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Are supervisors satisfied to be supervising? Exploring the relationship between job satisfaction and supervisory power

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Abstract

Supervision is an important determinant of job satisfaction of subordinates. Job satisfaction is in turn correlated with higher job performance, lower absenteeism, and lower turnover. Surprisingly little research has focused on the relationship between supervisory power and job satisfaction. This paper aims to fill this gap in the literature by conducting an empirical analysis to see whether supervisory power is a significant determinant. Moreover, differences in this relationship between gender and migration backgrounds will be explored, as well as the relationship between job satisfaction and number of people supervised. To do so, a dataset from the LISS panel is analysed using Ordinary Least Squares regressions with three variables on job satisfaction serving as the dependent variables. The results show that supervisory power does not have a significant effect on job satisfaction, and no structural gender and migration background differences were found. The number of people supervised had no significant effect on job satisfaction.

Keywords:

Job satisfaction, Supervision, Gender, Migration background

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1. Introduction

Research has shown that supervision is an important determinant of job satisfaction of subordinates and improves firm performance (Tull, 2006; Kilby, 2000). Moreover, there is a possible relationship between job satisfaction and job performance itself, notoriously described as the "Holy Grail" of industrial psychologists (Landy, 1989; Judge et al., 2001). Therefore, having the right people to fill supervisory roles is detrimental to both employers and employees alike. Most literature, however, has focused solely on the job satisfaction of employees that are supervised by a superior. Far less is known about how job satisfaction of individuals in supervisory roles is affected and specifically whether supervisory power is a possible determinant. This research paper aims to explore this relationship. The central research question is:

"What is the relationship between having supervisory power and job satisfaction?"

On top of that, it will be examined whether job satisfaction of supervisors is affected by the number of employees supervised. Thus, a sub-question is:
"How does the number of people someone supervises affect job satisfaction?"
Lastly, this paper will delve deeper by investigating if the effect of supervisory power on job satisfaction varies across different demographic groups. Differences between men and women will be explored, as well as differences in migration background. The respective sub-questions are: "Are there gender differences in the effect of supervisory power on job satisfaction?"; and
"Does the effect of supervisory power on job satisfaction differ for those with a migration background?"

The outcomes of this research could prove useful for employers when filling supervisory positions. It might provide insights into whether people take satisfaction out of supervising, who derives the most satisfaction out of supervising, the optimal number of employees to be supervised, and possible other factors that influence job satisfaction.
To answer the research question and the accompanying sub-questions, a dataset obtained from the LISS panel will be used. This dataset consists of questionnaire responses from a representative sample of the Dutch population. Ordinary Least Squares (OLS) regressions using three variables on self-reported job satisfaction as the dependent variables will be

deployed to explore the aforementioned relationships. The OLS regressions are redeployed and split by gender and migration background to look at differences in the effect of supervisory power on job satisfaction across these subgroups.

This paper adds to the existing literature by exploring relationships in the ever-popular research field on job satisfaction that have surprisingly been overlooked. Firstly, it will add to the scarce literature of the effects of supervisory power and number of people supervised on job satisfaction. As far as I am aware in fact, there is only one study that has had the former as their central topic of research. This paper will answer if these are important factors to consider. Secondly, exploring gender and migration background differences for supervisors has rarely been done before. It thus expands on this meager stream of literature and could provide a foundation for future research to explore the causes behind the possible differences. Lastly, it is the first study to explore these topics in The Netherlands using a representative sample of the Dutch population.

The introduction will be followed up by the theoretical framework, where an overview of the relevant literature is presented and discussed. Following that, the data section will lay out the data collection, sample selection, and all relevant descriptive statistics. Then the methodology section discusses the analysis technique used, its key assumptions, and the data transformations made. Thereafter, the results are presented and interpreted. Finally, the main findings are summarized to answer the research question. The implications of the findings are discussed, the limitations of the study are outlined, and suggestions for future research are made to conclude the paper.

