring decisions of employers.

7.1.1 Summary of the main contributions

Unlike research focusing on specific occupational groups and localities, this study models and makes predictions for the careers of a random sample of the male and female labour force nationwide over a period of 75 years, a period characterized by tremendous socio-economic changes. It contributes to the research literature by combining insights from different strands of research to enable one to study individual careers and the hiring behaviour of employers. Combining insights from stratification sociology, historical studies and theories on industrialism, I have developed a set of hypotheses to study individual characteristics and the role of regional modernization processes, and the interplay between the two. In addition, I developed hypotheses to test one central mechanism of status attainment, namely the use of achieved and ascribed characteristics in personnel selection and changes therein in the light of modernization processes.

Hitherto, little was known about careers in the nineteenth and twentieth centuries. This dissertation therefore describes the development of occupational careers in the century before World War II. I describe how the careers of men and single women developed in terms of status over the life course and over historical time. Likewise, knowledge on the selection criteria used by employers is scarce. This study provides, for the first time, insights into the requirements specified by employers in job advertisements in the Netherlands from 1870 to 1939.

To empirically address the complex research questions, I used the Historical Sample of the Netherlands, an excellent data source, which includes the life courses of a sample of men and women born in the nineteenth and twentieth centuries. The historical nature of the data presents a challenge, because they lack information on the exact timing of changes in occupations. To overcome this problem I propose to use multilevel growth modelling. The multilevel growth models overcome the problems of historical data and take advantage of their richness. Moreover, the models correspond nicely to common sense ideas about career success – for example, that successful careers are careers that start at a higher occupational status level and/or that grow in status more rapidly.

7.2 Summary of the main findings

In this section I present my main findings. In chapter 2 I demonstrated that there was a selective dropout from the labour market by women after marriage and childbirth. I therefore base my conclusions concerning women's careers on the findings relating to single women, because they were active on the labour market throughout their life course. This approach meets more favourably the assumptions of multilevel growth models (chapter 5).

In the century before World War II, did occupational careers gradually develop in the direction of greater career success?

It is predicted that individuals experienced careers with a higher occupational status and an increase in social status over the course of their career owing to a general upgrading of the occupational structure caused by modernization processes, such as industrialization, educational expansion and mass communication. Throughout the chapters of this book I found both aspects – the increase in status over historical time and over the life course – to be true for the careers of men and single women.

Regarding the trend over historical time, I found that each successive cohort of men and single women started their career at a higher-status level compared with the preceding cohort. That means that in each successive cohort the jobs that individuals had at the start of their careers were, on average, of higher status. The advantage of starting one's career at a higher status level remained over the course of the careers of both men and women. Over the course of their career, men and women moved into occupations with a gradually higher level of status. The descriptive analyses suggest that the speed at which status grew during the career of those individuals did not vary over historical time.

Did employers in the Netherlands decreasingly select on ascribed characteristics between 1870 and 1939?

According to the logic of industrialism thesis, one of the central mechanisms of variations in the processes of status attainment was changes in the hiring preferences of employers. Employers are expected to decreasingly select on ascribed characteristics. I found no support for this prediction among employers in the Netherlands recruiting personnel through newspaper advertisements. Throughout the research period, considerably more achieved than ascribed characteristics were mentioned in job advertisements. At the start of my research period the proportion of ascribed characteristics was rather low, with hardly any trend towards a reduction in ascription-based requirements. The only notable trend was the decrease in how often marital status was referred to.

It seems that the shift to achievement-based selection predicted to have been concomitant with modernization processes was already under way before that time, at least in those sectors of the economy in which employers endeavoured to recruit employees through newspaper advertisements.

How can we explain individual differences in career success of men and women?

Individual characteristics important for career success were approached by developing hypotheses from a resource and norms and societal expectations perspective. For men, resources played an important role in career success. Men from a higher social background, with more experience and basic schooling had more successful careers than men from a lower social background, with less experience and without basic schooling. Moreover, men who migrated from a rural to an urban area subsequently had a higher occupational status. Being married did not facilitate men's career success. For single women, individual characteristics likewise influenced their career attainment. Women from a higher social background, with more experience and women assuming breadwinning responsibilities had more successful careers.

In the following I will summarize the findings for each individual characteristic.

Experience

In addition to predicting a considerable increase in status over the life course, human capital theory expects the growth in status to slow down with increasing age as the additional experiences an employee can gain are finite. Whereas men's careers showed both an increase in status over the course of their career as well as a decrease in the speed of growth towards the end of their careers, the careers of single women clearly showed an increase in status but no slowing down towards the end.

Father's status

As indicated by a large number of studies (for a review see Ganzeboom, Treiman and Ultee 1991 and van Leeuwen and Maas 2010), the father's status was an important influence on his son's status attainment. For every additional status point attained by the father, his son's status increased indeed by half a point. I found no indication, however, that the occupational status of men with higher-status fathers increased more rapidly over the course of their career. Thus, surprisingly, the resources that influenced men's status at the start of their career did not help them achieve a more rapid growth in status later in their career. In line with theories on industrialism (Treiman 1970), the influence of the father's status decreased over historical time.

For single women, too, I found that those from higher-status social backgrounds had more successful career starts. Unexpectedly, however, women from higher social backgrounds saw their status increase more slowly over the course of their career. In contrast to what I found in the case of men's careers, the effect of the father's status did not vary with historical time. Daughters were less likely to assume the same occupation as their fathers, and so the extent to which women could benefit from their social background probably did not vary in response to changes in the occupational structure.

Basic schooling

Basic schooling was already widespread among the Dutch population during our research period, but it was uncommon for the Dutch to go on to secondary education. Lacking basic schooling clearly impeded a man's career success, and the negative effect of this increased over the life course. Men who lacked basic schooling experienced a significantly slower increase in social status over the course of their career. Over historical time, the negative effect of a lack of basic schooling decreased slightly. Note that the information we have on basic schooling was drawn from marriage certificates, and this is therefore not available for single women.

Being married

There is no clear effect of being married on the career attainment of men. I found a negative initial effect of being married that disappeared over the course of the man's career and became a positive effect when he reached the age of 35. The effect decreased over historical time by approximately the same degree as the increase over the course of a career. This finding is puzzling, because, theoretically, marriage was expected to increase men's status.

Rural-urban migration

Men who migrated from a rural to an urban area subsequently had a higher status. Although the distinction between rural and urban is a rather rough indicator of the possibilities offered by the labour market and of the other characteristics of urbanized areas, this finding indicates that regional differences in socio-economic conditions were important influences on men's career attainment. Over time, the influence of rural-urban migration did not change its effect.

Breadwinner responsibilities

I predicted that assuming breadwinner responsibilities would increase women's status by making them more productive, and because women with children were more likely to look for higher-

status occupations in order to be able to combine motherhood and work. Our empirical analysis of the career success of single women with breadwinning responsibilities revealed that they had a higher occupational status than women who did not (or not yet) have children. The speed at which status grew during the mother's career was not affected by motherhood however.

Taken together, these findings indicate that resources were clearly important for status attainment. However, resources seemed hardly to facilitate any increase in status over the course of the career of men and women; only basic schooling did so, for men. I found no evidence that the indicators for resources affected the rate of growth in status during women's careers. Nor did being married, the individual characteristic that reflected societal and normative expectations towards men, exert an influence on the career success of men.

Over historical time, the individual resources seemed to become slightly less important in the success of men's careers, whereas for women's careers I found no variation.

Table 7.1 presents an overview of my findings concerning the influence of individual characteristics on the careers of men and women in the Netherlands during the late nineteenth and early twentieth centuries.

What modernization processes explain whether people had successful occupational careers?

In general, in municipalities with more advanced modernization processes men had a higher occupational status than men in less advanced municipalities. In places with mass communication, mass transport and more advanced educational expansion men's occupational status was higher. Overall, the effects were rather small. In municipalities with mass communication (indicated by the presence of a post office), men's occupational status scores were on average one point higher than those of men in municipalities without post offices. Men in municipalities with mass transport had status scores that were 0.6 points higher than men in municipalities without mass transport facilities. In places with one additional secondary school student per 100 inhabitants, our measure of educational expansion, men's status was almost half a point higher.

