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MAGISTERARBEIT

Titel der Magisterarbeit

“What determines overall and specific job satisfaction in Germany and how is it influenced by employers?”

verfasst von

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(Mag. rer. soc. oec.)

Wien, 2015

Studienkennzahl lt. Studienblatt:
Studienrichtung lt. Studienblatt:
Betreuer:

A 066 913
Magisterstudium Volkswirtschaftslehre
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Abstract

Job satisfaction is a major determinant of overall happiness in a working society. Satisfied workers perform better and higher levels of job satisfaction are positively correlated with the performance of an organisation. In this paper, theory and literature on various aspects of job satisfaction are discussed. Using data from the BIBB/BauA Employment survey 2012 in Germany; attitude, behaviour and experience of a subsample of 10245 respondents are examined to find out about determinants of overall and specific job satisfaction of German employees. While results indicate that most employees are satisfied with their job in general, sources of dissatisfaction have been identified via Ordered Logit regression. Expectations tend to have a negative impact on job satisfaction when they are not met. Employers might increase employee satisfaction significantly when they have supportive supervisors, manage to reduce acute pressure, offer sufficient breaks and take family and private interest of the employees into consideration.

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1. Introduction

A job is a major determinant of a person's identity in a working society. More than half of the non-retired adult population spends most of its waking hours at work and most people respond to the frequently asked question "What do you do"? with their job title. Thus when seeking to understand the notion of well-being and happiness in life, no research attempts can be complete without considering subjective well-being at work (Judge and Klinger (2007, p. 393).

In the first part, this paper discusses some of the theoretical background of job satisfaction and offers a literature overview on various aspects of job satisfaction. In the second part, results from an own analysis are presented and discussed. Using data from the BIBB/BauA Employment Survey 2012 from Germany, an Ordered Logit regression model was used to estimate significant factors that influence individual satisfaction at work. Total job satisfaction measures, as well as specific aspects of job satisfaction, have been used to complete the analysis. In contrast to most of the previous literature in the field, a variety of additional variables regarding job development, work environment and employer related variables have been included in the model.

Results of this thesis indicate that most people in Germany are quite satisfied with their job and with what they do at work. However, there is some variability in the level of satisfaction. Expectations, either formed through educational background, past training or current job status, tend to have a negative impact on job satisfaction when they are not met. Working conditions, the work environment and the employer also influence the level of individual satisfaction at the workplace. The role of the employer needs to be further investigated, but the decisions employers make might play an important role in the well-being of employees in Germany and other countries. Employers who successfully manage to reduce perceived acute pressure, who have helpful and supportive supervisors, who manage to offer sufficient breaks and an adequate work-life balance, might increase the satisfaction levels of their workers significantly.

Happiness, life satisfaction and subjective well-being have increasingly experienced a lot of attention in many research fields. Subjective data and the study of job satisfaction have been of extensive interest to psychologists (e.g. Argyle, 1989) and sociologists (e.g.

Hodson, 1985; Kalleberg and Loscocco, 1983). Starting with the pioneering and innovative work of Freeman (1978), economists have also increasingly become concerned with the topic of job satisfaction and its implications. Lower job satisfaction seems to be associated with behaviour of people in the labour market, such as higher absenteeism, higher turnover and a higher quitting rate. Further, there seems to be evidence (Sousa-Poza and Sousa-Poza 2000b) that satisfied workers perform better. Rodriguez-Pose and Vilalta-Bufi (2005) analysed the influence of job satisfaction on economic performance across European regions, finding that job satisfaction might have an even stronger effect on economic growth than does education (Mysíková and Večerník, 2013, p. 540).

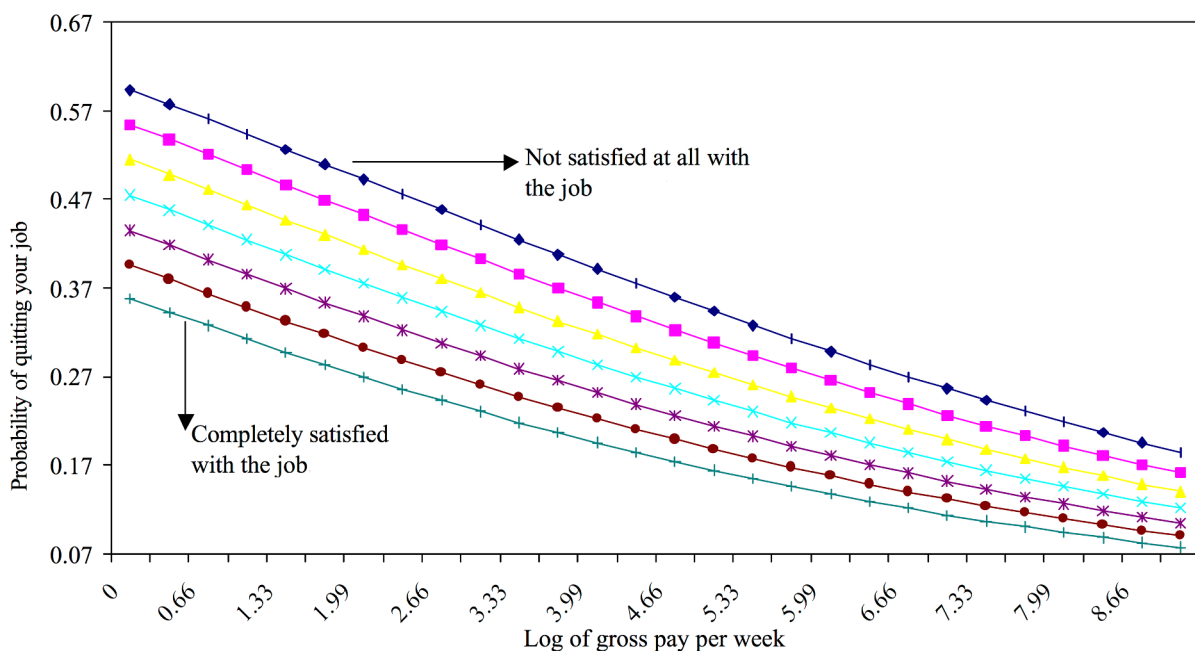


Figure 1: Probability of quitting one's job (y-axis) and log of gross pay per week over several levels of job satisfaction (x-axis).

Source: Lydon and Chevalier (2002, p.18)¹

¹ The sample was comprised of 9.000 workers from the first, second, seventh and eight waves of the British Household Panel Survey. 15% are quitters, standard errors are corrected for clustering. The estimates are, however, not corrected for a possible simultaneity bias arising out of the joint determination of either job satisfaction and quits, or wages and quits.

Figure 1 displays the negative relationship between job satisfaction and probability of quitting found by Lydon and Chevalier (2002, p.18). Over the entire pay distribution, less satisfied workers are more likely to have quit their jobs within the observed period. This effect is very strong for people with a low income level where the difference in the probability of quitting the job is almost 30 percentage points higher for those who are not satisfied at all with their job than for those who are very satisfied.

1.1 Theories of Job Satisfaction

A commonly used definition of job satisfaction, originating from Locke (1976), is as „a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experience“ (Locke, 1976, p. 1304). Spector (1997) names 14 different aspects that determine whether the individual is satisfied at the facet level of their job: coworkers, communication, fringe benefits, appreciation, job conditions, organisation, nature of the work, personal growth, policies and procedures, promotion opportunities, security, supervision and recognition.

There are several psychological theories related to job satisfaction. Locke’s Range of Affect Theory (1976) is widely considered to be the most famous job satisfaction model. He argued that individual values would determine the satisfaction of the job and the theory is defined by a discrepancy between what an employee wants in a job and what one has in a job. One can illustrate the satisfaction model by the formula

$$S = (V_t - P_i) \times V_i$$

or

$$\text{Satisfaction} = (\text{want-have}) \times \text{importance}$$

where S is satisfaction, V_t is the value content, P_i is the perceived amount of the value provided by the job, and V_i is the importance of the value to the individual. This implies that discrepancies between what is desired and what is received are dissatisfying only if the job facet is relevant to the individual. Since individuals consider multiple facets when they evaluate their job, the cognitive calculus is repeated for each job facet. Overall job satisfaction, which is the main interest in this paper, is subsequently estimated by

aggregating across all aspects of a job, weighted by their importance (Locke, 1976; Judge and Klinger, 2007, p. 400).

Another broadly cited theory that attempts to explain satisfaction and motivation at work is the Two-Factor Theory, or Motivator-Hygiene Theory, by Herzberg (1966). Motivation and hygiene factors are the core of the theory and drive the level of satisfaction or dissatisfaction of individuals. An employee's motivation towards their work is consistently related to the level of job satisfaction. Motivating factors are those aspects of the job that make employees want to perform well, and provide people with satisfaction. This might be achievement in work, recognition or promotion opportunities. According to Herzberg, these motivating factors are considered to be intrinsic to the job or the work carried out. Examples of hygiene factors include aspects of the working environment such as company policies, pay, supervisory practices and other working conditions (Schultz and Schultz, 2010).

Hulin and Judge (2003) noted that job satisfaction is associated with multidimensional psychological responses to an individual's job, which have cognitive (evaluative), affective (or emotional) and behavioral components (Judge and Klinger 2007, p.394). Scales of Job satisfaction vary in the extent to which they assess the affective feelings about the job or the cognitive assessment of work. Affective job satisfaction is a subjective construct that is associated with feelings individuals have about their jobs, and it reflects the degree of pleasure the job as a whole induces. Cognitive job satisfaction, in contrast, is a more objective and logical evaluation of various facets of a job, such as income or measurable work conditions (Moorman, 1993; Thompson and Phua, 2012).

1.2 The Economic Approach to Job Satisfaction

While in mainstream economic research the revealed preferences approach, according to which preferences are inferred from real choices, is still dominant, sociologists have a long tradition of measuring values and orientations of people directly in survey questionnaires (e.g. the European and World Values Studies, the European Social Survey; Muffels, 2011, p.2). Behavioral economic and psychological literature offer some evidence that people's true preferences cannot be fully inferred from the real choices

they make owing to the issue of bounded rationality. Economic Agents tend to make inconsistent choices, do not learn from previous experiences, adapt their evaluation of the situation to how it is framed and in many ways do not act according to rational economic theory models (Kahneman and Krueger, 2006). Thus, a direct measurement of preferences, and therefore utility, also known as the stated preference approach, has become a major branch in the economic literature. Also, though it is a subjective notion, Clark and Oswald (1996) consider job satisfaction to be a more comprehensive measure of a worker's utility than mere earnings, since it enables the capture of more of the complicated work characteristics such as fringe benefits, the chance of promotion, working conditions, effort requirement, the quality of colleagues and supervisors and the intrinsic benefits of the actual work being done (Bender et al. 2005, p.479).

Moreover, Blanchflower and Oswald (1999) state that such methodologies have been successfully used for years by social psychologists and that they are useful for economists since they do correlate in many ways with objective outcomes. For instance, higher job satisfaction within a firm correlates positively with its performance (Ostroff, 1992). Lévy-Garboua and Montmarquette (2004) interpret job satisfaction as the employee's experienced preference for their job. Individual job satisfaction reported in questionnaires is thus the mere judgment that the respondent would wish to repeat the past career if they now had to choose again. One can think of it as a sequence of job experiences compared to mentally experienced alternatives. This concept of job satisfaction of an ex post comparison can be interpreted as a real manifestation of one's feeling of regret rejoicing.

This paper also uses a revealed and experienced preferences approach in order to find out about factors that foster or hamper individual satisfaction at work. Even though one can define the individuals in my sample as subjects who face economic decisions due to scarce resources, such as time and money, the main information for the regression analysis is drawn from their subjective statements on various aspects of their work and their perception of the present and past state.

2. Literature Overview on Job Satisfaction

2.1. Job Satisfaction Among Different Countries

Germany

A publication by the Institute for Work, Skills and Training of the University Duisburg-Essen analysed the historical development of job satisfaction in Germany between the mid 1980s and 2009, using data from the Socio Economic Panel 2007 (Wagner et al., 2007) with updated values for the last two years.