2. Theoretical framework

The main variable of interest in this research is job satisfaction. Therefore, it is important to look at what job satisfaction is, how the literature on job satisfaction has evolved, how to measure job satisfaction, the effects of job satisfaction, and at the literature of job satisfaction on supervisory power, gender differences, and migration background differences.

2.1 The evolvement of the study of job satisfaction

Job satisfaction has been a topic of research ever since the Great Depression in the late 1920s and early 1930s. Fisher & Hanna (1931) are the founders of this stream of literature. They argue that 'industrial unrest' is a reflection of emotional maladjustment of individuals. Unknowing where the maladjustment stems from, the individual takes it into every situation and frequently attributes it to its working situation. The measurement of job satisfaction and the theoretical development of the topic quickly improved thereafter, and more often started to fall under theories of motivation. Herzberg's two-factor theory was the pioneer at the time This theory states that there are two sets of factors that influence employees' job satisfaction. On the one hand there are 'motivators' such as achievement, growth, and responsibility. On the other hand, there are 'hygiene factors', which refers to external work conditions. Examples are leadership, compensation, and relationships with co-workers (Herzberg, Mausner & Snyderman, 1959). The Herzberg two-factor theory followed the recommendations of the famous paper by Maslow (1943), shifting employee motivation from a rewards-centric approach to a hierarchy of needs (Avoseh & Giese, 2018). Important to note, however, is that in the decades following numerous researchers criticised the theory for its simplicity and lack of external validation (Ewen, 1964; Dunnette, Campbell & Hakel, 1967).

In the two decades that succeeded, a more cognitive perspective was taken on job satisfaction. Smith, Kendall, & Hulin (1969) argued that frames of reference relative to the individuals' standards influence job satisfaction. These standards are set by past experiences, living standards, and the state of the economy. This is in line with the value-percept model by Locke (1969), which evaluated the importance of disparities between what is desired and what one has.

The following influential stream was that of the dispositional perspective on job satisfaction. Researchers argued that satisfaction evaluations were partly shaped by individuals their disposition, such as their personality traits. From the 90s onwards the literature returned to the affective component of job satisfaction. The earlier mentioned Fisher & Hanna (1931) suggested that emotions play an important role in job satisfaction, something that was largely ignored in the decades thereafter. However, researchers started to notice that surveys on job satisfaction lacked affective questions and that emotions were neither measured as a cause nor as a consequence of job satisfaction. Weiss & Cropanzano (1996) came up with the Affective Events Theory (AET). This theory proposes that affective reactions are affected by work events and dispositions. Thus, the combination of the work environment and one's traits and characteristics influences attitude formation and affective responses. AET uses the experience sampling method (ESM) to track and understand the development of affective reactions to work events over time. ESM is a research method in which participants get asked to report on their thoughts, emotions, and/or behaviours on multiple occasions. The AET was ground-breaking as it managed to combine the affective, cognitive, and dispositional approach all at once, and is therefore still relevant today (Judge, Zhang & Glerum, 2020).

2.2 The definition of job satisfaction

By now it is clear that the literature on job satisfaction has gone through many transformations in the last century. Therefore, there is not one definitive answer on what the term job satisfaction means. In this research the following two definitions will be used. Hoppock (1935) defined job satisfaction as: "any combination of psychological, physiological and environmental circumstances that cause a person truthfully to say I am satisfied with my job." Weiss & Cropanzano (1996) defined it in the following way: "job satisfaction is a positive or negative evaluative judgment of one's job or job situation." (p. 2) The former definition is comprehensive and allows both external and internal factors to influence job satisfaction, whilst the latter definition is practical and often in line with how job satisfaction is measured.