Our findings regarding the effect of modernization processes on women's status differed from those of men. Modernization processes have a restricted influence on the success of women's careers. Apart from the presence of large industrial facilities, none of the indicators (educational expansion, mass communication, mass transport and change in values) had an effect on women's status. The status of women in municipalities with large industrial enterprises was around 4 points higher than that of women in municipalities without industrial enterprises. This finding indicates that, for women, it was only the increase in the number of administrative positions that actually offered better prospects.

Table 7.1 Overview of findings concerning the influence of individual characteristics on the careers of men and women in the Netherlands during the late nineteenth and early twentieth centuries

Individual characteristics	Men ⁴²			Single Women		
	Main effect	Rate of growth	Trend over time	Main effect	Rate of growth	Trend over time
	Observed (expected)					
Experience	+	(+)		Observed (+)	(+)	Observed (+)
Experience2	-	(-)		n.s. (-)		
Social background	+	(+)		+	(+)	
Lack of basic schooling	-	(-)		+	(+)	n.s. (-)
Being married	n.s.	(+)		?	(+)	
Having a child						
Rural-urban migration	+	(+)				n.s. (+)
						n.s. (-)

Note: ‘+’ = a positive effect; ‘-’ = a negative effect; n.s. = not significant. ? = no clear effect (+)/(-) indicates the direction of the hypothesis, i.e., positive or negative effect; rate of growth = the effect of the individual characteristic on the speed at which status grew over the life course; trend over time = whether the effect of the individual characteristic decreases ‘-’ or increases ‘+’.

⁴⁰ The findings for men are derived from chapter 4 because it takes into account the nesting of the observations in contexts (municipality*year). The effect of rural-urban migration is derived from chapter 3.

Another way in which the research question was approached was by considering whether modernization processes influenced the speed at which status grew over the course of the career. As discussed above, in settings in which modernization processes were more advanced careers started at a higher level of status. However, in municipalities with mass communication and more advanced industrialization the status of men's careers grew more slowly over the course of those careers. Although men started their careers at a relatively higher status level, their social status grew more slowly over the course of their career than the social status of men in less advanced municipalities.

It seems that while an overall upgrading across the occupational structure increased the level of status with which individuals began their careers, it did not continue to provide more opportunities for individuals to increase their occupational status over the course of those careers. The finding that socio-technological modernization decreased the speed at which occupational status grew over the career could be due to the type of occupations held by men in more advanced municipalities. Men who started working in factories as industrial workers might have had fewer chances of an upwardly mobile career compared with men in less advanced areas, in which, possibly, an apprentice-master trajectory was still more common. The general skills of skilled workers trained within an apprentice-master relationship could be applied across a wider range of jobs and therefore offered more opportunity for upwardly mobile careers. In addition, skilled workers bore the costs of their training, and so they had an incentive to recoup their investment by engaging in higher-status occupations during their career. In more advanced regions, semiskilled labour working in mass production in factories probably comprised a growing proportion of the industrial labour force. They were trained in firm-specific skills, and because companies wanted to recoup their investment in these workers they offered them incentives to stay (Owen 2004).

For single women, one modernization process did influence the rate of status growth over the life course. Women in places with mass communication, i.e., a post office, saw their status increase more rapidly over their life course. This finding reflects that the emergence of larger companies offering administrative jobs provided opportunities for women to enhance their career success. Post offices were part of large bureaucracies that offered administrative jobs. Other modernization processes did not affect the rate of growth in status over the life course.

Did the mechanisms of status attainment change in response to modernization processes?

According to the logic of industrialism, individual characteristics influencing career success would change their effect on career success due to regional modernization processes. I studied whether the effects of social background, the lack of basic schooling and marriage varied in

response to modernization processes. Overall, I found that modernization processes had hardly any effect on the mechanisms of status attainment. Only one individual characteristic, the effect of the father's status, was found to be weaker in municipalities with a train station. I found the other modernization indicators (mass communication, educational expansion, secularization and industrialization) to have had no effect on the influence of individual characteristics (father's status, basic schooling and being married) on status attainment. For women, the effect of individual characteristics on career attainment did not vary according to modernization processes.

Given that only one of the individual characteristics varied in its effect on men's status due to a single modernization process, I do not attach too much importance to this finding and conclude that the mechanisms of status attainment over the life course of men and women seemed to be untouched by modernization processes. It seems that also in more modernized locations individuals from higher-status backgrounds had an advantage may have been able to benefit most from the new opportunities that modernization processes offered (Grusky 1983, Bourdieu and Passeron 1990).

The other way I approached changes in the status attainment process was to study the selection behaviour of employers. First, I addressed the question of whether in the case of higher-status and specialized occupations employers included fewer ascribed characteristics in their job advertisements. I concluded that this was indeed the case for higher-status occupations. However, whether the advertised job was specialized or not had no effect on the proportion of ascribed characteristics. Secondly, I studied whether in places characterized by more advanced modernization employers would be less liable to emphasize ascribed characteristics. The results demonstrated that modernization processes had no effect on occupational selection.

The consistently higher proportion of achieved characteristics than ascribed characteristics in the advertisements and the lack of a clear trend towards less ascription-based selection is unexpected given the theoretical discussion on the shift from ascription- to achievement-based recruiting. It appears that the rise in importance of achieved characteristics predicted to have been concomitant with modernization processes was already under way before that time, at least in certain sectors of the economy in which employers endeavoured to recruit employees through newspaper advertisements. Miles (1993) reports that in the nineteenth and early twentieth centuries job seekers increasingly found work through advertisements, but that, at the same time, the most common way of finding a job was through relatives or family. Potentially, changes in selection criteria occurred in the selection through channels other than newspaper advertisements. For example, employers who used placing services when recruiting workers might have been less likely to include ascriptive characteristics. If employers increasingly used placing services to recruit personnel, overall ascription-based recruitment might still have diminished.

The lack of an effect of specialized jobs and modernization processes on the inclusion of ascribed characteristics in job advertisements might indicate that the motives of employers when recruiting employees are not fully captured by the arguments of the logic of industrialism thesis. We have argued that employers hiring for higher-status and specialized jobs would have selected less often on the basis of ascribed characteristics in order to ensure that employees were responsible and able to handle valuable machinery. Alternatively, trust in employment relations might have been generated through homophily. Employers might have been more willing to trust potential employees if they shared with them similar characteristics seemingly unrelated to a job, such as social background or religious confession (Weesie and Raub 2000).

Table 7.2 presents an overview of findings concerning the influence of modernization processes and their interactions with individual characteristics on the careers of men and women in the Netherlands during the late nineteenth and early twentieth centuries.

7.3 Implications

This dissertation provides a test of classical theories on status attainment and the logic of industrialism for careers of men and women in the nineteenth and twentieth centuries in the Netherlands. In what follows, I will discuss the methodological and theoretical implications suggested by the application and empirical tests of those theories.

7.3.1 Methodological implications and suggestions for further research

This study leads to some methodological implications. Future research should address several limitations of this study. Work is needed, for instance, to improve the available measures of modernization processes, such as our measure of industrialization and changes in values and the measurement of specialized occupations. It is extremely difficult to find an indicator for industrialization that covers a long timespan at a level as detailed as the municipality. Although our indicators of industrialization each cover 25-30 years, it would be highly desirable to find an indicator that covers a 75-year span. This is difficult, because the nature of industrialization changed – from the use of steam engines to that of other mechanized labour (electricity for example).

Regarding an improvement in the measure of universalistic values, an indicator would be desirable that more specifically measures to what extent the population adheres to such values, i.e., to what extent they are convinced that people should not be judged on characteristics that are not directly relevant for performance, and that should therefore not affect career success.

Concerning specialized occupations, further research might improve our measurements relating to those occupations. Within the group of specialized occupations, there were probably occupations that required ‘new’ and institutionally learned skills and others that were specialized

but whose skill requirements did not change owing to changes in the mode of production. A measure that captures whether an occupation required vocational or professional training could increase our understanding of the role of occupational specialization in the selection criteria of employers.

Future research could also benefit from the use of gravity or spatial models (Wegener 2011), which take into account the levels of modernization in surrounding municipalities. These models could, for example, improve upon our measures of mass transportation by taking into account how well a municipality was connected to the railway network by considering how well surrounding municipalities were connected to that network. A preliminary step has been taken to develop such a measure (see chapter 4), and it suggests that it is difficult to create such complex variables in a valid and reliable way.