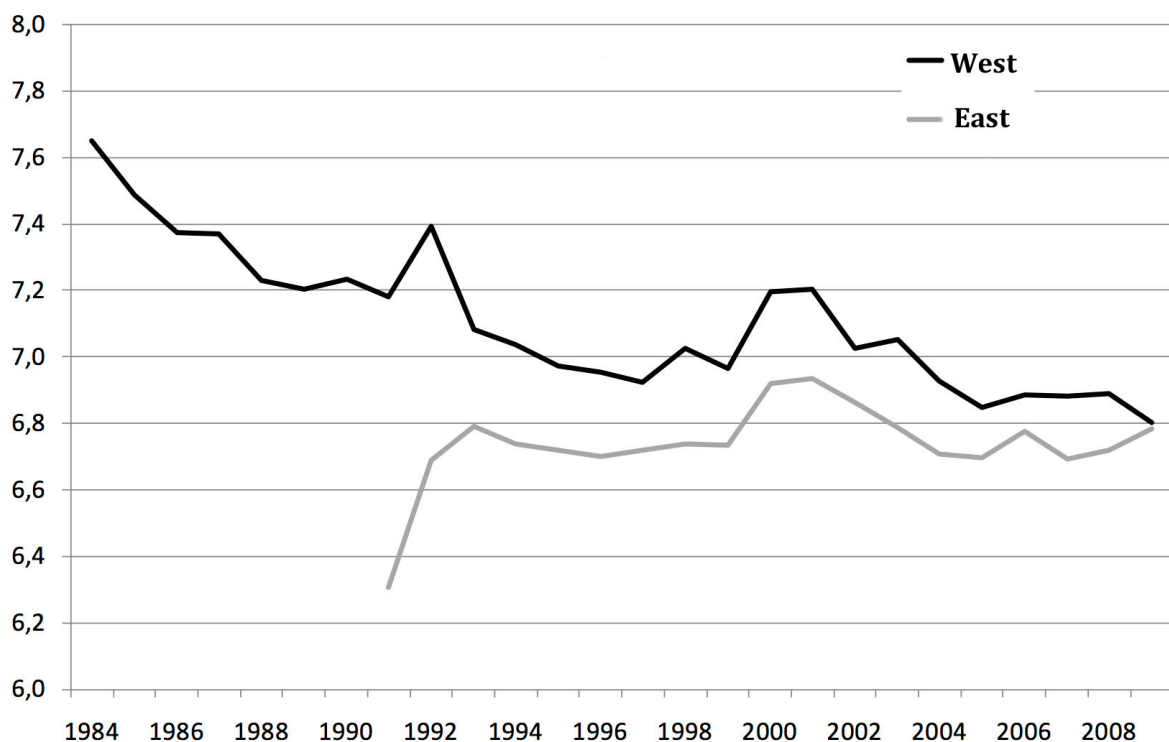


Figure 2: Average job satisfaction of West- (1984-2009) and East-German (1991-2009) employees.

Source: Bohulskyy et. al (2011) with data from the SOEP, Wagner et al. (2007)

Figure 2 displays average job satisfaction levels for East- and West-German employees between the ages of 20 and 64 years. The scale ranges from 0, *very dissatisfied at work*, to 10, *very satisfied at work*. Generally, it can be said that the average level of satisfaction has decreased quite remarkably in West Germany, from average levels of 7.6 in 1984 to

only 6.8 in 2009. The job satisfaction level of East-German Workers, however, has increased within the 1990s, and the difference between the two German regions has come close to zero by 2009. There are several reasons that can possibly explain the decrease in job satisfaction among West-German workers. Firstly, there has been deterioration in income conditions for many employees with respect to the distribution of firm profits and wages, as well as the real wage development, which has stagnated after the year 2000. There has also been an increase in the wage gap, which results in negative attitudes towards work from especially low wage earners (Brenke, 2009). Additionally, as Erlinghagen (2010) found out, more workers started to fear about the security of their job. Drobic et al. (2010) also point out that, due to changing role models, the compatibility of family and occupation decreased, which caused additional tension. Finally, Flecker (2005) assumes that the pressure to perform at work has also increased and concludes that a higher flexibility process within enterprises caused additional pressure for employees.

In recent years, there have not been many economic publications on overall job satisfaction in Germany. However, in a study analysing information from the longitudinal Socio Economic Panel 2007 (Wagner et al., 2008), which provides data from 22.000 people in Germany, Fietze (2011) investigates the influence of personality characteristics and working conditions on job satisfaction. OLS regression results show that both personality and subjective working conditions are relevant determinants of job satisfaction. Working conditions such as effort-reward, imbalance and autonomy at work have the highest explanatory power. Personality characteristics, such as emotional stability, also play a crucial role in achieving higher job satisfaction. Further, the results for Germany are mostly consistent with the existing literature on job satisfaction from other countries. However, younger employees are more satisfied than older workers, with satisfaction levels decreasing in a non-linear way. Women are more content at work than men and a higher income leads to higher levels of satisfaction. The author did not find a significant difference in job satisfaction levels between East- and West-German employees.

Other Countries

Table 1 reports mean job satisfaction level among different countries. The dataset comes from the European Social Survey (ESS) 2010, which includes a special module on Work, Family and Well-Being. The question on job satisfaction² has an 11-point answering scale, from 0 – extremely dissatisfied to 10 – extremely satisfied. One can easily see that the levels of job satisfaction are fairly high, with only a minority of individuals reporting dissatisfaction in their job. They are also quite compact between countries themselves, with the lowest level of 6.7 for the Russian Federation and the highest level of 8.2 reported by Danish workers. In their study, Mysíková and Večerník (2013) analyse data from the ESS 2010 to investigate factors of job satisfaction within Europe and make comparisons between Western Europe and Eastern Europe. Scandinavian countries and Switzerland show the highest levels of satisfaction, while people in Eastern Europe and Southern Europe have the lowest scores. In general, the article confirms the existing differences between Eastern and Western European countries

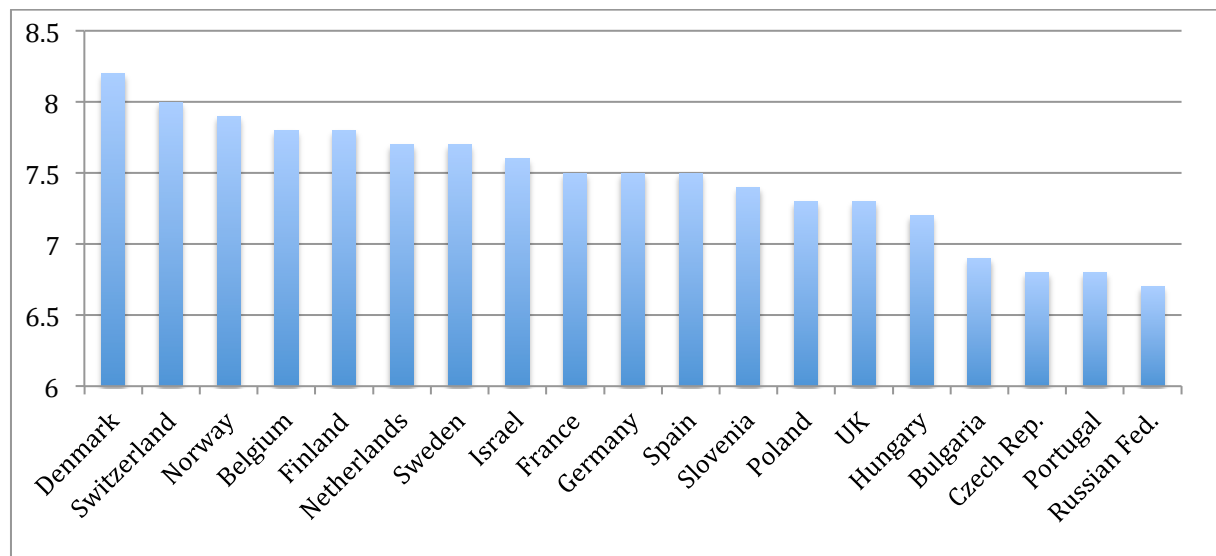


Table 1: Mean job satisfaction levels across different countries.

Source: ESS round 5 - European Social Survey 2010

² The exact wording is: „How satisfied are you with your main job?“

However, there are different dynamics concerning the impact of certain factors on job satisfaction. The effects of gender and education are insignificant in the Eastern European region. Health and safety, as well as the level of self-organisation play a more important role in the Western European region, while variety in work and good opportunities for advancement have a stronger impact on job satisfaction in Eastern Europe. In the Russian Federation, there is a particularly strong negative effect on job satisfaction caused by working-leisure time imbalance. Moreover, they find that income has a stronger effect on job satisfaction in Germany, France and the UK compared to in other Western European countries (Mysíková and Večerník, 2013, p.544)

2.2 Income

In economic theories, wages have always played an important role in the formation of labour market models. They are often considered to be a major part of the total utility generated by a job (Groot and Maassen van den Brink, 1999). While in most models it is expected that higher wages increase the utility derived from work, empirical evidence on this point is mixed.

Clark (1996) made an extensive analysis from a study of 5000 British employees to examine the relationship between three measures of job satisfaction and a wide range of individual- and job-related characteristics. Using cross-tabulation results only, there is no strong evidence for a relationship between high pay and a higher level of individual job satisfaction. However, once controlling for other variables in the regression model, the income is positively and highly correlated with satisfaction with pay and it exhibits a weaker but significant positive correlation with overall job satisfaction. Sloane and Williams (2000) also found a positive effect of wage income levels on job satisfaction for both male and female workers in Britain, with the effects being stronger for men than for women.

Groot and Maassen and van den Brink (1999) offer an explanation for the partial lack of empirical support towards a positive relationship between higher wages and higher levels of job satisfaction. They argue that adaptation to higher wages, also known as a preference drift, might explain this phenomenon. They state, that while the utility of a job is a latent variable that is not directly observable, one can observe the response to a question on satisfaction with the job in general, which is a categorical ordered response

variable. With preference drift, they expect that not only the job satisfaction function but also the distribution of the response categories depends on wages. If for example a worker values her satisfaction to be at 4 on a scale from 1 to 7, an increase in wages increases her job satisfaction to 6, but because of preference drift, part of this gain in job satisfaction evaporates so that eventually her job satisfaction is rated at 5. Higher wages increase the gap between two threshold levels – the higher the wage rate, the wider the difference between two job satisfaction levels. Their empirical results support the preference drift hypothesis and suggest that about 20% to 60% of wage increase evaporates because of preference drift, depending on the initial level of job satisfaction (Groot and Maassen and van den Brink, 1999, p. 366).

2.3 Gender

Bender et al. (2005) observed a shifting focus in the economic literature from estimating the size of the gender earnings gap to instead explaining the gender gap in job satisfaction. Their main assumption is that the satisfaction gap between men and women is due to complex work characteristics. Numerous studies found an asymmetrical relationship between gender earnings and job satisfaction in both the UK and the USA. While the estimates indicate a lower level of earnings for women in both countries, they also report a higher level of job satisfaction for women in both the UK and the USA (Clark and Oswald, 1996; Sloane and Williams, 2000; Sousa-Poza and Sousa-Poza 2000c).

This phenomenon is sometimes also referred to as the paradox of the more content female worker in the literature and there are several explanations offered for this outcome. Clark (1997) states that satisfaction is a function of expectation and argues that if women have lower expectations about labour market outcomes, they are more easily being fulfilled. Others argue that the bundle of characteristics associated with women's work is the reason why they report higher levels of satisfaction despite their lower pay (Bender et al. 2005). Some authors argue that women place less value on remuneration. Clark (1997) shows that women are not likely to identify earnings as the most important aspect of work life, but rather a good relationship with the supervisor and co-workers or the significance of the task. The role of occupational segregation is also to be pointed out. Only because women disproportionately more often choose or

are crowded into a particular set of jobs do they have lower expectations or the bundle of characteristics associated with higher satisfaction (Bender et al. 2005, p. 480). One might anticipate that the work satisfaction of women is lower in female dominated job fields into which they are crowded, but data from the UK (Clark, 1997; Sloane and Williams, 2000) show that the job satisfaction level of women increases as the female share of the workspace increases. According to Clark (1997), this might be explained with an expectation argument in which women have higher expectations in male dominated jobs with regards to satisfaction from work (Loscocco and Spitze, 1991).

Bender et al. (2005) use data from the US to explain the paradox of the more content female worker. They demonstrate that men and women value job flexibility in different ways and, having controlled for that, the gender composition of the workplace is no longer relevant in determining the job satisfaction of women. Women in female dominated areas may therefore report higher job satisfaction because they value job flexibility differently, and thus choose to dominate the workplaces that provide job flexibility. Kaiser (2005) shows that the gender paradox cannot be generalised. Labour market modernisation in the sense of equal gender opportunities is likely to be the reason for the fading away of the gender paradox in Finland, Denmark and the Netherlands (Mysíková and Večerník, 2013, p.542).

2.4 Age

In his analysis of British employees, Clark (1996) also examines the relationship between job satisfaction and age. He suggests that there is evidence of a U-shaped relationship between overall job satisfaction and age, with the respondents in their twenties or thirties having the lowest satisfaction levels. For other measures of satisfaction, including satisfaction with pay and work itself, employees aged sixty or older are the most satisfied, followed by workers in their fifties. Clark and Oswald (1996) partly explain this U-shape by a matching theory, where older workers have had more time in the labour force to find a job that suits them. Additionally, dissatisfied older workers might find it easier to leave the labour market than their younger colleagues.