2.3 The measurement of job satisfaction

Now that the definition of job satisfaction has been established, it is important to look at how to measure job satisfaction. By far the most common way to measure job satisfaction is through questionnaires. van Saane et al. (2003) drafted up a systematic review of existing instruments to test their reliability, construct validity, and content validity. 6 out of 35 instruments met all the quality criteria. For this research it is only relevant to discuss one. The 'Andrew and Withey Job Satisfaction Questionnaire' was the only single dimension questionnaire that met the quality criteria. The other five were all multidimensional with anywhere between 18 and 79 items. Andrews & Withey used merely five items on a 1 to 7 scale to measure general job satisfaction as job satisfaction was not their primary focus in their research. The survey asks how people feel about their job, co-workers, type of work, environment, and available resources (equipment, information, supervision etc.) (Rentsch & Steel, 1992). As will be seen later, the survey questions and data deployed in this research are of a similar nature.

2.4 The effects of job satisfaction on performance

Up until this point the economic relevance of job satisfaction has not been made clear. The research and discussion about the nature of the relationship between job satisfaction and job performance has been going for nearly as long as the study of job satisfaction itself. Brayfield & Crockett (1955) wrote one of the most influential papers on this relationship and found no sufficient evidence on the effect of job satisfaction on performance.

Judge et al. (2001) performed a meta-analysis and reviewed different relationships between job satisfaction and job performance. In the qualitative review they used 312 independent samples adding up to over 54,000 observations. The estimated correlation coefficient between overall job satisfaction and general job performance was 0.30. This correlation coefficient is significantly different from zero and is considered moderate in magnitude.

2.5 The effects of job satisfaction on absenteeism and turnover

The findings of the effect of job satisfaction on absenteeism and turnover hugely differ. Whereas some researchers did find a negative relationship between job satisfaction and absenteeism (Brayfield & Crockett, 1955; Vroom, 1964), others found a weak relationship at best (Ilgen & Hollenback, 1977; Chadwick-Jones, Nicholson & Brown, 1982). To try and reach a consensus, Scott & Taylor (1985) performed a meta-analysis of 23 papers and found a

negative correlation coefficient of -0.15. If perfectly reliable instruments were available, the mean correlation would have been -0.29. Both these estimates are significantly different from zero and considerably higher than most prior research has found. At the same time, the researchers note that the estimates are moderate and explain only a small part of the variation. Lambert, Hogan & Barton (2001) used a national sample of US workers to study the direct effect of several variables on turnover intent and found job satisfaction to be twice as large as any other variable using a Maximum Likelihood Estimation. Irvine & Evans (1995) performed a meta-analytic study among a sample of nurses and found a correlation coefficient of -0.12. Once more, this coefficient is statistically significant but rather small in magnitude.

2.6 Job satisfaction and supervisory power

2.6.1 General discussion

Despite such an expansive literature on job satisfaction and its effects, relatively little research has been conducted on the job satisfaction of individuals in supervisory roles. Let alone research on the specific effect on job satisfaction of having a supervisory role.
A good starting point is to briefly look at the relationship between job level and job satisfaction. Whilst this will not provide an answer as to whether supervisory power might lead to higher job satisfaction, it is important to find out whether there is a relationship to begin with. In a meta-analytic study, a correlation coefficient of 0.26 was established. In cultures that attach high meaning to authority and hierarchy the relationship was considerably stronger (Robie et al., 1998).
In a comparison of managerial and non-managerial shopfloor employees in Western Australia, Savery (1988) found no statistically significant difference in job satisfaction between the two groups. Managers reported having not enough people nor time to get the job done, and found the work demands excessive. It was found that the non-managerial group attached more value to extrinsic motivators such as job security, shorter hours, and pay, whereas managers valued intrinsic motivators much more. In fact, the opportunity to lead, to have autonomy, and to have a challenging job were key motivators for managers. This difference in motivators can be said to be in line with Maslow's hierarchy of needs, stating that a person only moves on to a new need after it has satisfied the current one. It appears that the perceived benefits of having supervisory power are offset by the increased workload such that managers on the whole are not more satisfied.