Studying differences across occupations as reflected in variables other than status would extend our understanding of the changes to occupational careers that modernization engendered. In addition to the prospect of tenure that higher-status jobs might have offered at the beginning of one's career, these jobs perhaps provided better working conditions as well. One tentative hypothesis could be that tenure and improved working conditions were characteristics of a successful career, to which modernization processes gave rise. Other sources, such as biographical or autobiographical material, might help one to study this question in more detail. They can provide a wealth of information on individual working lives that was not preserved in official registers or registers of companies (Humphries 2010).

In our study of job advertisements we studied a part of the labour market that included a wide range of occupations. Future research should aim at systematically assessing which employers found employees through other channels, for example through wider kin or family members. For this question too, biographical or autobiographical material could help in our analyses.

In analysing the requirements stipulated in job advertisements, only one stage in the hiring process has been scrutinized. Other stages in the selection process were not considered. For example: Who applied? Who was considered a potential candidate? And who eventually got the job? One possibility would be to systematically collect information on the hiring practices of companies. By linking this information to personnel records, other stages in the selection process could be studied. The archives of larger bureaucratic companies, the Dutch railway company for example, contain information not only on the career paths of their employees but also on hiring and personnel management policies. Case studies could provide a better understanding of the hiring decisions of employers, as well as insights for the study of occupational selection among the population at large.

Table 7.2 Overview of findings concerning the influence of modernization processes and their interactions with individual characteristics on the careers of men and women in the Netherlands during the late nineteenth and early twentieth centuries

Individual characteristics	Men					Single Women				
	Industrialization	Mass communication	Mass transport	Educational expansion	Change in values	Industrial facilities	Mass communication	Mass transport	Educational expansion	Change in values
Main effect	Observed (expected) n.s. (+)	Observed (expected) + (+)	Observed (expected) + (+)	Observed (expected) + (+)	Observed (expected)	Observed (expected) + (+)	Observed (expected) n.s. (+)	Observed (expected) n.s. (+)	Observed (expected) n.s. (+)	Observed (expected) n.s. (+)
Rate of growth	- (+)	- (+)	n.s. (+)	n.s. (+)	Observed (expected)					n.s. (+)
Social background	n.s. (-)	n.s. (-)	- (-)	n.s. (-)	n.s. (-)	n.s. (+)			n.s. (+)	n.s. (+)
Lack of basic schooling	n.s. (+)	n.s. (+)	n.s. (+)	n.s. (+)						
Being married					+ (-)					
Being breadwinner										n.s. (+)

Note: ‘+’ = a positive effect; ‘-’ = negative effect; n.s. = not significant. (+)/(-) indicates the direction of the hypothesis, i.e., positive or negative effect; rate of growth = the effect of modernization process on the speed at which status grew over the life course.

I have chosen to restrict my conclusion to the findings on the careers of single women, since chapters 2 and 3 show that the assumptions implicit in multilevel growth models do not hold for women who dropped out of the labour market after marriage. Nonetheless, I remain convinced that multilevel growth models can still be used to study the careers of women who married. Almost all women had an occupation until they married. One could thus focus on women in general, before they married, and study the influences (social background and educational expansion for instance) on their premarital occupational careers. One could also address the question of regional and temporal variations in the labour market dropout of women who married.

7.3.2 Theoretical implications and suggestions for further research

Individual characteristics for career success

The empirical tests of hypotheses on the role of individual characteristics for the career success of men and women have several theoretical implications. The empirical analyses of the effect of being married provided no clear evidence of a positive influence on the career success of men. From a norms and societal expectations perspective and from a social capital perspective, I predicted that men's status would increase after they got married. Following the norms and societal expectations approach I argued that the responsibilities of being a breadwinner increased the extent to which men invested in their careers, and that that would have made married men more successful. Also, employers are expected to have acknowledged the responsibilities of married men. Married men were favoured by employers since they were believed to be more committed to their jobs. Employers were also less prone to fire married men, as this was considered less fair than firing unmarried men, who were assumed to have fewer responsibilities. The inconclusive finding concerning the effect of being married on the career success of men may imply that being married influenced men's career attainment in ways other than by facilitating enhanced career success. Research on the effect of being married after World War II indicates that married men experienced less overall mobility. Kalmijn and Luijkx (2005) find that married men were less likely to be upwardly mobile and less likely to be downwardly mobile. Future research might develop hypotheses on a possible stabilizing effect of marriage on men's careers. For instance, wives might influence the careers of their husbands by preventing them from engaging in risky behaviours that could lead to downward mobility. At the same time, avoiding risky behaviour might also mean missing out on opportunities for upward mobility. It is possible then that married men experience less downward mobility and at the same time less upward mobility.

Second, the inconclusive finding concerning marriage and the career success of men also has implications for the hypothesis derived from social capital theory. I expected that

the social capital of a spouse would foster men's career success by providing them with news and information on job opportunities and the labour market. The rigid sex segregation in the Dutch labour market in the nineteenth and twentieth centuries might have hindered wives from providing useful information on career possibilities for men. Women were working in other occupations and occupational sectors and might therefore have had no relevant information. The sex segregation in the labour market could be taken into account when specifying hypotheses on the role of a wife's social capital in the career success of her husband. One possible way to refine the hypothesis would be to take into account the employment situation of wives – whether, for instance, they were employed, and, if so, in which sectors they worked.

Third, my empirical test of the predictions of human capital theory showed no evidence, in the case of single women, of the expected decline in the rate of growth in career success towards the end of their career. Human capital theory claims that career success will increase with experience, and that this increase will slow down towards the end of one's career. Research is needed to develop hypotheses on why single women experienced no decrease in the rate at which their occupational status grew over their life course. A possible explanation for this finding is that most of the working women dropped out of the labour market when they married, leaving only a very few, older, women in the labour market. The older women active on the labour market were reasonably likely to move into higher-status occupations because few women were experienced enough to be eligible for such work. For example, many women worked in domestic service but left after getting married. Domestic servants experienced and able to organize and supervise domestic personnel were therefore rare. Single women who remained on the labour market throughout their career thus had a good chance of attaining a higher-status occupation later in their career. This possible explanation also implies that with an increase in the labour force participation of older women the careers of men and women would develop more alike. For men, we found a clear decrease in the rate at which their status grew during their career. If more women remained active on the labour market, on average the careers of women would be less successful later in their career. The likelihood of their moving into higher-status occupations in later stages of their career would be less, owing to the increased competition for these occupations. On average, the increase in women's status would be likely to slow down towards the end of their career, just as it did for men. By comparing the careers of men and women one could test hypotheses on the convergence of careers of men and women due to an increase in the labour force participation of women.

Fourth, women from higher-status backgrounds experienced a slower rate of increase in status over the course of their career. Based on classical status attainment models, I expected social background to be an important influence on women's status attainment over their career. However, I found that while women from higher-status backgrounds started their career at a higher level of status, they could not enhance that status later in their career to the same degree

as women who began with a lower level of status. That is a surprising finding as I had expected that the resources and networks available to those from a higher social background would have facilitated career success later on in life. Many women from higher-status backgrounds presumably had dead-end jobs, like midwives. Midwives had an above-average status but hardly any opportunity to progress to a position of higher status in their occupational field. Another reason for the slower rate of increase in status for women from higher social backgrounds could have been that women were barred from higher-status occupations. It appears that even in sectors in which higher-status occupations were available, women were hardly ever admitted. In the education sector in the Netherlands in the 1920s (van Essen 1999) women were more successful than men in the examinations that had to be set by those wishing to become head of a school. Despite women outperforming men, it was often men who were appointed. Eventually, fewer women took the examination, because they realized that, regardless of their academic success, they were unlikely to be appointed to head of a school. Perhaps glass ceilings prevented women from moving into higher-status occupations. Women could 'see' higher-status positions but they were excluded from them. If higher-status women did indeed face glass ceilings, their disadvantage cannot be explained by the job-relevant characteristics of the employee, and the effect of that disadvantage would have been greater at higher levels of status (Cotter *et al.* 2001). By comparing the career advancement of men and women working in the same sector, hypotheses on glass-ceiling effects on the careers of women can be tested.