2.5 Education

An intuitively surprising, but empirically well-established result indicates a *ceteris paribus* lower level of job satisfaction reported by individuals with higher levels of education. Clark (1996) and Clark and Oswald (1996) find that the reported satisfaction levels are inversely related to the comparison earnings levels. Further, they state that, holding income constant, satisfaction declines as the level of education increases. They explain this tendency as being partly due to expectation differentials between various levels of education. People with higher education degrees develop higher expectations towards various job aspects. While the causal relationship between education and job satisfaction is ambiguous, comparisons in the utility function seem to matter. Blanchflower and Oswald (1999) initially found a positive effect for education, but after controlling for income, this effect disappeared. In their study with data from British employees, Gazioglu and Tansel (2006) found the highest levels of dissatisfaction in the case of degree and post-graduate degree holders, who show the highest dissatisfaction levels with their sense of achievement and influence over the job.

2.6 Job Match

In their analysis of Britain and Germany, Green and Tsitsianis (2005) introduced measures of the educational mismatch between worker and job. They interpret over-education and under-education as a lack of match between an employee's education level and the education level required by the job. They found negative regression coefficients for both types of mismatch, but this only partly explains the decline in job satisfaction in Germany and Britain for the late 1980s and 1990s. Using data on UK graduates, Belfield and Harris (2002) focus on explaining job satisfaction in terms of individual matching to jobs, with the match depending on reservation returns, information sets and job offer rates. They found only limited support for the argument that a better job matching explains higher job satisfaction.

2.7 Marital Status

The empirical evidence on job satisfaction related to marital status has been mixed in the past. Many economic and psychological papers found that married individuals are

generally happier with their lives (e.g. Frey and Stutzer, 2003). Clark (1996) also concludes that married employees are more satisfied in their job than single individuals. However, Gazioglu and Tansel (2006) found different results. Putting individuals into the two categories married (living with a spouse or a partner) and single (widowed, divorced or separated), they observe less satisfied married workers in Britain on various measures of satisfaction, however, they do not interpret this result or offer an explanation.

2.8 Job Security

In their study, Green and Tsitsianis (2005) describe trends in job satisfaction in Britain and Germany between 1984 and 2002. They also analyse the relationship between perceived job insecurity of workers and their reported level of job satisfaction. In Germany, they found that the job security variable has a highly significant effect on satisfaction in East- and West Germany. Using the category in which job losses are thought to be “definite” as a reference, increasingly higher levels of job satisfaction are found as the fear of job loss diminishes. They found this effect to be additional to the negative impact of those workers on a temporary job contract. Similar results have been found by Blanchflower and Oswald (1999) and Gazioglu and Tansel (2006), who conclude that the dummy variable of whether a person feels secure or not at their job is highly significant at different aspects of job satisfaction.

2.9 Fixed and Flexible Contracts

Several studies have been published to investigate the job satisfaction of workers with fixed-term contracts. The empirical evidence is somewhat mixed: some studies show insignificant differences in job satisfaction between workers in permanent jobs and those with fixed-term contracts (D’Addio et al. 2007, Bardasi and Francesconi 2004), while others find significantly lower job satisfaction among fixed-term workers (Booth et al. al 2002, Clark and Oswald 1996). With data from the Eurobarometer, Origo and Pagani (2010) show that in countries with generous unemployment insurance systems, fixed-term workers are not significantly less satisfied with their job. However, if unemployment insurances only provide basic services, fixed-term workers are more worried and dissatisfied. A study by Jahn (2013) investigates whether workers in

flexible employment environments report lower satisfaction with their job than employees with permanent job contracts. Using longitudinal data for Germany, she finds that it is not the formal job security provided by the contractual agreement, but rather the perceived security that matters for job satisfaction.

2.10 Expectations

Whether or not an employee is satisfied with their job does not only depend on the direct quality of work, but also on the expectation of the worker with respect to the job. Muñoz de Bustillo and Macías (2005) see the key to job satisfaction as the fit of the objective conditions of the job with the worker's expectations. Satisfaction therefore depends on the relationship of the two magnitudes, expectations and reality. The better the fit between expectations and job reality, the higher the level of satisfaction, while dissatisfaction occurs when the reality of the job is below the worker's expectation. This concept stems from social psychologists who have worked on the development of theories of job satisfaction (e.g. Locke, 1976; Lawler 1973). It is also in accordance with the theory of Lévy-Garboua and Montmarquette (2004) mentioned previously, where the ex post evaluation of regret rejoicing is also dependent on past and present expectations of the individual.

Using data from the 2000 survey on Quality of Life at Work in Spain, Muñoz de Bustillo and Macías (2005) analyse a sub-sample of over 4000 wage earners. They conclude that job satisfaction is not a precise indicator of job quality³ and that the little variability in satisfaction bears hardly any relation to any relevant social or economic variable they have in their model. They explain the convergence in the level of reported job satisfaction with a theory of cognitive dissonance, in which people tend to adapt their expectations and even perceptions of the environment to its actual conditions. Moreover, the objective conditions also tend to adapt to expectations, thus people try to find work that fits best their work expectations. However, if someone works in a job that does not fit their expectations, they might end up leaving it if a change in their expectation seems unlikely. This dynamic model of fit partly explains the little variability

³ They do not mention a clear definition of job quality, however its indicators are associated with the salary, level of team work, type of contract, public or private sector, etc. (Muñoz de Bustillo and Macías, 2005, p. 664)

in job satisfaction they observe in Spain and that can also be observed in other countries. People have different preferences and ideas of what is a good job in general. In a supposed equilibrium, different employees would end up in different jobs with different objective characteristics, in most cases with a high level of satisfaction. Since not all people can find the job that fits their expectations best, they lower their work expectations until they adapt to the type of job available on the market. Since the satisfaction concept is relative, those workers with less attractive jobs, but with little expectation as to their possibility of changing their job, might end up lowering expectations and thus increase their level of satisfaction at work (Muñoz de Bustillo and Macías, 2005, p. 672).

2.11 Establishment Size

The relationship between establishment size and job satisfaction has also been broadly discussed in the economic literature. An early contribution comes from Scherrer (1976). Analysing the Quality of Employment Survey (QES) 1973, he finds that large establishments are associated with lower levels of job satisfaction. Idson (1990) studies the relationship between firm sizes, job satisfaction and work structure in the USA, using data from the 1977 QES survey. He finds that workers in larger establishments report lower levels of job satisfaction, which can be largely attributed to the inflexibility of the work environment. However, once controlling for the nature of the work environment, the lower levels of satisfaction become insignificant. Similar results have been found for Britain by Clark (1996). Analysing data from the study of 5000 British employers, he concludes that the well educated, those working more hours and workers in larger establishments report lower levels of job satisfaction. Garcia-Serrano (2011) investigated the relationship between firm size and working conditions. He concludes with the fact that employees in larger establishments face a worse work environment, and that being employed in large establishments significantly reduces job satisfaction when there are no control variables for working conditions included. However, when taking working conditions into account, the difference across size categories becomes statistically insignificant. There is also no systematic variation in intentions to quit across establishment size categories, even if controlling for wage levels (Garcia-Serrano, 2011, p. 243).

2.12 Job Satisfaction and Performance

When thinking about implications of job satisfaction, the effect of satisfaction on the performance of the organisation and on individual turnover seems especially interesting in competitive markets. While most people intuitively might see the relationship running from employee satisfaction to organisational performance, one has to be careful with a causal interpretation. Schneider et al. (2003) suggest that analysing data collected at different times, with data on attitudes collected first and data on performance outcomes collected second, might lead to wrong conclusions in that it prevents the investigation of the effect of performance on satisfaction. For instance, employees who are in higher performing organisations are more likely to be satisfied than those in lower performing establishments simply because their organisations are doing well.

A review of economic and psychological literature by Iaffaldano and Muchinsky (1985) estimates a statistical correlation between job satisfaction and performance of 0.17. These authors did not see an existing relationship between the two variables. This result had an important impact on researchers in the field of Psychology and on some managers and Human Resources practitioners. However, there have been other results as well. In a review of 301 studies, Judge et al. (2001) find that when correlations are appropriately corrected for sampling and measurement errors, the average correlations between job satisfaction and performance are as high as 0.30. Additionally, this relationship is yet higher for complex jobs than for less complex jobs (Saari and Judge, 2004, p. 398).

Harter et al. (2002) published a meta-analysis of various studies that have originally been conducted by the Gallup Organization. They put job satisfaction and employee engagement, which is measured by a worker's involvement and enthusiasm for work, in relation to performance variables. Using data on 7939 business units in 36 organisations, the authors find positive and significant correlations between employee satisfaction/engagement and the business unit outcomes of enterprise profit, employee turnover, the productivity, workplace accidents and customer satisfaction. The authors also state that companies can learn more about their business outcomes if they studied factors that drive employer engagement (Harter et al., 2002, p. 275).

2.13 Employer Related Effects and Teamwork

Job Training

Gazioglu and Tansel (2006) use a data set of 28240 British employees from the 1997 Workplace Employee Relations Survey to study various aspects of job satisfaction. In particular they look at employee-employer relations and the effects of job training on satisfaction levels. This effect has hardly been examined in the economic literature. With respect to training opportunities during the past year, they observe statistically significant and positive effects of a higher level of training on satisfaction with amount of pay, influence over job, sense of achievement and respect received from supervisors. This result is consistent with the hypothesis that job satisfaction is an increasing function of training opportunities (Hamermesh, 1977).

Support and Help from Supervisor

There are several explanations in business, economic and psychological theories, for interpreting different kinds of relationships between supervisor and subordinate. Graen, Lidan and Hoel (1982) use a simple approach for their analysis, which suggests that supervisors use a similar or average leadership style towards all subordinates. In practice though, many employees experience an inconsistent treatment policy from the supervisor towards their subordinates. Deluga (1998) uses the theory of leader-member exchange to explain the supervisor-subordinate relationship. It assumes that there are many distinct roles distributed by the supervisor among the subordinates they are working with. Bauer and Green (1996) state that these asymmetrical relationships are developed because of the supervisor's scarce time resource and individual quality differences with respect to a personal interaction.

In a study using data from 48 manufacturing companies in the UK, Griffin et al. (2001) explore the role of supervisory support in explaining the link between teamwork and employee satisfaction. They find that an increase in teamwork reduces the level of supervisory support in organisations. Since supervisory support is an important determinant of job satisfaction, they suggest focusing on job redesign strategies that not only increase experiences such as autonomy through teamwork, but also enhance the effectiveness of supervisor roles (Griffin et al., 2001, p. 548).

Acute Pressure

According to the Person-Environment Fit (P-E Fit) theory (French and Caplan, 1972), stress arises from the misfit between an individual and his or her environment. This misfit can occur at different levels (Edwards, Caplan and Harrison, 1998), for example if there is a mismatch between the demands placed on an individual and their abilities to meet those demands. This can result in coping and defense mechanisms, which again can influence objective and subjective representations of the environment (Brewer and Mc Mahan-Landers, 2003, p.38). An inverse relationship between job stress and job satisfaction among various population groups has been reported consistently in the literature (e.g. Beehr, Walsh and Taber, 1976 or Cotton, Dollard and de Jonge, 2002).

Teamwork and Community

Parker and Wall (1998) describe teamwork as groups of interdependent employees who work cooperatively in order to achieve a desired group outcome. Effective teamwork can enhance the motivational properties of work and increase job satisfaction. However, the job satisfaction of team members is determined by several factors, such as the composition of the team, group processes within the team, and the nature of the work itself (Campion et al., 1993; Gladstein, 1984). The introduction of teams does not always result in expected outcomes for individuals and enterprises because there is no simple process through which teamwork influences job satisfaction (Hackmann, 1990).

2.14 Job Satisfaction and Work-Family Relationship

A study by Yu (2011) examines the moderating effects of perceived supervisor support and internal locus of control on the relationship of work-family conflict with job satisfaction. Using data from Taiwan, they find work-family conflicts to have a negative effect on individual job satisfaction. However, perceived supervisor support and internal locus of control not only have a positive direct effect on job satisfaction, but also significantly moderate the relationship between work-family conflict and job satisfaction.

2.15 Job Satisfaction and Health

Health condition plays an important role in the context of one's working life and has extensively been studied by health scientists and organisational psychologists. A broad meta-analysis by Faragher et al. (2005) of 485 predominantly cross-sectional studies, based on self-reported measures of job satisfaction and health condition, show an overall correlation across all health measures of 0.312. Gazioglu and Tansel (2006) analyse British data where employees were asked if they have any long-standing health problems or disabilities, which limit their activities at work, at home or in their leisure time. They found a significantly negative relationship between health problems and various measures of job satisfaction, such as satisfaction with influence over job, with sense of achievement and with respect received from supervisor. Only the level of satisfaction with the amount of pay was not determined by the health variable. This result is similar to those found by Clark (1996), who assumes that workers in poor health states have a tendency to report low levels of satisfaction with all aspects of their life and that they can only obtain relatively unsatisfying jobs. Organisational psychologists suggest that job satisfaction may have an indirect influence on workers' health through physical as well as psycho-social employment conditions, such as workplace safety, quality of air, degree of automation and lighting, as well as harassment, hierarchical position, responsibility, network support, effort-reward imbalance, work stress and job security (Stansfeld et al., 1997, 1998).