Droussiotis & Austin (2007) did research on areas and levels of job satisfaction of managers in Cyprus. They collected their data through a questionnaire that included 14 questions on job satisfaction using a 5-point Likert scale. The questionnaire included all facets that can be found in the aforementioned Andrew and Withey job satisfaction questionnaire. Using a factor analysis, they showed that self-fulfilment, independence, and job environment were the most important attributes in explaining job satisfaction. The paper found a positive relationship between the number of employees a manager supervises and their satisfaction with their job environment, which relates to the questions on work hour requirements, the control over daily work activities, and the skill level of managerial colleagues.

A study conducted among Illinois workers researched the relationship between education and job satisfaction. It was found that the well-educated are more likely to attain a job that provides control of one's work, control over money, and control over other people. It was shown that the former two have a positive association with job satisfaction, but control over others did not. An explanation for this finding is that some of the tasks that come with supervision are inherently unpleasant or reduce the control over one's work (Ross & Reskin, 1992).

Based on the literature, the following hypotheses are formulated regarding the effect of supervision and number of employees supervised on job satisfaction:

H1: There is a positive relationship between job satisfaction and having supervisory power.

H2: Job satisfaction increases in the number of people someone supervises.

2.6.2 Gender differences

There is not one study that has empirically studied gender differences on the effect of supervisory power on job satisfaction. There have, however, been studies that tried to find explanations for the fact that women hold considerably fewer top positions compared to men. This literature will be discussed after a review of general gender-differences in job satisfaction.

Clark (1997) found that women reported higher levels of job satisfaction whilst they hold worse jobs. Men valued promotion prospects, pay and job security more than women, whereas women found relations with managers, the nature of the work itself and the number of hours worked to be more important. Differences in relative well-being is used to explain

the higher job satisfaction among women. Women seem to have lower expectations which is partly driven by the fact that women, on average, hold worse jobs. A finding in support of this reasoning is that the gender difference in job satisfaction disappears for women that are younger, higher educated, hold managerial positions, or work in male-dominant occupations. In a more recent study conducted across Europe similar results were found. Women were overall more satisfied with their job than men, but this difference diminished if the job position was of an equal level as that of men. Additionally, the gender-job satisfaction paradox for 14 European Union countries was presented. For countries with high equality on the labour market, there was no significant gender differences in job satisfaction. Of the countries compared, only The Netherlands and Portugal had a negative gender effect, possibly indicating the poor position of women in the labour market. In The Netherlands this can mostly be attributed to the part-time regime among women limiting their labour supply.
Several reasons have been brought up as to why women hold fewer top positions.
When it comes to women attaining fewer top positions than men, Polachek (1981) shows that this occupational sorting is a result of differences in abilities and preferences. It is argued that full commitment of women to the labour force would lead to a 35% increase of women in managerial positions. More recent literature suggests that men are more motivated and effective in competitive environments, leading to women attaining fewer job promotions (Gneezy, Niederle & Rustichini, 2003). This gender-difference in performance in a competitive environment was already found in a study among young children (nine to ten years of age) using a running competition (Gneezy & Rustichini, 2004). This is not to say that these differences are per se or solely genetically driven, as studies have shown that women feel less competent in male-dominated graduate programs (Ulku-Steiner, Kurtz-Costes & Kinlaw, 2000). They are more likely to drop out due to a competitive climate and a lack of support rather than poor performance (Goodman et al., 2002).
The overall conclusion is that there is not one biologically created universal female attitude towards employment. Labour market participation, performance in competitive settings, and gender-job satisfaction differences are also driven by different employment opportunities, different labour market regimes, and other environmental factors (Kaiser, 2007). Given the findings of the past literature, the following hypothesis is formulated:

H3: The effect of supervisory power on job satisfaction is smaller for women compared to men

2.6.3: Migration background differences

There are few studies that explore job satisfaction of supervisors across different migration backgrounds, ethnicities, or race. Therefore, this literature will be discussed after a review of general migration background-differences in job satisfaction.