The logic of industrialism

The empirical tests of hypotheses on the role of modernization processes in the career success of men and women suggest several theoretical implications. First, while the empirical tests support the notion of increasing career success due to modernization processes, I found no indication that the mechanisms of status attainment changed in response to modernization processes. One example is the influence of social background on men's career attainment. The effect of social background was expected to change in response to modernization processes. I found the influence of social background to be no weaker in places with more advanced modernization. Also in more modernized places individuals from higher-status backgrounds had an advantage over individuals from lower-status backgrounds and may have been thereby able to benefit most from the new opportunities that modernization processes offered. The application of status maintenance theory might help one to develop testable hypotheses to further study status attainment during modernization. According to status maintenance theory (Grusky 1983, Bourdieu and Passeron 1990) higher-status families will seek alternative ways to secure an advanced position for their offspring when current strategies are challenged. Status maintenance theory assumes that modernization processes compromised mechanisms of status attainment and that higher-status parents had alternative ways to facilitate the success

of their offspring. In pre-industrial societies skill formation often took place within the family household. Modernization processes caused changes in the educational and occupational structure. Increasingly, occupations required longer or specialized training that families could not provide for their children. The investment in longer or specialized schooling is one example of an alternative investment by higher-status parents in an effort to secure advantages for their children. One tentative hypothesis might be that in places with more occupations requiring longer or specialized education, a higher-status background is increasingly related to a successful career. Linking the HISCO occupational coding scheme (van Leeuwen, Maas and Miles 2002) to the Dictionary of Occupational Titles (US Department of Labor 1965) allows one to retrieve information on the length and type of schooling that an occupation requires. By creating an indicator that captures the types and length of schooling in a municipality, the local labour market can be reconstructed and hypotheses derived from status maintenance theory tested.

Second, whereas I had expected modernization to cause the careers of men to start at a higher level of status and to advance more rapidly over the course of their careers, I found that the careers of men started at a higher level but advanced more slowly. Thus, modernization processes influenced the mechanisms of status attainment in a way not expected by the logic of industrialism thesis. One possible explanation for this might lie in the emergence of internal labour markets in the late nineteenth and early twentieth centuries. According to theories of labour market segmentation, the organization of work and the career processes of workers changed owing to increased demand for firm-specific skills (Doeringer and Piore 1971, Owen 2004). Larger companies set up internal labour market structures in which workers were trained in firm-specific skills. Companies wanted to recoup their investment in these workers by offering them incentives to stay, i.e., tenure (Owen 2004). In return for a long-term perspective with the employer, workers accepted that for many there was hardly any prospect of upward mobility. Only for a small number of workers in higher-status occupations did predefined job ladders create prospects for upward mobility. Research on formal careers in internal labour markets, such as in banks or other bureaucracies, shows that tenure provided an important incentive for individuals to commit to working for a given company for a longer period, even when doing so meant there would be little likelihood of upward mobility (Stovel, Savage and Bearman 1996).

In contrast to workers in internal labour market structures, skilled workers who had been trained outside such structures bore the costs of their own training. They had an incentive to recoup their investment by moving into higher-status occupations if possible. Presumably the skills that workers acquired in a non-firm setting were more general. Compared with firm-specific skills, general skills may have been easier to transfer to other occupations and also to higher-status occupations, making it more likely that such workers would be employed in higher-status occupations during their careers. Hypotheses derived from theories of labour market segmentation could be tested by constructing an indicator that captures how prevalent internal labour market structures in a municipality were.

Third, the logic of industrialism thesis has been formulated with a focus on the attainment processes of men (see Treiman 1970). Its application to the careers of Dutch single women shows that the hypotheses do not perform well. Only one of the modernization processes, the emergence of large industrial facilities, offered women opportunities for upward mobility. This finding implies that there were circumstances that hindered women from taking advantage of the newly offered conditions created by modernization processes, such as educational expansion and mass transportation. Perhaps the role of restrictive provisions aimed at prohibiting employment for married women provides a fruitful direction for further research. Hypotheses should focus on the prevalence of restrictive practices in sectors of the labour market as well as regional and temporal variations therein. In the nineteenth and early twentieth centuries a number of unsuccessful attempts to introduce legislative restrictions on the labour market participation of women were made. However, in certain periods married women were restricted from working in some sectors of the labour market. In 1904 a marriage bar was introduced in the postal service, and although this provision was scraped in 1907 it was still being applied until the 1970s. From 1924 onwards municipalities were entitled to dismiss female teachers who decided to marry, and in 1934 an official marriage bar was introduced in the teaching sector. While these restrictions aimed at barring married women, there were ongoing discussions to ban non-married women from employment too, and these public debates set the tone for the role of women in society. One could study the influence of legislative proposals and provisions by creating an indicator that captures for which sectors provisions to ban the employment of married and non-married women were proposed. Where such sectors might otherwise have represented important employment opportunities for women, such bans would probably have impeded the career success of women.

Archival documents on the debates concerning the introduction of labour market restrictions can be found in the archives of the Nationaal Bureau voor Vrouwenarbeid [National Office for Women's Work] and the Comité tot Verdediging van de Vrijheid van Arbeid voor de Vrouw [Committee for the Advocacy of Free Labour for Women].

7.4 Final conclusions

In this dissertation, I was able to model the process of status attainment during the careers of a random sample of men and women in the nineteenth and early twentieth centuries and the influence of modernization processes on that process of status attainment. As this had never been done before, this dissertation presents the first historical test of classic theories in the field of status attainment over the life courses for the population at large.

One main conclusion is that individual differences in resources e.g., experience and schooling were clearly important for status attainment of men and women in the nineteenth and

early twentieth centuries. Another is that while the classic expectation of increasing career success due to modernization processes was supported, no indication was found that the mechanisms of status attainment changed in response to modernization processes.

Samenvatting
Summary in Dutch

Inleiding

De midden- tot late negentiende eeuw was een periode die werd gekenmerkt door enorme economische, sociale en institutionele verandering (waaronder industrialisatie, massacommunicatie en onderwijsexpansie). Volgens de logica van het industrialisme (Treiman 1970, Kerr et al. 1960) en andere klassieke theorieën worden deze moderniseringsprocessen geacht veranderingen te hebben veroorzaakt in het proces van statusverwerving gedurende de beroepsloopbaan. Als gevolg van modernisering zouden mensen over de gehele bevolking in toenemende mate succesvolle carrières hebben gehad.

Dit proefschrift presenteert de eerste historische test van klassieke theorieën op het gebied van statusverwerving over de levensloop van de algemene bevolking. Macroprocessen kunnen het proces van statusverwerving gedurende de carrière op twee manieren beïnvloeden. Ten eerste kunnen processen zoals industrialisering en onderwijsexpansie een directe invloed op de beroepsstatus van individuen hebben. Door de verbetering van de beroeps- en opleidingsstructuur kregen mensen steeds betere banen. Ten tweede wordt verwacht dat het proces van statusverwerving tijdens de carrière vanwege moderniseringsprocessen is veranderd. We verwachten dat de invloed van individuele kenmerken op het carrièresucces van mensen is veranderd als gevolg van moderniseringsprocessen. De verwachting is dat persoonlijke kwalificaties zouden belangrijker zijn geworden voor statusverwerving dan de status van een individu bij de geboorte.

Studies die empirisch deze claims van veranderingen in de statusverwerving testen op een breed scala van beroepen en in verschillende regio's richten zich vooral op statusverwerving door middel van het huwelijk en tussen generaties. Studies over veranderingen in de status tijdens de loopbaan zijn grotendeels beperkt tot bepaalde beroepen of regio's en kunnen dus niet gegeneraliseerd worden.

Het doel van deze studie is daarom het bestuderen van het proces van statusverwerving tijdens de carrière in de negentiende en vroege twintigste eeuw en de invloed van moderniseringsprocessen op dat proces. Dit gebeurt aan de hand van een steekproef van mannen en vrouwen uit de hele bevolking en een steekproef van personeelsadvertenties uit Nederlandse kranten.