A study by Fischer and Sousa-Poza (2009) evaluates the relationship between job satisfaction and health measures of workers using the German Socio-Economic Panel, a longitudinal panel survey with representative data for the population of Germany. They address two methodologically important design problems that have previously challenged authors in that field. One is a cross-sectional causality problem and the second is the absence of objective measures of physical health as an addition to self-reported measures of the health status. They use a panel structure with individual fixed effects to reduce the bias from omitting unobservable personal-social characteristics. Additionally, they employ more objective health measures, such as health-system contacts and disability status, and relate these to self-reported assessments of individual health. They find a positive link between job satisfaction and subjective health measures. Employees with higher job satisfaction levels feel healthier and are more satisfied with

their health. This result also holds for more objective measures of health. In particular, they state that improvements in job satisfaction over time appear to prevent workers from further health deterioration (Fischer and Sousa-Poza, 2009, p. 71).

3. Data and Methodology

After having discussed theoretical aspects of job satisfaction and a selection of the existing literature, the second part of this paper delivers an own analysis with data from Germany. This is done via an Ordered Logit regression model on overall as well as specific aspects of job satisfaction. There are several reasons why data from Germany are used in the analysis. The main reason was the availability of the up-to-date sample of the BIBB/BauA Employment Survey 2012, which was made publicly available in spring 2014. Additionally, it offers a deep insight into the labour market by integrating a lot of data on employee experiences, preferences and many socio-economic variables that were previously not, or were only partly available. Even though there is a broad literature on job satisfaction in the USA and parts of Europe or Asia, the amount of academic publications on that topic remains comparatively low in the German speaking area.

3.1 Data

The data used for the model and the analysis come from the BIBB/BauA Employment Survey of the Working Population on Qualification and Working Conditions in Germany 2012⁴. The Employment Survey was conducted by the Federal Institute for Vocational Education and Training (BIBB) and the Federal Institute for Occupational Safety and Health (BauA)⁴ in Germany. There have been six previous Employment Surveys by the BIBB and BauA; the one used for the analysis is the seventh wave and was run via telephone interviews between October 17th 2011 and April 1st 2012. The Employment Survey is a representative survey and a total of 20036 employees in Germany above the age of 15 years were interviewed about their work life. Only individuals with a paid

⁴ Bundesinstitut für Berufsbildung (BIBB) and Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (BauA) are the corresponding names in German

work activity, who work at least 10 hours per week and are fluent in German, were included in the survey. In order to select the individuals to be surveyed, there was a process of household selection via a random digit dialling method (landline sample) performed by TNS Infratest Sozialforschung according to the ADM standard, the improved version of the Gabler-Häder method (Gensicke et al., 2012).

In a second step, the target person to be interviewed was randomly selected using the Swedish selection grid. From the total of 122257 contacted addresses, 34.3% of the contact persons and 11.2% of the target persons refused to answer the interview. A weighting model was developed by TNS Infratest in order to compensate for the different selection probabilities of households and target persons caused by the sample design and the selective failures due to refusals (Gensicke et al. 2012, p.17). This model calculates weighting factors for adjusting the distribution of key features such as vocational position, West or East, federal state, education, gender or marital status in the sample to the distributions in the populations. The reference statistics was the 2011 microcensus household survey conducted by the Federal Statistical Office of Germany. The BIBB/BauA survey covers the content and implementation of occupations, the requirement levels of jobs and the qualification backgrounds of employed persons. Data is also collected on the mental and physical strains to which employees are subjected today in Germany (Gensicke et al., 2012).⁵

3.2 Model Sample

The eventual model sample used for the analysis contains a total of 10245 individuals and therefore covers about half of the total sample by the BIBB/BauA. The reduction is primarily due to missing values for the explanatory variables. Not all people from the whole sample have responded to all questions. In particular, answers relating to sensitive topics, such as income from work and state of health, have more missing values than others. People who work self-employed, on a freelance basis, as an independent contractor or as a family worker were excluded from the sample. This selection process was used because the goal of this study is to find out about factors that influence job satisfaction of workers whose aspects of their professional life depend on their

⁵ BiBB/FDZ Daten- und Methodenbericht, Nr. 1/2013 (English Version)

environment and third parties; especially their colleagues, supervisor and the employer. Individuals who can autonomously decide on their working practices and are not in a dependent employment relationship were therefore not included in the sample. Finally, only people who work at least 25 hours a week, i.e. about three or more working days a week, have been included in the sample. This is owing to the fact that adverse effects arising due to work, such as exhaustion, pressure or health issues, generally only occur if a critical amount of time is spent at the workplace.

3.3 Possible issues with the Data and the Model Sample

There are several missing values for many variables in the sample. Data on income is missing from a particularly high number of the individual responses: Almost 20% of the respondents in the BIBB/BauA Employment Survey 2012 gave no information about their monthly gross income. The absence of values for a sensitive variable such as income or health status is often not accidental. Missing values can lead to erroneous properties of estimators and test statistics, which eventually has consequences for the validity of making estimates for the whole population from the sample. (Gensicke et al. 2012).

Even though a weighting model was developed in order to compensate for the different selection probabilities of households and target persons caused by the sample design and the selective failures due to refusals, there might be a systematic distortion through a selection bias regarding job satisfaction and the willingness to offer about 40 minutes of your time in a phone interview with questions on your job. People who are less satisfied with their work might systematically be less willing to talk about their job than others, through the whole distribution of the population. However, this bias is difficult to detect since people who refuse an interview cannot, by definition, be categorised.

3.4 Methodology

Since most people in Germany are very satisfied or quite satisfied with their work, one needs to do a more in depth analysis in order to find out about the real determinants of job satisfaction. An empirical analysis of variability of job satisfaction will require the

construction of a multivariate model, which allows the inclusion of the effects of several factors simultaneously.

The dependent variable that is used in the analysis - job satisfaction - is a categorical variable. People were asked about several aspects regarding their satisfaction in relation with work and they subsequently answered the following question: „And finally: How satisfied are you with your work in total?“ Answers ranged from „not satisfied“, which is indicated by 0, to „very satisfied“ which is indicated by 3. The values of the variable do thus have indeed a meaningful sequential order. In order to work with the data, an Ordered Logit model is used of the form:

$$\text{Job satisfaction (i)} = \alpha_i + \beta'x$$

$$Y_i^* = \alpha_i + \beta'X_i + \varepsilon_i$$

Where Y_i^* is an index of job satisfaction (ranging from 0 – not satisfied – to 3 – very satisfied), α_i is an idiosyncratic fixed effect, X is a vector of explanatory variables, β is an unknown parameter vector and ε is an error term which is logistically distributed.

4. Empirical Results

4.1. Descriptive Statistics

Table 2 reports overall job satisfaction levels among those German employees of the selected model sample (n=10245). As stated before, only employees working with an employment contract have been considered for the analysis. As the table indicates, most workers report remarkably high levels of satisfaction with their job in total. One quarter of the sample is very satisfied and two thirds are satisfied while less than 10% are not satisfied or less satisfied with their job. A main goal of the subsequent Ordered Logit regression analysis is thus to find out more about the characteristics of people being less satisfied or not satisfied with their work and to detect differences from those who consider themselves to be satisfied or very satisfied at work.

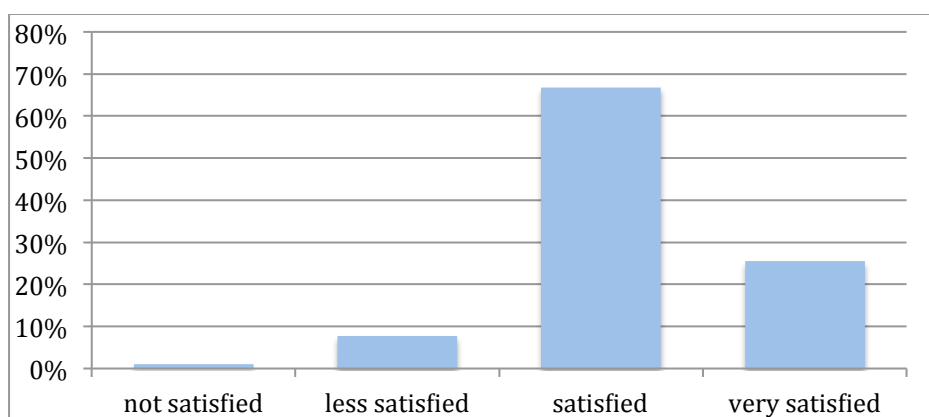


Table 2: Summary statistics of overall job satisfaction for the selected sample (BIBB/BauA Employment Survey 2012)

In addition to overall job satisfaction, table 3 reports various measures of job satisfaction with percentage and absolute values for each of the four satisfaction categories. The satisfaction levels are even higher when one looks at measures of satisfaction with type and content of work, where around 94% of the respondents indicate that they are either very satisfied or satisfied. These two results⁶ are an indicator that employees in Germany are generally satisfied with what they do in their working life, and that work itself is not considered to be an unpleasant activity. This is good news, since work is a major component of most adults' lives. However, once looking at other aspects of work, one can observe more variance and lower levels of satisfaction.

In many economic models, wages play a major role for work decisions and determine the welfare gained from work. So it might be surprising that the level of satisfaction with *income* is much lower than the overall job satisfaction: Almost a third of the respondents are less or not satisfied with the salary they earn from their main work activity, and only 13% are very satisfied with their pay. However, as we shall see in the next section when applying the multivariate model, there is also an impact of income on overall job

⁶ Overall Job Satisfaction and Satisfaction with type and content of work being very high

	Not Satisfied	Less Satisfied	Satisfied	Very Satisfied
<i>Overall job satisfaction</i>	1.08 % (n=121)	7.73 % (749)	66.78 % (7515)	25.49% (2868)
<i>Satisfaction with type and content of work</i>	0.94 % (106)	5.55 % (624)	64.59 (7268)	28.93 (3255)
<i>Satisfaction with income of main activity</i>	7.70 % (866)	20.60 % (2317)	58.31 % (6560)	13.40 % (1507)
<i>Satisfaction with direct Supervisor</i>	4.93 % (552)	12.14 % (1360)	52.75 % (5907)	30.18 % (3380)
<i>Satisfaction with working atmosphere</i>	3.93 % (443)	11.44 % (1287)	53.14 % (5978)	31.48 % (3541)
<i>Satisfaction with present working hours</i>	5.24 % (589)	14.86 % (1671)	62.61% (7040)	17.29% (1944)
<i>Satisfaction with work equipment⁷</i>	4.06 % (455)	17.40 % (1949)	60.96 % (6828)	17.58 % (1969)
<i>Satisfaction with physical working conditions</i>	3.84 % (432)	13 % (1458)	64.22 % (7202)	18.93 % (2123)

Table 3: Various measures of job satisfaction related to work in percent and the corresponding absolute frequencies (BIBB/BauA Employment Survey 2012)

satisfaction. Satisfaction levels with the direct supervisor and the working atmosphere⁸ at the enterprise are very similarly distributed. While almost a third are very satisfied with the work environment, around 15% report sources of dissatisfaction due to bad relations with their supervisor or their colleagues. Further, around 20% of the

⁷ Work equipment including furniture and software

⁸ Both of them are work environment variables

employees are less or not satisfied with their working hours, and more than 20% of workers report dissatisfaction with the equipment at work, such as the software and furniture provided. Around 17% report low satisfaction levels with physical working conditions.

These results might indicate that, while most people are satisfied with their work activity in general, sources of dissatisfaction lie in the work environment, such as the employer, the enterprise, colleagues, work conditions or facilities. Some of these negative determinants, which affect the well-being of employees, are difficult to expose in detail. However, the multivariate model in the following section offers some more insight into the pain points that cause dissatisfaction at work.