Studies comparing job satisfaction of Whites and Black in the US has produced mixed results. Tuch & Martin (1991) showed a significant difference in reported job satisfaction in favour of whites. One race-specific difference that stood out was that Blacks valued intrinsic rewards much less than whites. The economically disadvantaged position of Blacks is used as an argument to explain this finding. In another study using the longitudinal US survey of Mature Men to compare the job satisfaction of black and whites the opposite result was found. Over a five-year period, from 1966 to 1971, blacks were significantly more satisfied with their job and the difference increased over time. As is becoming a trend by now, the reason given was that blacks have lower aspirations than comparable whites due to discrimination. This direct effect was sufficiently positive to offset the negative effect of receiving a lower pay and worse working conditions (Bartel, 1981). Bijedic & Piper (2019) looked at the difference in job satisfaction of entrepreneurs with different ethnic backgrounds in Germany. They found that the job satisfaction of natives was greater across the board, but that the difference was bigger between first generation migrants compared to natives than second generation migrants compared to natives. Being higher educated and better integrated was the reason for the converging difference.

Moch (1980) tried to find explanation for racial differences in job satisfaction. Variables related to race explained the largest part of the variation found. All other variables, including holding a supervisory role, had little explanatory power and were not statistically significant. A study among luxury-level resorts employees in the US looked at gender, race, and ethnicity differences in job satisfaction of supervisors. The results show that none of the three demographics had a significant effect on job satisfaction (Campbell, 2011). Given the findings of the scarce past literature, the following hypothesis is formulated:

H4: The effect of supervisory power on job satisfaction is equal for individuals with a migration background compared to natives.

3. Data

3.1 Data collection & sampling

To examine the research question, this paper will make use of data from the LISS panel. The LISS panel is an internet survey conducted among approximately 5,000 Dutch households consisting of 7,500 individuals. The LISS panel is managed by CentERData, a scientific institute for data collection and applied research, which is in turn affiliated with Tilburg University. The households are selected based on a true probability sample drawn from the population registered by the Central Bureau of Statistics of The Netherlands. Only individuals aged 16 years or older were selected and invited to fill in the survey.

The data used in this research specifically is from the LISS core study. This is a longitudinal study that is carried out each year. In total it covers eight topics using an equivalent number of questionnaires. This research will use the survey questions and data on the topic "Work and Schooling". Moreover, it will make use of wave 14 of which the data were collected in April-May 2021 and published in May 2021. Wave 14 of the Work and Schooling survey was sent out to 6,541 household members. There were 1,163 (17.80%) non-responses, whereas 5,478 (83.70%) individuals responded. Two reminders were sent to non-respondents. In the end, 5,287 (80.8%) completed the survey.

Several variables used in this study are collected from the Background Variables survey that the LISS panel collects and updates monthly from its respondents. These variables are age, gender, migration background, and education. To match the data of the Work and Schooling survey, the data for these variables will be taken from the survey that was conducted in May 2021.

Only a small subset of relevant variables in the dataset will be used. Data on two different variables asking respondents about their satisfaction with certain aspects of their work will be collected, one variable on overall job satisfaction, and one variable asking whether the respondent works in the public or private sector. On top of that, two variables asking if and how many employees respondents supervise(d) were collected.

As the variables on job satisfaction are the main variables of interest, observations of respondents that answered none of the questions or filled in "I don't know" for all of them were dropped from the dataset. After performing this action 2,968 observations were left. Table 3.1 in Appendix A shows t-test statistics comparing the mean values of several observed characteristics of these deleted observations versus the selected sample. The gender and supervision variables do not significantly differ, but age and net monthly income do.

Lastly, only observations were kept of respondents that indicated they either have paid employment, work or assist in a family business, or are self-employed. This action left 2,538 observations.