Het bestuderen van historische beroepsloopbaan met multilevel groei modellen

In hoofdstuk 2 presenteren we een nieuwe methode voor het bestuderen van beroepsloopbanen met toepassing van historische gegevens. Het belangrijkste idee achter hier gepresenteerde groei modellen is dat beroepsstatus toeneemt met ervaring die een individu in de arbeidsmarkt

opbouwt. Deze modellen maken het mogelijk om de invloed van tijdconstante kenmerken (bv., beroepsstatus van vader) en tijdvariërende kenmerken (bv., burgerlijke staat) te bestuderen. Beide soorten voorspellers kunnen het startpunt van de carrière en de snelheid van de groei van status gedurende de carrière beïnvloeden. Met carrière bedoelen we elke vorm van beroepsloopbaan, dus elke opeenvolging van beroepen van een individu. Deze methode is vooral geschikt voor het bestuderen van een succesvolle carrière. Succesvolle carrières worden gekenmerkt door twee dimensies. Ten eerste, zijn carrières succesvoller als ze op een hoger niveau van beroepsstatus beginnen. Ten tweede, neemt de beroepsstatus van individuen met een succesvolle carrière sneller toe gedurende de levensloop.

We gebruiken de Historische Steekproef Nederland (HSN) om carrières te bestuderen. Een speciaal kenmerk van de HSN data is dat we het exacte tijdstip van een beroepswijziging van een individu niet weten, maar we weten wel welk beroep een individu op een bepaald tijdstip in zijn of haar leven heeft gehad. Om met deze eigenschappen van de gegevens rekening te houden, stellen wij voor om cross-geclassificeerde multilevel groeimodellen (Hox 2002, Raudenbush en Bryk 2002) te gebruiken.

De opbouw van dit hoofdstuk is als volgt. Eerst geven we een korte bespreking van gemeenschappelijke problemen van historische gegevens die standaard methoden minder toepasbaar te maken. Vervolgens zullen we onze methode om carrières met historische data te bestuderen voorstellen. Wij formuleren dan enkele hypothesen. De data om de hypothesen te toetsen zullen worden beschreven en hypothesen worden getest. We sluiten af met een bespreking van de voorgestelde methode en ideeën voor verder onderzoek.

In lijn met onze verwachtingen was de snelheid van de groei van de beroepsstatus over de carrière sneller voor mannen met een hogere sociale achtergrond. Burgerlijk staat van mannen heeft geen invloed op hun status. Mannen die trouwen op jongere leeftijd beginnen hun carrière met een lagere status, maar deze achterstand verdwijnt in de loop van hun carrière. Betreffende de effecten van veranderingen over historische tijd vonden we dat het effect van beroepsstatus van de vader afneemt, terwijl het effect van gehuwd zijn niet veranderd is.

De carrières van vrouwen toonden het verwachte patroon van toenemende beroepsstatus over de levensloop, maar zonder afvlakking van snelheid van groei op oudere leeftijd. Dochters van vaders met een hoge status begonnen hun loopbaan in beroepen met een hogere beroepsstatus. Echter, in tegenstelling tot wat we verwachtten ontwikkelden de carrières van deze vrouwen zich langzamer in termen van status dan die van de dochters van vaders met een lagere status. In de loop van de tijd is het positieve effect van de status van de vader toegenomen. Ook tegen onze verwachtingen in vonden we dat gehuwde vrouwen een hogere beroepsstatus hadden. De snelheid waarmee de status van getrouwde vrouwen groeide gedurende het leven verschilt nauwelijks in vergelijking met degenen die niet getrouwd zijn. Bovendien is het effect van gehuwd zijn niet veranderd over de tijd.

De toepassing van multilevel groei modellen leidt tot volgende conclusies. Ten eerste gaan de modellen uit van een regelmatige verandering van de status tussen twee tijdstippen waarop beroepsstatus wordt gemeten. In feite weten we dat veranderingen in beroepsstatus meer abrupt gebeuren. Toch is dit probleem niet cruciaal. Door de opname van de tijdvariërende kenmerken in de modellen kan met sprongen in beroepsstatus rekening gehouden worden. Bovendien vatten modellen altijd tot op zekere hoogte complexe werkelijkheid samen.

Het tweede probleem is ernstiger. Onze benadering levert contra-intuïtieve resultaten op voor carrières van vrouwen. De oorzaak daarvoor ligt in de veronderstelling van de groeimodellen dat gedurende de perioden dat vrouwen niet worden waargenomen zij zich op dezelfde wijze als die vrouwen met vergelijkbare kenmerken, die worden waargenomen, gedragen. Echter, in werkelijkheid werden veel vrouwen niet waargenomen, omdat ze niet meer actief waren op de arbeidsmarkt na hun huwelijk. Vrouwen die wel actief op de arbeidsmarkt gebleven waren, zijn een selectieve groep zowel op gemeten en ongemeten kenmerken. Toch zijn we ervan overtuigd dat multilevel groeimodellen ook gebruikt kunnen worden om vrouwelijke carrières te bestuderen. Men zou zich kunnen focussen op vrouwen voordat ze trouwen. Onderzoek naar de invloed van de sociale achtergrond op voorhuwelijks beroepsloopbaan van een algemene vrouwelijke populatie zou een interessante richting zijn. Daarnaast is er ook de groep van vrouwen die nooit getrouwd zijn en actief bleef op de arbeidsmarkt. Men kan ook kiezen om de carrières van die vrouwen te bestuderen. Op deze manier zou men een selectieve groep bestuderen, maar voor deze groep zou aan de aannames van de modellen worden voldaan.

Al met al kunnen we concluderen dat multilevel groeimodellen een goed instrument zijn om historische beroepsloopbanen te analyseren wanneer aan de aanname wordt voldaan dat individuen op de arbeidsmarkt blijven in de periodes dat ze niet worden geobserveerd.

Studeren van carrièresucces - de rol van hulpbronnen en normen voor de verwerving van beroepsstatus in Nederland, 1865-1940

In hoofdstuk 3 bestuderen we carrièresucces gedurende de levensloop van individuen door het gebruik van een lange termijn perspectief. We streefden ernaar drie onderzoeksvragen te beantwoorden. De eerste vraag was of tussen 1865 en 1940 loopbanen van individuen succesvoller zijn geworden. Uit een vergelijking van de ontwikkeling van status over de levensloop van drie cohorten samen met een multilevel analyse bleek dat loopbanen inderdaad succesvoller zijn geworden over de tijd. Mannen en vrouwen die in latere cohorten geboren waren, begonnen hun carrière op een hoger niveau van status dan het eerste cohort. Daarnaast zijn ze er in geslaagd dit voordeel gedurende hun carrière te behouden.

De tweede en derde vraag luidt hoe we individuele verschillen in carrièresucces kunnen verklaren en of de mechanismen die carrièresucces veroorzaken veranderd zijn over de tijd.

Voor mannen hebben hulpbronnen een belangrijke rol gespeeld bij het bepalen van een succesvolle carrière in de levensloop: ervaring, basisopleiding, de status van de vader en ruraal-urbane migratie bevorderden het proces van statusverwerving. Echter, in tegenstelling tot wat we hadden verwacht, nam de beroepsstatus van mannen niet toe na het huwelijk. Deze bevinding is raadselachtig, omdat op basis van theoretische redenen verwacht wordt dat huwelijk tot een verhoging van de status van mannen zou leiden. Terwijl ook het hebben van een basisopleiding de verhoging van de status gedurende het leven vergemakkelijkt, waren mannen met een hogere sociale achtergrond niet in staat over hun loopbaan hun status sneller te verhogen in vergelijking met mannen uit lagere status families. De bevinding dat over historische tijd het effect van de status van de vader daalt ondersteunt de voorspelling van de logica van het industrialisme. De effecten van de overige individuele kenmerken (basisopleiding, migratie, getrouwd zijn) varieerden niet over de tijd.

De bevindingen betreffend de carrières van vrouwen zijn wat meer gemengd. We vonden een positieve invloed van werkervaring, de status van de vader, getrouwd zijn en het hebben van een kind op het carrièresucces van vrouwen. De mate van carrièresucces van vrouwen met een basisopleiding verschilde niet van vrouwen zonder basisopleiding. De bevinding dat de status van vrouwen hoger is na het huwelijk spreekt de klassieke hypothesen tegen. Het positieve effect van het huwelijk op carrières van vrouwen lijkt contra-intuïtief, althans wanneer rekening wordt gehouden met de gevestigde theoretische en empirische kennis over vrouwelijke loopbanen in de negentiende en twintigste eeuw. Een waarschijnlijke verklaring voor deze bevinding is dat na het trouwen veel vrouwen de arbeidsmarkt hebben verlaten en dus niet meer waargenomen werden. Vandaar zou een verklaring voor onze bevindingen kunnen zijn, dat vrouwen in beroepen met een hogere status meer kans hadden om op de arbeidsmarkt te blijven na het huwelijk dan vrouwen met minder aantrekkelijke beroepen.