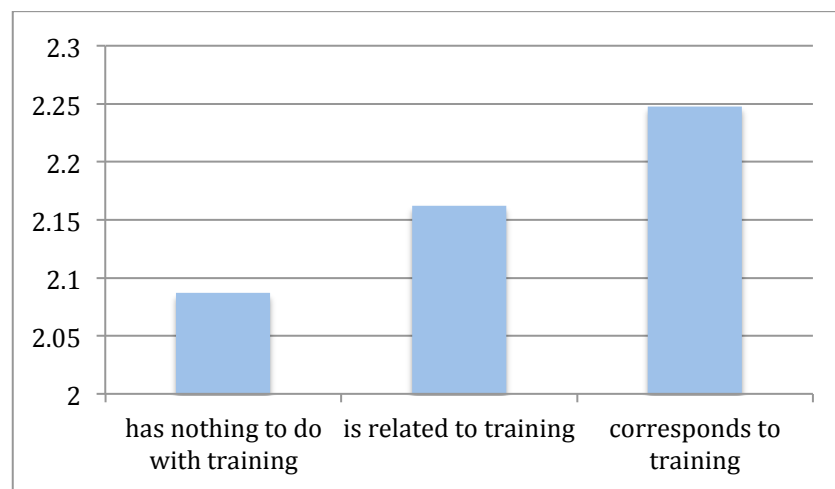


Table 4: Mean values with overall job satisfaction (y-axis) and the degree to which the job is related to the training attained (x-axis), (BIBB/BauA Employment Survey 2012)

Table 4 delivers mean values of overall job satisfaction in relation to the degree to which the respondents' current work is related to the *job training* previously obtained. People who work in a job that is related or corresponds to their training report higher levels of overall satisfaction on average. This might be an indicator of the expectations people tend to form after having obtained certain job training. Mean values of job satisfaction, dependent on the number of years respondents have worked prior to 2012 - the variable *years worked* - are shown in table 5. The values fluctuate only slightly, but two trends can be identified: people who have recently started with their working life report

higher levels of overall satisfaction than those who have been working for more than one year. There is a drop in mean satisfaction from 2.53 to 2.24 after the first year. Additionally, there is a slight tendency towards a U-shaped curve in satisfaction. After a high level in the beginning, satisfaction drops to a minimum level of 2.13 for respondents who have worked for 22 years. However, one can observe an increase in satisfaction for employees who have been working for more than 36 years. This result is comparable to the U-shaped findings regarding job satisfaction and age of Clark (1996), since the number of years worked strongly correlates with the age of a person.

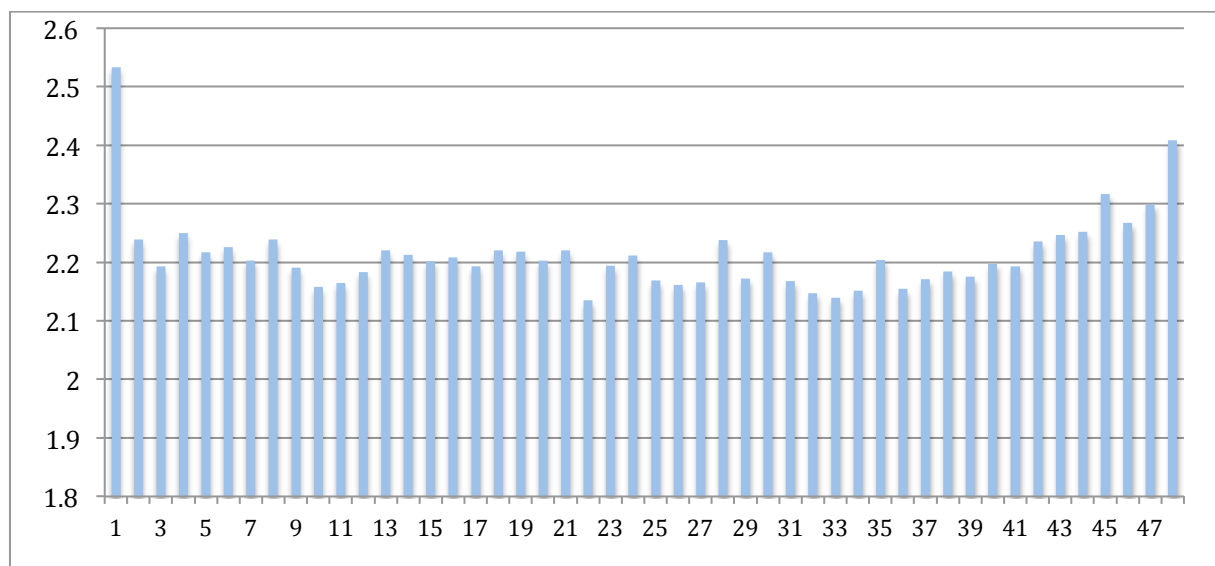


Table 5: Mean values of job satisfaction (y-axis) and the number of years worked (x-axis), (BIBB/BauA Employment Survey 2012)

Table 6 shows mean values of overall job satisfaction over different *establishment sizes* with the figures on the x-axis corresponding to the number of people employed at the establishment⁹. One can see a downward trend of mean job satisfaction levels for this bivariate model. Roughly one can say that the bigger the establishment, the lower the mean values of satisfaction, with the clear exception of very large firms of 1000 or more employees.

⁹ Note, that self-employed people ($x=1$) are excluded from the sample as explained previously. In the case of $x=1$, the establishment consists of two people: an employer and an employee.

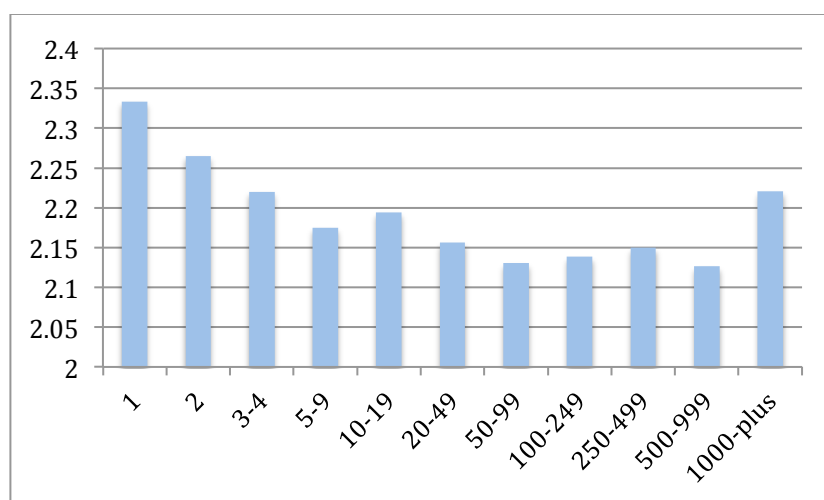


Table 6: Mean values of overall job satisfaction (y-axis) different establishment sizes (x-axis), (BIBB/BauA Employment Survey 2012)

As one might expect intuitively, there is a positive relationship between *help from a direct supervisor* and mean job satisfaction, as displayed in table 7. People who often receive help from their direct supervisor report much higher levels of overall job satisfaction than those who never or rarely get support.

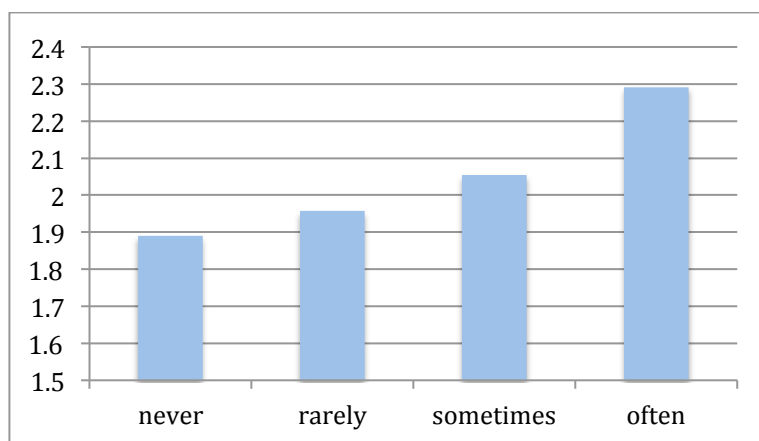


Table 7: Mean values with overall job satisfaction (y-axis) and assistance received from the supervisor (x-axis), (BIBB/BauA Employment Survey 2012)

The individually reported *health state* is also related to job satisfaction. As table 8 suggests, mean job satisfaction increases with a higher positive health state. The mean satisfaction level between people reporting their health state to be bad and respondents with an excellent health state from about 1.5 to 2.5. The causality relation between the variables health and job satisfaction remains yet unclear. As discussed in the literature review, there is evidence for healthier workers being more satisfied in the workplace, but also for positive effects of happiness at work on individual health conditions.

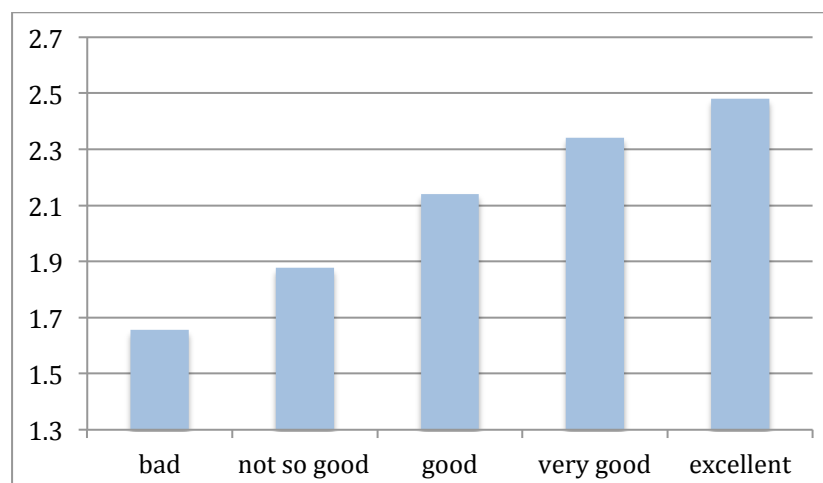


Table 8: Mean values of overall job satisfaction (y-axis) and health condition (x-axis), (BIBB/BauA Employment Survey 2012)

Finally, table 9 displays some satisfaction levels over various dummy variables. One can see a remarkable difference in satisfaction among people doing *daytime* work and those working at night, among those who can take regular breaks and those who work for more than 6 hours without a break. Enterprises that have offered *workplace health promotion measures* within the last two years have happier employees than those that have not. People in a *supervisory position* report higher mean values of satisfaction as well as those who are *married* or speak *German* as their mother tongue. Finally, people who have worked with a *new supervisor* within the last two years report lower levels of satisfaction than those who have worked with their supervisor for more than two years.

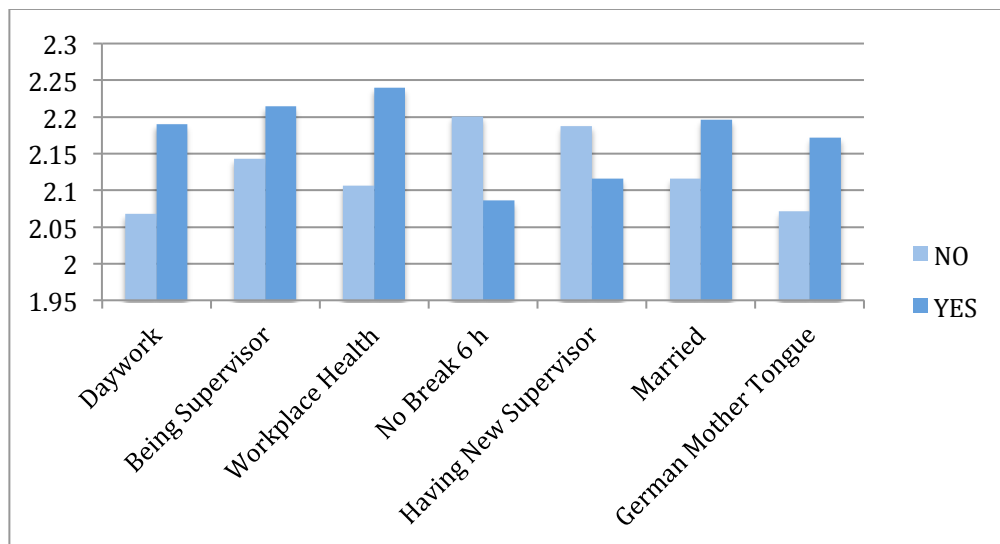


Table 9: Mean values of overall job satisfaction (y-axis) and their relation to various dummy variables (x-axis), (*BIBB/BauA Employment Survey 2012*)

4.2 Regression Results of Overall Job Satisfaction

Table 10 delivers the results of the Ordered Logit Regression on overall job satisfaction with several explanatory variables. A description of all the explanatory variables can be found in the appendix. A variable selection process was carried out in which several additional explanatory variables were included into the previous model. Statistically insignificant variables were then dropped in multiple stages. Only variables with explanatory power were kept in the regression model. Apart from the Ordered Logit regression, there was also a regression run with an Ordered Probit process. However, the findings did not differ by much, so only results of the Ordered Logit estimation are listed below and used for the analysis.