3.2 Description

The demographic variables include gender, age, migration background, and education. The descriptive statistics can be found in Table 1.1 – 1.3. Migration background, denoted as 'Origin', is a multiple-choice question where respondents had to select one of the following options: Dutch background, foreign first generation Western, foreign first generation non-Western, foreign second generation Western, foreign second generation, non-Western, or origin unknown. Education, too, is a multiple-choice question where respondents had to select one of the following options: wo, hbo, mbo, havo/vwo, vmbo, or primary school. Table 1.3 specifies what the equivalent level of education is outside the Netherlands. 51.18% of the respondents is female, giving women a slight prevalence in the dataset. The average age of 45.48 is in line with the average age of 42.3 of the Dutch population. Moreover, 80.03% of the respondents are of a Dutch background, which is similar to the Dutch average of 75.36% (CBS, 2021).

The variables related to job characteristics and job satisfaction are overall job satisfaction, satisfaction with salary, satisfaction with hours worked, private sector, current profession, and urban residence. The descriptive statistics for the job satisfaction variables can be found in Table 1.1. The descriptive statistics for the latter three variables can be found in Table 3.2 & Table 3.3 in Appendix A. For the variables on (facets of) job satisfaction, respondents had to give a score between 0 (= not at all satisfied) and 10 (= fully satisfied). Private sector is a dummy variable that asked respondents whether they work in the public or private sector. It takes on a value of 1 if they work in the private sector, and 0 if they work in the public sector. Current profession was a multiple-choice question where respondents could select nine different options. Urban residence asked respondents the urban character of their place of residence. 'Extremely urban', 'Very urban', 'Moderately urban', 'Slightly urban', and 'Not urban' were the options.

The variables related to supervision are supervision and number of people supervised. The variable supervision asked respondents if they have supervised or are currently supervising at least one other employee. It takes on value 1 if answered 'Yes', and 0 if answered 'No'. Only respondents that answered 'Yes' received a follow-up question asking to indicate the number

of people they supervise(d). The descriptive statistics can be found in Table 1.1. 568 (24.94%) respondents indicated that they supervise(d) at least one other employee, and the average number of employees supervised is 18.827.

3.2.1. Mechanisms

The two most extensive OLS regressions models both include numerous variables that serve as mediators. The consensus in statistics is that variables that are influenced by the independent variable of interest (in this case, supervision) and influence the dependent variables (in this case, job satisfaction) should not be included in a regression model. The main reason is that you could then be taking away part of the causal effect of the independent variable of interest on the dependent variable. However, the aim of this research is to try and find the effect of having supervisory power on job satisfaction, not the effect of being a supervisor. As quite a lot of mediating variables are included, only one will be discussed to illustrate the argument. Income is expected to increase once a supervisory role is obtained, and it could affect job satisfaction. Therefore, by leaving it out of the regression, the coefficient of the supervision variable includes the effect of receiving a higher income on job satisfaction. At the same time, mediating variables allows possible unobserved characteristics that influence the mediating variable and the dependent variables to bias the outcomes. Thus, including mediating variables has both its advantages and disadvantages. Therefore, it was chosen to display both models that include them and exclude them.
Descriptive statistics for the mediating variables can be found in Table 3.2 in Appendix A. Row 2 is a dummy variable that equals 1 if respondents their skills exceed their job level and 0 of it does not. Row 3, net income, is a continuous variable. For the variables in rows 5 – 9, ‘Agree entirely’, ‘Agree’, ‘Disagree’, and ‘Disagree entirely’ were the choice options. Finally, for the variables in rows 10 – 14, ‘Often’, ‘Sometimes’, and ‘Never’ were the choice options.