Samenvattend was het doel van dit hoofdstuk carrières systematisch longitudinaal te onderzoeken. We toonden aan dat inderdaad in het geval van de late negentiende en vroege twintigste eeuw in Nederland er een duidelijke toename van carrièresucces van individuen waargenomen worden kon. Bovendien toonden we aan dat een theoretisch kader waarin het belang van hulpbronnen voor een loopbaan werd onderstreept, een deel van de verschillen in carrièresucces kan verklaren.

Statusverwerving gedurende de carrière tijdens modernisering. Een studie naar Nederlandse mannen in 847 gemeenten tussen 1865 en 1928

In hoofdstuk 4 hebben we de invloed van moderniseringsprocessen op carrièresucces in Nederland in de late negentiende en vroege twintigste eeuw bestudeerd. We stelden twee onderzoeksvragen. Eerst vroegen we of individuen in meer gemoderniseerde gemeenten carrières op een hoger

statusniveau hebben en ten tweede, in hoeverre de invloed van individuele kenmerken op een succesvolle carrière variëren als gevolg van regionale en temporele verschillen in modernisering. We gebruikten de Historische Steekproef Nederland (HSN), om de carrières van meer dan 7.000 mannen in 847 gemeenten over een periode van 63 jaar te analyseren. De gegevens hebben betrekking op de loopbanen van mannen uit verschillende regio's in Nederland en evenals op een grote diversiteit aan beroepen. Moderniseringsprocessen meten we op gemeentelijk niveau. Moderniseringsprocessen omvatten massacommunicatie, massatransport, onderwijsexpansie, industrialisatie en secularisatie.

We benaderen onze eerste onderzoeksvraag door het bestuderen van de vraag of mannen in contexten met meer geavanceerde moderniseringsprocessen hun carrière beginnen met een hogere sociale status en of hun status in de loop van hun leven sneller groeit.

In gemeenten met meer geavanceerde moderniseringsprocessen, begonnen carrières op een hoger statusniveau, maar in de loop van de carrière, is dit comparatieve voordeel verdwenen. Dus, hoewel mannen hun carrière op een relatief hoger niveau begonnen, groeide hun sociale status langzamer in de loop van hun carrière dan de status van mannen in minder geavanceerde gemeenten. Het lijkt erop dat door een algemene verbetering van de beroepsstructuur het niveau van de status waarmee individuen hun carrière begonnen, steeg, maar verder niet meer mogelijkheden bood voor individuen om hun beroepsstatus in de loop van hun carrière te verhogen.

De tweede onderzoeksvraag concentreert zich op mogelijke variaties in de effecten van individuele kenmerken op een succesvolle carrière als gevolg van verschillen in de ontwikkeling van modernisering processen. In onze hypothesen over de invloed van moderniseringsprocessen op effecten van individuele kenmerken op carrière succes hebben wij rekening gehouden met sociale achtergrond, het gebrek aan basisopleiding en getrouwd zijn. In gemeenten met een treinstation was het effect van sociale achtergrond, gemeten aan de hand van de status van de vader, zwakker. Voor moderniseringsprocessen anders dan massatransport hebben we geen effecten gevonden op de relatie tussen individuele kenmerken en status verwerving. Het lijkt als of het proces van statusverwerving gedurende de levensloop onaangetaast bleef door moderniseringsprocessen.

Kortom, we kunnen de bewering van de logica van de industrialisatie dat moderniseringsprocessen leidden tot een stijging van de gemiddelde beroepsstatus van de mannelijke bevolking steunen, maar deze stijging was vrij klein en was er alleen aan het begin van de beroepsloopbaan. Onze bevindingen suggereren dat maatschappelijke veranderingen in termen van regionale moderniseringsprocessen van beperkte invloed waren op individuele mobiliteitsuitkomsten.

Statusvererving gedurende de carrières van alleenstaande vrouwen - individuele en contextuele invloeden op het carrière-succes van vrouwen in Nederland, 1865 - 1928

In hoofdstuk 5 hebben we de effecten van individuele kenmerken en moderniseringsprocessen op carrière-succes van alleenstaande vrouwen in Nederland in de late negentiende en vroege twintigste eeuw onderzocht. In het bijzonder is de invloed van individuele kenmerken, zoals sociale achtergrond en kostwinner verantwoordelijkheden, en van moderniseringsprocessen, zoals onderwijsexpansie en massacommunicatie, bestudeerd. Bovendien waren we geïnteresseerd in mogelijke variaties in de effecten van individuele kenmerken op een succesvolle carrière als gevolg van verschillen in de ontwikkeling van moderniseringsprocessen.

De beschrijvende onderzoeksvraag werd benaderd door de ontwikkeling van status over de levensloop van drie cohorten te vergelijken. De status van vrouwen nam toe over de loop van hun carrière en tijdens het onderzochte historische tijdperk. Bovendien toonden de beschrijvende analyses aan dat vrouwen over de tijd in een steeds groter aantal beroepen werkten.

De resultaten van crossgeclassificeerde multilevel groei modellen ondersteunen de beschrijvende bevinding dat er sprake was van een toenemend carrière succes. Echter, terwijl de status in de loop van de carrières van vrouwen toenam is er geen aanwijzing dat de snelheid van de stijging afnam naar het einde van hun loopbaan toe. Dit is een nogal verrassende bevinding, aangezien onze verwachting dat werknemers op oudere leeftijd minder nieuwe ervaringen maken. Een andere interessante bevinding is dat vrouwen met een hogere status achtergrond hun carrière op een hoger niveau van status begonnen, maar een trager tempo van de stijging van status ervoeren in de loop van hun carrière. Dat is een verrassende bevinding, omdat we verwacht hadden dat de hulpbronnen en netwerken die voor vrouwen met een hogere status achtergrond beschikbaar zouden zijn ook carrière succes later in het leven zouden vergemakkelijken. Overeenkomstig de verwachtingen hadden vrouwen met kinderen gemiddeld een hogere beroepsstatus. Dus, ondanks de ontberingen van een alleenstaande moeder hadden ze gemiddeld een hogere status. De snelheid waarmee hun status gedurende hun carrière groeide nam echter niet toe.

Contextuele moderniseringsprocessen hadden nauwelijks invloed op de status van vrouwen. Alleen vrouwen in gemeenten met grote industriële bedrijven hadden een hogere status. In gemeenten waar een top 100 bedrijf, onze maat van industriële bedrijven, was gevestigd, is het percentage van vrouwen die werkzaam waren als kantoorbedienden tweemaal zo hoog als in gemeenten zonder top 100 bedrijven. Dit suggereert dat in het bijzonder administratieve banen vrouwen hebben voorzien van betere vooruitzichten op een succesvolle carrière. Andere moderniseringsprocessen hadden noch een effect op de snelheid van de groei van de status, noch over het effect van sociale achtergrond of moederschap op status. Aldus werd het proces van statusvererving van alleenstaande vrouwen nauwelijks beïnvloed door

moderniseringsprocessen anders dan de opkomst van grote industriële bedrijven.

Samenvattend, de resultaten van dit hoofdstuk geven aan dat individuele verschillen in human capital, sociale achtergrond en kostwinner-verantwoordelijkheden, van belang waren bij de totstandkoming van verschillen in carrière succes van alleenstaande vrouwen. Uit onze analyses is gebleken dat de verschillen tussen contexten, in zeer ruime mate worden verklaard door een algemene verbetering in de beroepenstructuur. Regionale verschillen deden er alleen in termen van specifieke carrièremogelijkheden toe, namelijk door de administratieve functies die in grote bureaucratische ondernemingen worden aangeboden.