4.2.1 General variables

The variable *female* is significant and positive, indicating that female workers are generally more satisfied at work than men. This is consistent with the previously discussed literature. Whether the *paradox* of the more content female worker would disappear if one could control for flexibility in the job selection process remains unclear. The lower satisfaction level for males might also stem from the expectation difference effect that was discussed in the literature part. According to this theory, men have

<i>Variable Name</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>Z-Value</i>
General Variables			
<i>Female</i>	0.2522***	0.0425	5.44
<i>West</i>	0.2433***	0.0534	4.51
<i>Log wage</i>	0.3255***	0.0486	6.76
Job Development Variables			
<i>Years working</i>	0.0116***	0.0017	5.71
<i>Dummy unemployed</i>	-0.1394***	0.0477	-2.92
<i>Training related</i>	0.1577***	0.0293	-5.30
<i>Dummy university degree</i>	-0.1737 ***	0.0072	-2.39
Work Environment Variables			
<i>Dummy daytime</i>	0.1576***	0.0596	2.66
<i>Dummy being immediate superior</i>	0.2427***	0.0476	5.09
<i>Establishment size</i>	-0.0933**	0.0372	-2.50
<i>Dummy redundancies</i>	-0.4325***	0.0484	-8.92
<i>Community</i>	0.374***	0.0326	11.48
Employer Related Variables			
<i>Dummy new supervisor</i>	-0.1282**	0.0498	-2.57
<i>Help from direct supervisor</i>	0.3511***	0.0274	12.99
<i>Acute pressure</i>	-0.1691***	0.0317	-5.33
<i>Dummy workplace health promotion</i>	0.3039***	0.048	6.27

<i>Dummy no break 6h</i>	-0.1295**	0.0506	-2.56
<i>Family and private interest</i>	0.4574***	0.0393	11.63
Further Control Variables			
<i>Health</i>	0.6342***	0.0287	22.07
<i>Dummy being married</i>	0.1778***	0.0406	3.86
<i>Dummy German mother tongue</i>	0.2731***	0.0104	2.63

N= 9974 Pseudo R² = 0.125 Log-Likelihood at zero: -8448.4004

Notes: Corresponding z-values in parenthesis, ***, **, * indicate the significance at the $\alpha=1\%$, $\alpha=5\%$ and $\alpha=10\%$ level

Table 10: Results of the Ordered Logit Regression of overall job satisfaction on several explanatory variables, (BIBB/BauA Employment Survey 2012)

higher goals in their working career and struggle more to be satisfied with what they have achieved.

Employees working in former GDR-states, in the *new East states* of East-Berlin, Mecklenburg-Vorpommern, Brandenburg, Saxony-Anhalt, Saxony and Thuringia, report lower overall satisfaction with their job than people working in West-German states. The variable *West* is thus positive and significant. This is in contrast to Fietze (2011), who did not find a significant difference between East- and West-German employees regarding their level of satisfaction with employment, and Wagner et al. (2007) who only found divergent satisfaction levels between the years 1990 and 2008.

The variable *Log Wage* displays the expected direction and significance levels and has a positive ceteris paribus impact on the overall satisfaction of employees. A higher income from work is thus associated with higher job satisfaction levels, which is in accordance with the previously discussed findings of Clark (1996) and Sloane and Williams (2000). Numerous economic theories derive fundamental implications from the fact that wages significantly influence labour market decisions. In Labour Economics, if wages increase,

the individual constraint line pivots and one can purchase more goods and services. This leads to an increase in utility. The income- and substitution effect might also have effects on the work-leisure decision of an individual (See eg. Varian, 2006, p.136 ff).

4.2.2 Job Development Variables

The variable *years working* in table 10 is significant and positive, meaning that employees get more satisfied, the more years they have been working. This result is comparable to the findings of Clark and Oswald (1996) who integrated data on age of workers, which seems similar to the number of years people have worked.¹⁰ There are numerous ways to interpret this result. Clark and Oswald (1996) assume a participation effect that drives older or, in this case, more experienced workers to be more content with their job situation. Dissatisfied older employees find it easier to leave the labour market. However, this effect only applies for those over the age of fifty or sixty, or, in this case, for those who have worked for more than around 30 years. Another conclusion that is drawn by Clark and Oswald (1996) is regarding perceptions of the job in relation to job expectations. This does not imply individual or job characteristics, but changing expectations over time. Young workers may feel more content because of the novelty of their situation and because they have little information about the work environment with which to evaluate their job. As they become more experienced, they become able to make comparisons, and it may be that this explains the drop in satisfaction in the middle of their working life. The subsequent rise in satisfaction towards the end of their working life might stem from older workers' reduced aspirations, as they realise that they have fewer alternative jobs open to them, or even from the reduced importance that older workers might attach to their ambitions in the workplace (Gazioglu and Tansel, 2006, 1165 ff.).

People who have been *unemployed* in the past are less satisfied with their job. However, working people who have never been unemployed might be a bad control group in this case. For instance, Caspi, Wright, Moffitt and Silva (1998) showed that negative experiences in early childhood are related to a higher probability of being unemployed

¹⁰ The variable *number of years worked* seems even more precise to measure negative or positive effects from work itself, since there is some variation regarding the age at which people enter the labour market

as an adult. Few data sets allow to control for such background factors. Panel data would be a better solution to investigate such causalities (Young, 2012, p. 615). Thus, the reason of lower satisfaction levels of workers who have been unemployed in the past might be due to several reasons such as less satisfaction in general, personal ambitions or a different work ethic.

People who work in a job that is *related to their training* are more satisfied than those working in a field which is less related or not related at all with their education or training. The variable is highly significant. This phenomenon might also be partly explained by expectations employees have after having obtained their training. This is in accordance with the results of Green and Tsitsianis (2005), who analysed data from Britain and Germany. If expectation of job matches are not met, employees might be less happy with what they have achieved, especially after they have invested a crucial amount of time and money for their training. *University graduates* are, *ceteris paribus*, less satisfied than those without a university degree. This is in accordance with the literature discussed above (Clark, 1996; Blanchflower and Oswald, 1999 and Gazioglu and Tansel, 2006). Higher or systematically different expectations belonging to university graduates seem to be the reason for the negative effect.

4.2.3 Work Environment Variables

People working during the *daytime* are significantly more content with their work than those working outside the hours of 7am to 7pm. This might be due to worse work conditions of evening- and night shift jobs, as well as increased physical pressure of these jobs. The variable *acute pressure* partly controls for this effect, but probably does not account for all adverse effects. Additionally, there might be a selection bias with those jobs which require people to work during the night being less popular in general. To my knowledge, there has not been a job satisfaction study taking day and night shifts into account.

People with more power are more satisfied. The dummy variable for *being a direct superior* of at least one colleague is significant and positive. This notion seems to be intuitively logical: people with more power might have more freedom with their decisions and have a higher status and recognition within and outside the workplace. According to Anderson et al. (2012), the pursuit of social status is a fundamental human

motivation and the sociometric status¹¹ - including recognition by coworkers – has a stronger effect on subjective well-being than does socioeconomic status.

People who work in *large establishments* are *ceteris paribus* less satisfied than those who work for small or medium - sized establishments. This relationship is in accordance with Garcia-Serrano (2011), who found less content workers at large establishments owing to worse working conditions. The effect in this model is also significant when controlling for some working conditions, such as break policies, acute pressure or help from direct supervisors. Thus, in contrast to Garcia-Serrano, it might not be a lower level of satisfaction due to worse working conditions only, but also due to inherently positive aspects of small establishments which are not captured by the variables of the regression model.

The satisfaction of workers is also related to their perception of job security. Employees working for establishments which had carried out *redundancies* within the last two years report significantly lower levels of job satisfaction than those who work in establishments where no redundancies have taken place. This effect might stem from the fact that employees working for establishments with more fluctuations feel less secure and fear for their job. The result is in accordance with the findings of Green and Tsitsianis (2005) for British and German workers and of Blanchflower and Oswald (1999) and Gazioglu and Tansel (2006). In addition to decreasing satisfaction levels due to a change in perceived job security, the work conditions and atmosphere in establishments which had carried out redundancies within the last two years might have been worse in general, assuming that they were more likely to face a difficult (financial) reality than others. Finally, the variable *community* is positive and significant. People who work in a work environment where they feel more part of a community report *ceteris paribus* higher levels of overall satisfaction than those who have not reported a positive community atmosphere. As Parker and Wall (1998) described it, effective teamwork can enhance the motivational properties of work and increase job satisfaction. This outcome might also be an argument for employers to foster teambuilding within the enterprise.

¹¹ Referring to the respect and admiration one has in face-to-face groups (e.g. peers or coworkers)

4.2.4 Employer Related Variables

Of particular interest and importance in this thesis are the results of employer-related variables, so-called because they are assumed to be less exogenously determined than other variables and related to employers, or dependent on decisions that employers can (partly) influence. Most of these employer related variables have not been included in other research papers, since data generated by other surveys have not specifically offered details for issues such as relations and conditions within the enterprise. It is obviously difficult to make a precise distinction between the categories. However, whether the establishment carries out workplace health promotion measures, how they manage their break policies or whether a direct supervisor offers help, seem more likely to be adaptable by internal processes of the establishment itself than are components such as the establishment size, the employee's wages¹², time of work shifts and redundancy policies¹³. It is thus a goal to find out in what way employers can increase, or positively influence the satisfaction levels of their workers through these variables - in the interest of the employees as well as in their own interest.¹⁴

The variable for having a *new direct supervisor* within the last two years is significantly negative. Long lasting relationships between supervisors and employees seem to have a positive effect on satisfaction with work. However, the effects are not entirely clear. Whether new supervisors perform worse regarding their skills, motivation to assist or interpersonal relationship abilities remains unclear. It might take some time until a mutual level of trust and well-being is established, and longer lasting supervisor relationships therefore perform better.

It seems little surprising that people working in jobs where they frequently feel acute pressure to meet deadlines or to perform are less content with their work than those who do not. The variable *acute pressure* is ceteris paribus significant and negative. Half of the respondents (53%) often feel a high level of pressure at work, which intuitively seems quite high. There are obviously job fields in which there is, by definition of the

¹² The wage level is often defined by the market price according to economic theories

¹³ Assuming again, that redundancies are driven by market forces

¹⁴ It is assumed that state A „working with a high level of satisfaction“ strictly dominates state B „working with a low level of satisfaction“ for all employees. Further it is assumed that state A is pareto superior to state B also for employers, meaning that a person performs at least as good if they are satisfied at work than if the same person would be dissatisfied at work

activity, a higher level of pressure than in others, for example surgeons, police officers or labourers, who are required to meet e.g. ultimate deadlines more frequently or have other sources of acute pressure. It seems therefore unlikely that employers can reduce the level of pressure among all sectors equally.

Employees who more often receive *help and support from their direct supervisor* report higher levels of satisfaction than those who are less frequently helped. The variable is positive and highly significant. Support and help might also increase the motivation and productivity of employees, although only if it does not reduce teamwork opportunities, as Griffin et al. (2001) stated for data on companies in the UK. Respondents who work for establishments which have carried out *workplace health promotion* measures within the last two years report higher job satisfaction levels than those who do not. The causal relationship is difficult to determine in this case. The higher satisfaction level might stem from the direct positive effect of such health promotion measures or might be due to a selection process according to which establishments, who carry out such measures, might care more about their employees and the working atmosphere within the enterprise in general.

The effect of an establishment's *break policy* implement is also significant. People who work in jobs in which they are frequently unable to take a break of at least 15 minutes over a period of six hours feel significantly less content than those who may take frequent breaks. Again, whether the employer can influence this might depend heavily on the job itself. Finally, there is a positive effect of the variable *family and private interest* on the reported level of job satisfaction. Employees are significantly more content with their job if they work for establishments that allow them to take into account their private interests, and the interests of their family, when planning their working hours.

4.2.5 Further Control Variables

In order to control for some exogenous influences that are not directly or only partly related to work, some additional significant variables were included in the model. People with a higher level of a self-reported *health* condition are more satisfied with their work than those who suffer from poor health conditions. This effect might be driven from several directions. People with bad health conditions are also less happy in

their life or might have a poor job match, meaning that they are not able to work in their preferred job. The result is consistent with the findings discussed above (Faragher et al. (2005); Clark (1996); Stansfeld et al. (1997, 1998); Fischer and Sousa-Poza (2009)). Finally, people who are *married*, or live in household with a partner, are more satisfied with their work, and those who speak German as their mother tongue also report higher levels of job satisfaction.

4.2.6 Test for multicollinearity

In order to test for multicollinearity, a correlation-matrix was created and can be found in the appendix. Looking at the corresponding values in the matrix, there are only few values above 0.25. The firm size and wage level seem to slightly correlate. Further there is some correlation between gender and wage, health promotion and firm size, health promotion and break policy and acute pressure and wage. None of the correlations is higher than 0.35 though, it is therefore unlikely that individual predictors are affected through multicollinearity.