Table 1.1: Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Gender* (d)	2,538	0.512	0.500	0	1
Age	2,538	45.48	12.294	17	103
Overall satisfaction	2,515	7,456	1,416	0	10
Satisfaction with salary	2,509	6.979	1.718	0	10
Satisfaction with working hours	2,526	7.522	1.594	0	10
Supervision* (d)	2,406	0.249	0.433	0	1
Number of people supervised	568	18.827	51.945	1	800

Note: This table reports the descriptive statistics of the demographic variables. * Gender dummy equals 1 if respondent is female and 0 if male. * Supervision dummy equals 1 if respondent supervises and 0 if not.

Table 1.2: Descriptive statistics migration background

Variable	Frequency	Percentage	Cumulative
Origin:			
Dutch background	2,001	80.26	80.26
First generation Western	97	3.89	84.16
First generation non-Western	125	5.01	89.17
Second generation Western	150	6.02	95.19
Second generation non-Western	120	4.81	100.00
Observations	2,493		

Note: This table reports the frequency distribution of the 'Origin' variable

Table 1.3: Descriptive statistics education level

Variable	Frequency	Percentage	Cumulative
Education:			
University (wo)	461	18.21	18.21
Higher vocational education (hbo)	836	33.03	51.24
Intermediate vocational education (mbo)	729	28.80	80.04
Higher secondary education (havo/vwo)	191	7.55	8759
Intermediate secondary education (vmbo)	264	10.43	98.02
Primary school	50	1.98	100.00
Observations	2,531		

Note: This table reports the frequency distribution of the 'Education' variable indicating the highest completed level of education

4. Method

4.1 Analysis technique

To test all four hypotheses, Ordinary Least Squares regressions will be used. Four OLS regressions models will be used with each of the variables on job satisfaction as the dependent variable. Two of the four regressions models are redeployed on subsamples of the dataset to look at differences in gender and migration background of the effect of supervisory power on job satisfaction. The two models chosen are the most extensive model (Model 4) including all mediating variables and the model that includes all demographic and control variables but none of the mediating variables (Model 2).

OLS regressions are subject to numerous key assumptions. First, the regression model must be linear in its parameters. This assumption is not met as the dependent variables are of an ordinal nature. It is unusual to use OLS in this case as it could bias the estimates. However, there is research indicating that the bias is small and does not compromise the integrity of the results (Bollen & Barb, 1981; Johnson & Creech, 1983). As this paper does not make causal inferences, I believe the benefits of the interpretability of OLS outweigh the possible bias in the estimates. As a robustness check, Table 4.1 in Appendix B displays the estimates of the ordered logistic regressions of Model 2 & Model 4 on each dependent variable. Whilst coefficients are incomparable, the significance levels are largely the same across the two regression methods. Thus, OLS does not seem to invite severe bias to the estimates compared to the ordered logistic regressions. Second, the expected value of the error term should be zero and the variance of the error should be constant (homoscedasticity). The former is hard to test for, the latter can be tested for using the Breusch-Pagan and Weisberg-Cook test for heteroskedasticity. Table 4.2 in Appendix B shows the results of these tests, concluding that the assumption of homoscedasticity is not met. This causes the standard errors to be biased. Therefore, it was chosen to deploy robust standard to mitigate these effects. Considering the severity of the heteroskedasticity it is unsure whether this resolves the problem, thereby posing a limitation of the analysis technique. Lastly, there must be no multicollinearity among the independent variables. In other words, the correlation between the independent variables should not be too high. A way to test this assumption is by calculating the variance inflation factors (VIF) for the independent variables. Table 4.3 in Appendix B reports the average VIF on overall job satisfaction. As a rule of thumb, a value of 1 indicates no correlation, a value between 1 and 5 moderate correlation, and higher than 5 severe correlation. Based on the relatively low VIFs it can be concluded that the multicollinearity assumption is met.