Werkgevers keuze - Selectie door middel van krantenadvertenties in de negentiende en twintigste eeuw

In hoofdstuk 6 wordt het wervingsgedrag van werkgevers onderzocht. De selectie in beroepen zou fundamenteel zijn veranderd in West-Europa in de negentiende en twintigste eeuw. Voor de bevolking in het algemeen zou er een verschuiving van selectie gebaseerd op toegeschreven kenmerken (bv, sociale achtergrond) naar verworven kenmerken (bv, scholing) hebben plaatsgevonden. We gaan in op deze vraag door het bestuderen van selectiecriteria van werkgevers in personeelsadvertenties.

We vroegen of werkgevers die werknemers voor complexere en hogere status beroepen geworven hebben minder geneigd waren om op toegeschreven kenmerken te selecteren. Dezelfde vraag werd gesteld in relatie tot werkgevers die in meer moderne gemeenten op zoek naar personeel waren. We verzamelden een steekproef van 2194 personeelsadvertenties uit vijf Nederlandse kranten in de periode 1870-1939. De gegevens bevatten advertenties voor 244 verschillende beroepen in meer dan 154 gemeenten over een periode van 69 jaar. Moderniseringsprocessen werden gemeten op gemeentelijk niveau, deze bevatten massacommunicatie, massatransport, veranderingen in waarden en de aanwezigheid van interne arbeidsmarkt structuren.

Het eerste doel van dit hoofdstuk was om het gebruik van toegeschreven en verworven eisen in vacatures te beschrijven. We hebben aangetoond dat in de periode 1870-1939 advertenties meer verworven dan toegeschreven kenmerken omvatten. Bovendien was er geen duidelijke trend naar werving die minder gebaseerd was op toegeschreven kenmerken in één van de vijf kranten in de steekproef. De beschrijvende resultaten geven aan dat werving via personeelsadvertenties in de jaren 1870 voor een groot deel gebaseerd was op verworven kenmerken en dat ook bleef. Ook de verklarende resultaten tonen aan dat wanneer we rekening houden met de krant waarin een advertentie werd geplaatst en het gewenste geslacht van de potentiële werknemer de trend naar een verlaging van het percentage toegeschreven eisen verwaarloosbaar wordt en niet significant.

Onze eerste verklarend vraag wordt beantwoord door te onderzoeken of advertenties voor hogere status of gespecialiseerde beroepen een lager percentage van toegeschreven

kenmerken bevatten. We vonden dat dit inderdaad het geval is voor hogere status beroepen. Echter, het maakte niet uit of de aangeboden betrekking in een gespecialiseerd beroep was voor het aandeel van toegeschreven kenmerken. Verder werd de selectie in beroepen niet beïnvloed door regionale moderniseringsprocessen.

Het blijkt dat de verschuiving naar selectie gebaseerd op verworven kenmerken, die naar verwachting gelijktijdig met modernisering plaatsvond, reeds aan de gang was vóór die tijd, althans in bepaalde sectoren van de economie waar de werkgevers ernaar streefden om werknemers te werven via krantenadvertenties.

In dit hoofdstuk richtten we ons op de klassieke vraag van de selectie in sociale posities met behulp van een zelden bestudeerde bron die 69 jaar omvat. We laten zien dat het bestuderen van de invloed van regionale modernisering op wervingsvoorkeuren van werkgevers een vruchtbare benadering is om een centraal mechanisme van de theorieën van industrialisme te testen. Terwijl werknemers voor hogere status van beroepen minder vaak werden geworven op basis van toegeschreven kenmerken, hadden moderniseringsprocessen nauwelijks een effect op de wervingsvoorkeuren van werkgevers.

Discussie en conclusie

In hoofdstuk 7 worden de resultaten van de bevindingen uit de empirische hoofdstukken samen gevat en worden de theoretische en methodologische implicaties van het onderzoek besproken.

Het centrale doel van dit proefschrift was het bestuderen van het proces van statusverwerving tijdens de loopbanen van mannen en vrouwen in Nederland in de negentiende en vroege twintigste eeuw, en de invloed van moderniseringsprocessen hierop. Dit doel werd bereikt door het bestuderen van de loopbanen van mannen en vrouwen en door het analyseren van wervingsvoorkeuren van werkgevers.

Er zijn twee beschrijvende vragen beantwoord. Ten eerste de vraag of in de eeuw voor de Tweede Wereldoorlog beroepsloopbanen geleidelijk zijn ontwikkeld in de richting van toegenomen carrière succes. Ten tweede of werkgevers in Nederland in de periode tussen 1870 en 1929 steeds minder zijn gaan selecteren op toegeschreven kenmerken.

In alle hoofdstukken van dit boek heb ik bevestiging gevonden voor de eerste vraag - de verhoging van de status over de historische tijd en gedurende de carrière - voor de loopbanen van zowel mannen als alleenstaande vrouwen.

Met betrekking tot de tweede beschrijvende vraag is te concluderen dat gedurende de onderzoeksperiode aanzienlijk meer verworven dan toegeschreven kenmerken in vacatures werden genoemd. Aan het begin van de onderzoeksperiode was het aandeel van toegeschreven kenmerken al vrij laag, en dit bleef zo gedurende de gehele onderzochte periode. De enige

opmerkelijke trend hierbinnen was de afname van hoe vaak de burgerlijke staat werd genoemd.

De eerste verklarende vraag was hoe individuele verschillen in carrière succes van mannen en vrouwen verklaard kunnen worden. Voor mannen bleken hulpbronnen een belangrijke rol te spelen voor hun carrièresucces. Mannen met een hogere sociale achtergrond, met meer ervaring en een basisopleiding hadden meer succesvolle carrières dan mannen met een lagere sociale achtergrond, met minder ervaring en zonder basisopleiding. Bovendien hadden mannen die migreerden van een ruraal naar een stedelijk gebied daarna een hogere beroepsstatus. Trouwen bleek niet bij te dragen aan het carrière succes van mannen. Ook voor alleenstaande vrouwen waren individuele kenmerken belangrijk voor hun statusverwerving. Vrouwen uit een hogere sociale achtergrond, met meer ervaring en vrouwen die kostwinner waren hadden meer succesvolle carrières.

Om de invloed van moderniseringsprocessen op het proces van statusverwerving te benaderen was de tweede verklarende vraag welke moderniseringsprocessen verklaren of individuen succesvolle beroepsloopbaan hebben gehad.

In het algemeen hadden mannen in gemeenten met meer geavanceerde moderniseringsprocessen een hogere beroepsstatus dan mannen in minder geavanceerde gemeenten. In plaatsen met massacommunicatie, massatransport een hogere mate van onderwijsexpansie was de gemiddelde beroepsstatus van mannen hoger. Over het algemeen waren de effecten wel vrij klein.

Onze bevindingen met betrekking tot het effect van de moderniseringsprocessen op de status van vrouwen verschilden van die van mannen. Moderniseringsprocessen blijken slechts een beperkte invloed op het succes van de loopbaan van vrouwen te hebben gehad. Naast de aanwezigheid van grote industriële bedrijven hadden geen van de anderen moderniseringsprocessen een effect op de positie van vrouwen.

De laatste verklarende vraag was of de mechanismen van statusverwerving zijn veranderd als gevolg van modernisering. Moderniseringsprocessen bleken nauwelijks effect te hebben op de mechanismen van statusverwerving. Slechts één individueel kenmerk, het effect van de status van de vader, bleek zwakker in gemeenten waar een treinstation was. Andere moderniseringsindicatoren (massacommunicatie, onderwijsexpansie, secularisatie en industrialisatie) bleken geen effect te hebben op de invloed van individuele kenmerken (de status van de vader, de basisopleiding en gehuwd zijn) op statusverwerving. Voor vrouwen werd zelfs geen van de effecten van individuele kenmerken op hun statusverwerving beïnvloed door moderniseringsprocessen.

Samenvattend toetsen we in dit proefschrift klassieke theorieën over de statusverwerving voor de loopbanen van mannen en vrouwen in de negentiende en twintigste eeuw in Nederland. Een belangrijke conclusie van dit proefschrift is dat individuele hulpbronnen, zoals bijvoorbeeld werkervaring en scholing, duidelijk van belang waren voor de statusverwerving van mannen en vrouwen in de negentiende en vroege twintigste eeuw. Een tweede conclusie is dat, hoewel de

klassieke verwachting van toenemend carrièresucces als gevolg van moderniseringsprocessen werd ondersteund, we geen aanwijzingen vinden voor het idee dat de mechanismen van statusverwerving veranderd zijn in reactie op moderniseringsprocessen.