4.3 Regression Results of Specific Job Satisfaction

As well as making statements about the overall satisfaction with their job, the respondents were also asked about specific aspects of their working life. These include satisfaction with the *income* they earn from their main job activity, satisfaction with their *direct supervisor*, satisfaction with the *working atmosphere* and satisfaction with their *present working hours*. In order to have more specific insights about the well-being of employees at work, an additional regression model was set up. The sample is the same as that used for the regression of overall job satisfaction (n=between 9926 and 9969 since some respondents did not answer all four questions), as are the explanatory variables. Only the dependent variables were changed. Again, an Ordered Logit regression model was used for estimating the coefficients.

4.3.1 General Variables

Table 11 provides the Ordered Logit regression results for specific aspects of job satisfaction. The variable *female* suggests that women's higher overall level of job satisfaction might be due to their higher satisfaction with income. The other measures of

satisfaction - satisfaction with one's supervisor, with working atmosphere and with working hours – are all insignificant. The variable might thus indeed be related to differences in expectations among male and female workers. Women might not choose more attractive jobs, but rather might be more easily satisfied with their income than are men, which influences their overall satisfaction with work. However, this is only a hypothesis that has to be verified by future research in that field.

The variable *west* is significantly positive for all four aspects of job satisfaction. People working in East-German states are thus less satisfied with their working life, even though the model controls for wage differentials and working conditions. The effect of the income, the *log wage variable*, is ambiguous. The variable is significant for all four categories of job satisfaction measures. While a higher income is positively correlated with higher satisfaction with one's supervisor, it is negatively correlated with satisfaction with working hours and atmosphere. The overall income-effect on job satisfaction is positive, but higher earnings might be at the cost of worse working hours, or a deterioration of the working atmosphere.

4.3.2 Job development variables

The more years people have worked - indicated by the variable *years working* - the more satisfied they are with the present working hours. People seem to get more used to working several hours a day the more experienced they get. However, the more years people have been working, the less satisfied they are with the working atmosphere. Whether this is due to a changing corporate culture, triggered by e.g. younger employees and executives needs to be further investigated. Finally the variable *years working* is insignificant regarding satisfaction with income and satisfaction with the supervisor.

People who have been *unemployed* in the past are less satisfied with their income than those who have not been unemployed. The other measures are all insignificant. Unemployed people might struggle more to find the job that fits their wage expectations, however, there is more research necessary in this field. The impact of whether someone works in a job that is *related to the training* they obtained is ambiguous when looking at specific measures of satisfaction. As discussed in the previous section, there is a significant positive effect of this variable on overall job satisfaction. However, people

Variable Name	Satisfaction with income	Satisfaction with supervisor	Satisfaction with working atmosphere	Satisfaction with present working hours
General Variables				
<i>Female</i>	0.2086 *** (4.96)	-0.0450 (-1.03)	-0.3643 (-0.84)	0.0642 (1.41)
<i>West</i>	0.0985 ** (1.98)	0.1098 ** (2.22)	0.2176 *** (4.40)	0.1827 *** (3.53)
<i>Log wage</i>	1.5794 *** (30.31)	0.0976 ** (-2.03)	-0.1643 *** (-3.44)	-0.1599 *** (-3.21)
Job development variables				
<i>Years working</i>	-0.0018 (-0.97)	0.0030 * (-1.61)	-0.0066 *** (-3.56)	0.0059 ** (3.05)
<i>Dummy Unemployed</i>	-0.2690 ** (-5.99)	-0.0454 (-1.02)	0.0071 (0.16)	-0.0445 (-0.96)
<i>Training Related</i>	0.0516 * (1.90)	-0.0215 (-0.80)	-0.0483 * (-1.80)	-0.0525 * (-1.88)
<i>Dummy University Degree</i>	-0.0354 (-0.52)	0.0084 (0.13)	0.1218 * (1.85)	-0.2389 *** (-3.51)
Work environment variables				
<i>Dummy daytime</i>	-0.0462 (-0.86)	0.1023 * (1.94)	0.1659 *** (3.14)	0.4689 *** (8.52)
<i>Dummy being direct superior</i>	-0.080 * (-1.84)	0.0776 * (1.80)	0.1209 ** (2.80)	-0.07252 * (-1.61)
<i>Establishment Size</i>	0.0004 (0.01)	-0.1189 *** (-3.54)	-0.3070 *** (-9.09)	-0.0153 (-0.44)
<i>Community</i>	0.0891 *** (3.09)	0.2752 *** (9.26)	0.6635 *** (20.33)	0.1241 *** (4.23)
<i>Dummy Redundancies</i>	-0.3058 *** (-7.03)	-0.2614 *** (-6.08)	-0.4454 *** (-10.31)	-0.4773 (-1.07)

Employer related variables				
<i>Dummy New Supervisor</i>	0.0478 (1.05)	-0.2364*** (-5.27)	-0.0997** (-2.23)	-0.0512 (-1.10)
<i>Acute Pressure</i>	-0.2093*** (-7.14)	-0.1468*** (-5.11)	-0.1463*** (-5.09)	-0.2933*** (-9.67)
<i>Help from Direct Supervisor</i>	0.1575*** (6.63)	1.005*** (38.00)	0.4163*** (17.33)	0.1095*** (4.49)
<i>Dummy Workplace Health Promotion</i>	0.3300*** (7.37)	0.2122*** (4.87)	0.2323*** (5.33)	0.3234*** (7.08)
<i>Dummy no Break 6h</i>	-0.2283*** (-4.96)	-0.1054** (-2.35)	-0.1563*** (-3.44)	-0.535*** (-11.22)
<i>Family and Private Interest</i>	0.2706*** (7.75)	0.170*** (4.95)	0.1961*** (5.67)	0.9758*** (25.78)
Further control variables				
<i>Health</i>	0.252*** (9.69)	0.247*** (9.66)	0.3206*** (12.53)	0.2834*** (10.64)
<i>Married</i>	0.1027** (2.44)	0.056 (1.36)	0.0489 (1.20)	0.0144 (0.33)
<i>German Mother Tongue</i>	0.232** (2.47)	0.1449 (1.47)	-0.0252 (-0.27)	0.4403 (0.46)
<hr/>				
<i>n</i>	9966	9926	9969	9966
<i>R²</i>	0.1085	0.1267	0.0975	0.0994
<i>Log Likelihood at zero</i>	-11008.156	-10968.559	-10753.862	-10235.834

Notes: Corresponding z-values in parenthesis, ***, **, * indicate significance at 1%, 5% and 10% level

Table 11: Ordered Logit regressions of various measures of job satisfaction with reported coefficients and z-values, (BIBB/BauA Employment Survey 2012)

who work in a field that corresponds to their training are more satisfied with their income but less satisfied with their working atmosphere and their present working hours.¹⁶

The effect of having a *university degree* on the level of job satisfaction is also twofold. While the level of satisfaction with one's income and supervisor is insignificant, it is positively correlated with the perceived working atmosphere. However, the overall effect of the dummy variable university degree is negative, which is most likely due to the highly significant reduced level of satisfaction with working hours. People who have completed higher education might thus be more likely to work in job fields where they do not like the amount or time period of their working hours. However, the effect of higher expectations due to higher education is not measured in the model, but it could play an important role.

4.3.3 Work Environment

The *daytime job* dummy variable is insignificant for satisfaction measures regarding income. However, satisfaction with one's direct supervisor, working atmosphere and working hours are positively correlated with the respondent's status of working during daytime. Having more to say within an enterprise is associated with ambiguous results. While the dummy variable for *being a direct superior* has an overall positive effect on total satisfaction, as discussed in the previous section, it is negatively related to satisfaction with income and working hours. Having more power might raise expectations about the desired wage level and might increase the workload. On the other hand, being a direct superior has significantly positive effects on both the satisfaction with working atmosphere and the satisfaction with their own superior.

The variable for the *establishment size* is statistically only significant in two measurement categories: the larger the establishment, the more it is associated with employees being less satisfied with their direct supervisor and with a lower level of satisfaction with the working atmosphere. This is in accordance with findings from Garcia-Serrano (2011), who states that this is most likely due to worse working conditions of larger establishments. In my model, the negative correlation is still strong

¹⁶ The effect are only significant at the $\alpha=10\%$ level though

and highly significant, even though for some work conditions, such as whether there is acute pressure or help from a direct supervisor, is controlled for.

The variable *community* is positive and highly significant for all four measures of satisfaction. The state of an employee feeling like part of a community at work thus correlates with higher levels of satisfaction with income, supervisor, working atmosphere and working hours, which seems intuitively clear. There might however be reverse causality in this case: the more satisfied one is with their supervisor or their workplace atmosphere, the more they feel part of a community at work. Finally, the dummy variable for redundancies is highly significant for satisfaction levels with income, supervisor and working atmosphere, being negatively correlated with all of these measures. It is only insignificant for satisfaction with working hours. Redundancies can thus cause disturbances and a feeling of insecurity for employees, affecting their satisfaction, confidence and sometimes also the productivity.

4.3.4 Employer Related Variables

As discussed previously, there is a negative correlation between having a new direct supervisor within the last two years and the level of overall job satisfaction. When looking at various measures of satisfaction, only satisfaction with the working atmosphere and satisfaction with the direct supervisor are significantly negatively associated with this variable.

The more an employee feels a high level of acute pressure to meet deadlines or to perform at work, the lower their satisfaction. This variable is highly significant and negative in all four categories. This in accordance with the literature discussed, but as discussed above, a high level of acute pressure might in some cases be due to exogenous factors that cannot be directly influenced by employers themselves. The variable *help from the direct supervisor* is also highly significant and positive for all four measures of satisfaction, and is somehow diametrically opposed to the former variable acute pressure. The more that employees receive help and support from their direct supervisor, the more likely they are to be satisfied with all specific aspects of their work. There could, however, be an issue of reverse causality again: Workers who are more satisfied with their job might more frequently ask for help and support from their direct supervisor, thus lowering negative aspects of their working life.

Establishments that have offered *workplace health promotion* measures within the last two years are associated with significantly more satisfied workers for all four measures. Whether this is due to a causal impact of the workplace health promotion measures themselves, or whether these enterprises are of a different type, and e.g. care more about their workers in general, remains unclear from this regression analysis. Time management policies and the offer of sufficient breaks during work shifts seem to be important as well. Employees report significantly lower levels of satisfaction among all four categories if they are not able to take a break for over six hours of work.

Finally, employees seem to care about work flexibility. Respondents, who indicate that they frequently succeed in taking their *private interest and the interest of their family* into account when planning their working hours report significantly higher levels of satisfaction among all four categories. Whether employers can offer more cooperation regarding this issue is most likely also dependent on the job field and nature of work.

4.3.5 Further Control Variables

As in the previous section with overall job satisfaction, some additional variables not directly related to work have been included in order to control for exogenous influences on satisfaction. The variable *health* is highly significant and positive for all four measures of satisfaction. This might be a case of reversed causality again: people with better health conditions might be able to find better job matches and might thus be more satisfied with what they do. On the other hand, some people might suffer from work conditions, which has a negative impact on their health state and thus leads to lower satisfaction levels. Finally, respondents who are married or live in a household with a partner are *ceteris paribus* only significantly more satisfied with their income. The other measures of satisfaction remain insignificant. The same holds for people speaking German as their mother tongue, who have only higher satisfaction levels regarding their income.

5. Final Discussion and Conclusion

Job satisfaction is a major determinant of overall happiness in a working society, and work itself is an essential part of a person's identity (Judge and Klinger (2007, p. 393). Further, there seems to be evidence (Sousa-Poza and Sousa-Poza 2000b) that satisfied workers perform better and higher levels of job satisfaction are positively correlated with the performance of a firm (Ostroff, 1992).

In this paper, a theoretical background and a literature overview on various aspects of job satisfaction were discussed. Further, results from an own analysis on job satisfaction in Germany were analysed and evaluated. The data used for the analysis were from the Employment survey 2012 by the Federal Institute for Vocational Education and Training (BIBB) and the Federal Institute for Occupational Safety and Health (BauA) in Germany, where attitudes, behaviour and experience of a subsample of 10245 respondents were examined in order to find out about the determinants of job satisfaction of German employees. As well as overall satisfaction measures, specific aspects of job satisfaction were also evaluated using an Ordered Logit regression model. With a procedure of a iterative backward elimination of explanatory variables; job development, as well as work environment, employer related, general and further control variables were used to estimate the model.

First, it is worth noting that most German employees are in general content with their work and what they do at work. When looking at descriptive statistics, no more than 10% are less or not satisfied with their job, while two thirds are satisfied and one fourth claim to be very satisfied. However, the goal of the thesis was to find out about possible sources of dissatisfaction, in overall but also in specific measures of satisfaction, especially the satisfaction with the present working hours and the satisfaction with the income where levels of dissatisfaction were remarkably higher.

The results are in many ways consistent with the existing literature on job satisfaction. As with most studies in the field, women are more satisfied than men, which is a first indicator that expectations seem to play an important role. In contrast to the studies of Fietze (2011) or Wagner et al. (2007), who found no longer differences in satisfaction levels between East- and West Germany in recent years, people in West Germany reported to be *ceteris paribus* more satisfied than East German workers. Expectations also seem to play a role with regard to job development variables. The more the current

job of the respondent is related to the training obtained, the higher the level of satisfaction. People with a university degree are *ceteris paribus* less satisfied with what they do, probably owing to a discrepancy between what they desire and what they achieve. Additionally, there is a positive relationship between the number of years people have been working and their satisfaction levels. Also, people who have experienced unemployment during their working life are less satisfied with their job.

With regard to the work environment, people who work during the daytime, and those who are an immediate superior of at least one of their colleagues, are significantly more content in their job. In accordance with many other studies, satisfaction levels decrease with respect to the size of an establishment, even when work conditions are partly controlled for. In addition, respondents who work for establishments that have carried out redundancies within the last two years are less satisfied. Those employees who feel like part of a community at work report significantly higher satisfaction levels.

A further goal of the thesis was to find out about determinants of satisfaction that can fully or partly be influenced by decisions of employers themselves. The economic literature has not tackled this issue in a broad context so far. Even though the extent to which employers can affect these *Employer Related Variables* vary a lot between sectors, job-activities and enterprises, it can be considered a recommendation for further discussion.

Employees report significantly lower contentment with their job if they work with a new direct supervisor. Further, help and support from a direct supervisor positively correlates with overall job satisfaction levels. People working for an establishment where they feel an acute pressure to perform and employees working regularly for more than six hours without a break are substantially less satisfied at work. On the other hand, people working for establishments that have offered workplace health promotion measures within the last two years, and employees regularly able to take family and private interests into account, feel more satisfied at work. Again, these results give some interesting insights into possible sources of dissatisfaction that might be tackled by employers more actively in the future.

The Ordinal Logit regression on specific measures of satisfaction shows some interesting results. There are some variables that have asymmetrical tendencies across the different measures of satisfaction. The log wage variable for instance, shows significant correlation with all four job satisfaction measures, but this correlation is only positive for satisfaction with the supervisor and satisfaction with the income. Since the overall income-effect on job satisfaction is positive, higher earnings might be at the cost of worse working hour conditions or a deterioration of the working atmosphere. Also, while the level of satisfaction with one's income and supervisor is insignificant for those with a university degree, it is positively correlated with the working atmosphere. However, the overall effect of the dummy variable university degree is negative, which is probably due to the highly significant reduced level of satisfaction with the working hours.

As a final conclusion it can be said that even though employees in Germany are generally satisfied with their jobs, there are still sources of dissatisfaction in general as well as specific aspects of work. Expectations play an important role and seem to have a negative impact on job satisfaction when they are not met. The role of the employer needs to be further investigated, but the decisions employers make, might play a crucial role for the well-being of employees in Germany and other countries.

6. Appendix

6.1 List of Variables

Variable Name	Description	Min	Max	Mean
General variables				
<i>DV: Overall job satisfaction</i>	= 0 if respondent is not satisfied in total = 1 if respondent is less satisfied in total = 2 if respondent is satisfied in total = 3 if respondent is very satisfied in total	0	3	2.159
<i>Female</i>	= 0 if male =1 if female	0	1	0.51
<i>West</i>	= 0 if respondent works in a former GDR German Federal state (East) =1 if respondent works in the West	0	1	0.79
<i>Wage</i>	Gross Earnings from main job activity per month in Euro	25	69000	2600 (Median)
Job development variables				
<i>Years working</i>	Number of years respondent has worked until the year 2012	0	61	25.29
<i>Dummy unemployed</i>	= 0 if respondent has never been unemployed =1 if the respondent has been unemployed for at least once in the past	0	1	0.32
<i>Training related</i>	= 0 if current job has nothing to do with training obtained = 1 if current job is related to training obtained = 2 the work corresponds to the activity the course of training usually prepares for	0	2	0.97
<i>Dummy university degree</i>	= 0 if respondent does not hold a university degree = 1 if respondent holds a university degree	0	1	0.12
Work environment variables				
<i>Dummy daywork</i>	= 0 if working hours are outside of 7-19h =1 if working hours are within 7-19 h	0	1	0.81
<i>Dummy being immediate superior</i>	= 0 if respondent is of no colleagues an immediate superior = 1 if respondent is of one or several colleagues an immediate superior	0	1	0.33
<i>Establishment size</i>	= 0 if establishment employs between 1-10 people = 1 if establishment employs between 11-100 people = 2 if establishment employs more than 100 people	0	2	1.38

<i>Dummy redundancies</i>	= 0 if no reductions or redundancies have taken place in the enterprise within the last two years =1 if reductions or redundancies have taken place in the enterprise within the last two years	0	1	0.34
<i>Community</i>	If respondent feels as part of a community at work: never (=0), rarely (=1), sometimes (=2), often (=3)	0	3	2.26
Employer related variables				
<i>Dummy new supervisor</i>	= 0 if respondent has worked with the direct supervisor for more than two years = 1 if respondent has worked with supervisor for less than two years	0	1	0.28
<i>Help from direct supervisor</i>	= if respondent receives help and support from direct supervisor: never (=0), rarely (=1), sometimes (=2), often (=3)	0	3	2.32
<i>Acute pressure</i>	= if respondent works under acute pressure to meet deadlines or to perform: never (=0), rarely (=1), sometimes (=2), often (=3)	0	3	2.41
<i>Dummy workplace health promotion</i>	= 0 if enterprise did not carry out health promotion measures within last two years =1 if enterprise carried out health promotion measures within last two years	0	1	0.45
<i>Dummy no Break 6h</i>	= 0 if respondent rarely works for more than 6 hours without a break = 1 if respondent often works for more than 6 hours without a break	0	1	0.29
<i>Family and private interest</i>	= if respondent can succeed in taking private and family interest into account when planning working time: never (=0), sometimes (=1), often (=2)	0	2	1.52
Further control variables				
<i>Health</i>	if respondent describes his/her general state of health to be bad (=0) not so good (=1), good (=2), very good (=3), excellent (=4)	0	4	2.20
<i>Dummy being married</i>	= 0 if respondent lives without a partner = 1 if respondent is married or lives with a partner in the same household	0	1	0.63
<i>Dummy German mother tongue</i>	= 0 if German is not the mother the tongue of the respondent =1 if German is the mother tongue of the respondent	0	1	0.95

Table A1: List of variables being used in the multivariate regression analysis¹ (BIBB/BauA Employment Survey 2012)

¹ Some variables have been dropped during the model formation process due to insignificance: Number of jobs the respondents have had in the past, Dummies for job sectors, total working hours, percent of working time the respondents spend in front of a computer

6.2 Correlation matrix of the explanatory variables

Correlation-matrix	Female	West	Log wage	Years working	Dummy unemployed	Training related	Dummy university degree	Dummy daywork	D. being direct supervisor	Firm size	Community	Dummy redundancies	Dummy new supervisor	Acute pressure	Help from direct supervisor	D. workp. health promotion	Dummy no break 6h	Family private interests	Health	Married
<i>Female</i>	1																			
<i>West</i>	-0.05	1																		
<i>Log wage</i>	-0.345	0.129	1																	
<i>Years working</i>	0.021	-0.035	0.031	1																
<i>Dummy unemployed</i>	0.067	-0.073	-0.224	0.081	1															
<i>Training related</i>	-0.027	-0.003	-0.112	0.142	0.135	1														
<i>Dummy university degree</i>	0.003	-0.033	0.22	-0.155	-0.085	-0.06	1													
<i>Dummy daywork</i>	0.064	0.022	0.067	-0.004	-0.033	-0.059	0.0107	1												
<i>Dummy b. direct superior</i>	-0.132	0.038	0.223	0.015	-0.074	-0.064	0.02	0	1											
<i>Firm Size</i>	-0.144	0.035	0.337	-0.008	-0.127	0.054	0.033	-0.1	0.023	1										
<i>Community</i>	-0.046	-0.031	-0.048	0.022	0.027	0.086	-0.017	-0.039	-0.069	-0.02	1									
<i>Dummy Redundancies</i>	-0.046	0.007	0.014	0.039	0.013	0.052	-0.04	-0.068	0.02	0.1	0.068	1								
<i>Dummy New Supervisor</i>	-0.029	0.034	0.103	0.017	-0.027	0.019	-0.011	-0.06	0.001	0.184	0.024	0.132	1							
<i>Acute Pressure</i>	-0.026	-0.003	0.218	-0.022	-0.034	-0.055	0.061	-0.011	0.138	0.085	-0.003	0.094	0.0699	1						
<i>Help from Direct Supervisor</i>	-0.019	0.022	0.006	-0.036	-0.032	-0.059	0.024	0.005	-0.01	-0.034	-0.195	-0.134	-0.052	-0.093	1					
<i>D. workp. Health Promotion</i>	-0.122	0.02	0.242	-0.02	-0.112	-0.013	-0.004	-0.019	0.041	0.35	-0.07	0.015	0.108	0.023	0.118	1				
<i>Dummy no Break 6h</i>	0.009	0.028	0.117	-0.001	-0.024	-0.028	0.05	-0.05	0.13	0.011	0.06	0.081	0.052	0.209	-0.12	-0.327	1			
<i>Family and Private Interest</i>	0.018	0.051	-0.328	-0.012	-0.034	-0.031	-0.002	0.126	-0.062	0.004	-0.12	-0.0913	-0.026	-0.168	0.186	0.106	-0.212	1		
<i>Health</i>	-0.081	0.04	0.082	-0.203	-0.097	-0.09	0.075	0.061	0.04	-0.001	-0.128	-0.111	-0.039	0.092	0.168	0.076	-0.073	0.181	1	
<i>Married</i>	-0.047	-0.031	0.034	0.047	-0.056	-0.018	0.009	0.028	0.068	-0.009	-0.168	-0.151	0.001	0.024	0.026	0.013	0.019	0.052	0.031	1
<i>German Mother Tongue</i>	0.013	-0.064	0.016	0.101	0.002	0.011	-0.034	0.036	-0.024	-0.002	-0.068	-0.023	-0.001	0.019	0.004	0.013	-0.023	0.03	0.008	-0.018

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Yu Ru, H. (2011). Work-family conflict and job satisfaction in stressful working environments: The moderating roles of perceived supervisor support and internal locus of control. *International Journal of Manpower*, 32(2), 233 – 248.

Abstract (English)

Job satisfaction is a major determinant of overall happiness in a working society. Satisfied workers perform better and higher levels of job satisfaction are positively correlated with the performance of an organisation. In this paper, theory and literature on various aspects of job satisfaction are discussed. Using data from the BIBB/BauA Employment survey 2012 in Germany; attitude, behaviour and experience of a subsample of 10245 respondents are examined to find out about determinants of overall and specific job satisfaction of German employees. While results indicate that most employees are satisfied with their job in general, sources of dissatisfaction have been identified via Ordered Logit regression. Expectations tend to have a negative impact on job satisfaction when they are not met. Employers might increase employee satisfaction significantly when they have supportive supervisors, manage to reduce acute pressure, offer sufficient breaks and take family and private interest of the employees into consideration.

Abstract (Deutsch)

In Arbeitsgesellschaften ist die Jobzufriedenheit ein wesentlicher Bestandteil der Gesamtzufriedenheit von Individuen. Zufriedene Arbeitnehmer sind leistungsfähiger und eine höhere Jobzufriedenheit korreliert auch positiv mit der Leistung von Organisationen. Die vorliegende Arbeit diskutiert Theorien und die relevante Literatur im Bereich der Zufriedenheit von Erwerbstätigen. Mittels Daten der BIBB/BauA Erwerbstätigenbefragung 2012 werden Einstellungen, Erfahrungen und das Verhalten von 10245 Arbeitnehmenden analysiert um Faktoren zu identifizieren, welche die allgemeine, als auch die spezifische Arbeitszufriedenheit beeinflussen. Obwohl eine grosse Mehrheit der Erwerbstätigen in Deutschland zufrieden bis sehr zufrieden im Job ist, werden durch ein Ordered Logit Regressionsmodell Ursachen der Unzufriedenheit identifiziert. Erwartungen spielen eine wichtige Rolle und haben einen negativen Einfluss auf die Arbeitszufriedenheit wenn sie nicht erfüllt werden. Die Resultate weisen zudem darauf hin, dass Arbeitgeber die Zufriedenheit ihrer Angestellten signifikant erhöhen können wenn die Vorgesetzten die Angestellten ausreichend unterstützen, der Termin- und Leistungsdruck reduziert wird, genügend Arbeitspausen ermöglicht werden und auf familiäre und private Interessen rücksicht genommen wird.

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- 09/2010 – 03/2011 Intern
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