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Acknowledgement

When I started this PhD project I had not really a clue how it would be to write a thesis with historical data on the careers of individuals who lived in the 19th and early 20th centuries. I couldn't have predicted that I would also enjoy the challenges of analysing big data sets with complex structures and all kinds of particularities. The fact that I did so is due to a number of people who directly and indirectly contributed to the process of writing of this thesis.

First and foremost I want to thank my supervisors Ineke Maas, Marco H.D. van Leeuwen and Henk Flap. Ineke, ever since I have followed your lectures in the SaSR Master programme I am deeply impressed by your expertise and passion for both theory and methodology. Your comments and input for my thesis were always of highest quality and your commitment is one-of-a-kind. Your involvement in the project was for me a major reason to start with it in the first place. Thank you for the trustful supervision. Marco, you guided me through the process of writing this thesis by providing insightful advice from the perspective of a historical sociologist (or a sociological historian, I am still not sure which better describes you). Your expertise and experiences in cross-disciplinary and international research projects was enormously valuable for my work. I also very much enjoyed our chats about all kinds of non-work-related stuff. Henk, you combine your view for the bigger picture with your attention to important details. Your years of experience and feedback were always very valuable and contributed to my thesis in numerous ways.

I was lucky that in 2009 Marco and Ineke started the ERC project 'Towards open Societies', I benefited greatly from this project. Most importantly I had three great colleagues, Antonie, Richard and Zoli. Antonie, it was fun to work with you and Richard on the HISC database, and thank you also for the office fun, I can't imagine an office without vijfuurtjes and a Dennis Bergkamp portrait hanging on the wall anymore. Richard, your PhD thesis was an important and valuable reference for my work, as were your experiences and your view on things - thanks for being an amicable colleague. Zoli, your enthusiasm is infectious, thanks for sharing your knowledge on data and methods.

In 2009 I followed the ICPSR summer school on the Longitudinal Analysis of Historical Demographic Data. The summer school and the pre-conference workshops in Chicago and Vancouver were opportunities for me to meet Phd students and researchers working with historical (demographic) data and to discuss my work. I enjoyed the four weeks in Ann Arbor very much and would like to thank the team who made that possible: George Alter, Myron Gutmann, Susan Leonard, Emily Merchant and Luciana Quaranta.

In 2010 I spent two months at the Department of Sociology at the University of Madison Wisconsin. Vielen Dank, Tom DiPrete, für deine tolle Gastfreundschaft und deine Kommentare zu meiner Arbeit.

Thank you Chris Gordon for polishing my English and thanks to the colleagues and friends who corrected my Dutch summary. I also want to thank Stephanie de Man for designing my cover and supervising the printing process.

The Department of Sociology at Utrecht University and the ICS created an inspiring and pleasant working environment. I benefited from valuable feedback at ICS forum days and internal seminars. The practical support of Bärbel, Dave, Ellen, Marjet, Pim and Tineke was especially helpful when getting used to work and teach at a Dutch university. I am also grateful to Werner Raub. You were an inspiring and encouraging SaSR coordinator and teacher. I am thankful to the colleagues also for nice leisure activities like the Batavieren races, feestjes, borrels... Special thanks go to Anja, Annemarije, Antonie, Asya, Dominik, Esther, Fenella, Jessica, Maike, Mieke, Ozan, Richard, Sarah, Sigrid, Vincenz, Wouter, Zoli.

Dagmar, Karin und Jana – die lieblichen Verdächtigen! Danke für die unzähligen geselligen Mahlzeiten und und und, ihr seid zu einer Ersatzfamilie geworden. Many friends left Utrecht over the last years; I am happy that some special people were still around for distraction from PhD stress and just having a good time together. Thanks Emilia and Fausto and (a bit further away) Angeles and Watse.

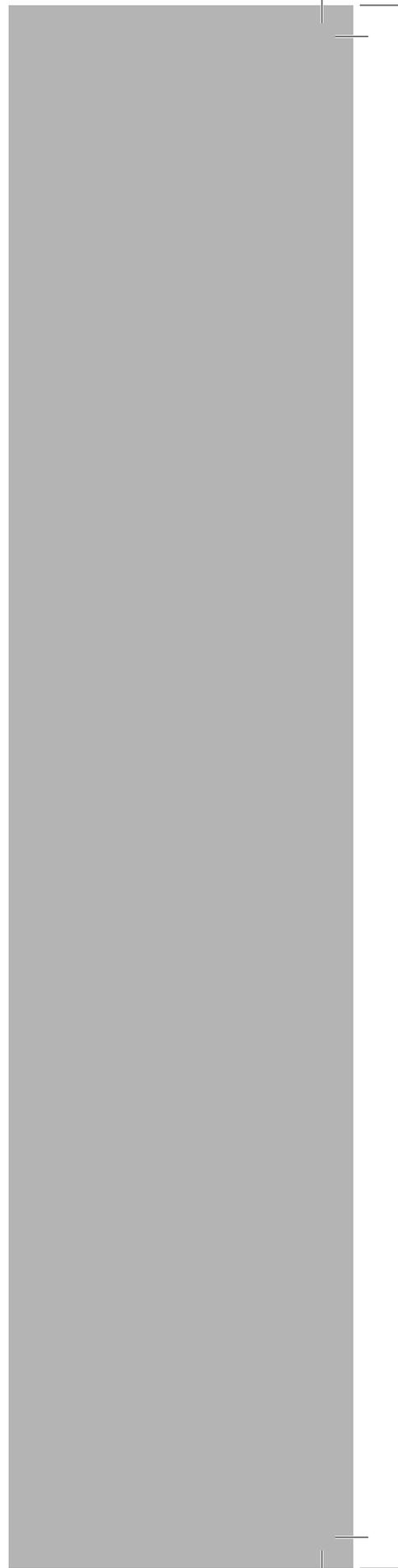
Ihr Mädels aus und in Bocholt habt mich regelmäßig abgelenkt und für Entspannung gesorgt. Ich hoffe, dass noch viele Fotos vom 25.12. dazu kommen. Anna, Astrid, Carmen, Esther, Eva M., Eva P., Fite, Karo, Kathrin, Lisa, Lucie, Sabrina – Danke!

Thank you, Kasia and Asya, for being my paranymphs. Ever since we started the SaSR programme we were friends and colleagues, and it means a lot to me that I could share the PhD period with you as well. Kasia, I enjoy very much that I can discuss my work but also totally different stuff with you. You always come up with good ideas and advice, whether for the right argument or an original recipe, the right dress and so much more – I couldn't ask for more. Asya, your enthusiasm for research always impressed me, but more importantly, it was very comforting to have you around. Thank you for your support, it was good to know that a good friend is just some offices away. I hope together with Dirk, Jeroen (sleeslee) and Barış we have many more good times to come.

Vielen lieben Dank an meine Familie, für deren Unterstützung in allen Lebenslagen. Meine Eltern Inge und Sigggi, Anne-Mareike & Andre mit Friederike und Oma haben auf verschiedenste Weisen wesentlich zum Gelingen (nicht nur) dieser Arbeit beigetragen. Dank geht auch an meine Familie in der Türkei. Çok teşekkürler Zekiye, Velişan, Aslı und Özgen.

Danke Barış für alles. Deine liebevolle Unterstützung war unheimlich wichtig für die Arbeit an meiner Dissertation - und noch viel wichtiger für alles andere in meinem Leben.

Curriculum vitae



| Curriculum vitae

Wiebke Schulz was born on January 25, 1983 in Wesel (Germany). In the fall of 2002, she started her undergraduate studies at Bremen University. After spending a year at the University of Liverpool (UK) as exchange student, she enrolled in the Masters programme 'Sociology and Social Research' at Utrecht University, where she obtained her Master's degree in 2007. In September of that year, Wiebke started as a PhD candidate at the Interuniversity Center for Social Science Theory and Methodology (ICS) at Utrecht University. As part of her PhD project, she spent two months at the Department of Sociology at the University of Wisconsin-Madison as a visiting scholar.

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