4.2 Transformations

The variables on number of people supervised and monthly net income are highly right skewed. Therefore, including the variables as a continuous variable would lead to small coefficients, thereby downplaying the effect for the largest part of the population. Since the extreme observations (which by rule of thumb could be called outliers) are considered part of the population of interest dropping these variables was not desired. Thus, the variables were transformed into ordinal variables whilst retaining the integrity of the original ranking. For No. of people supervised, 1 – 3, 4 – 9, 10 – 19, 20 – 49, and 50+ employees were set as the categories. For the monthly net income, €0 - €1500, €1501 - €2500, €2501 - €4000, and €4001+ were set as the categories. Descriptive statistics for the transformed variables can be found in Tables 3.4 & 3.5 in Appendix A. For the comparisons of the supervision coefficient across the different migration backgrounds, two new variables were created. Each of the non-Dutch migration background groups only contains approximately 100 observations. With the aim of hopefully increasing the reliability of the results, first- and second-generation migrants were grouped together in two new variables. This ensured that both variables contained at least 200 observations each.

4.3 Mathematical specification

Now that the main assumptions and limitations related to the analysis technique are discussed, it is time to move on to the mathematical specification. Four OLS regression models are deployed across three variables on job satisfaction. The most extensive model can be expressed as follows:

$$\text{JobSatisfaction}_i = \alpha + \beta_1 \text{Supervision}_i + \beta_2 \text{No. of people supervised}_i + \beta_3 \text{Age}_i + \beta_4 \text{Gender}_i + \beta_5 \text{Origin}_i + \beta_6 \text{Education}_i + \beta_7 \text{Privatesector}_i + \beta_8 \text{Profession}_i + \beta_9 \text{Urban Residence}_i + M_i + \epsilon_i$$

JobSatisfaction_i is one of the two facets of job satisfaction or overall job satisfaction of individual i, α is the constant, $\beta_1 - \beta_9$ are the coefficients of the respective variables, M_i represents a vector of mediating variables, and ϵ_i is the error term.
Supervision_i, Gender_i, and Privatesector_i are dummy variables. Age_i is a continuous variable, $\text{No. of people supervised}_i$ and Education_i are ordinal variables, and Origin_i, Urban Residence_i, and Profession_i are categorical variables.

4.4 The ideal experiment

For a causal interpretation there are several assumptions that must hold. First, the sample size must be sufficiently large such that the assumption of Normality holds. For the largest part of the analysis this assumption is met with a sample size of approximately 2,000 individuals. Second, the independent variables must be correlated with the dependent variable and cannot be caused by another variable not in the dataset. Lastly, there should not be any measurement errors in the relevant variables. The latter two assumptions are problematic and are not met in this research. It is highly likely that the independent variables are correlated with factors not included in the dataset. On top of that, measurement error is a common occurrence in survey data. It could arise from respondent dishonesty or misunderstanding of the questions. Consequently, it is important to keep in mind that all inferences made in this research are not causal and at best show association between variables.

This begs the question what identification strategy would allow for a causal interpretation to research this topic. In an absolute ideal experiment, one would conduct a randomized field experiment with a large sample size. Using randomization, half of the population would receive treatment (that is, obtaining supervisory power) and the other half would serve as the control group. It is important that those that receive treatment are not aware that they are part of an experiment as otherwise they could be under the impression that they received supervisory power only for the purpose of the experiment. Participants should answer questions about their job satisfaction regularly and over a longer period such that in the end an average can be established. This would reduce measurement error as emotional state and mood are largely taken out of the equation. Researchers should collect as many time-invariant variables and other variables that are determined before the treatment. Collecting variables related to job characteristics and other external factors that influence individuals would be helpful in finding the specific effect of supervisory power on job satisfaction.

5. Results

Tables 2.1 – 2.3 aim to assess Hypothesis 1 & 2. To recap, these stated:

H1: There is a positive relationship between job satisfaction and having supervisory power; and

H2: Job satisfaction increases in the number of people someone supervises.

Based on the regressions presented, Hypothesis 1 can be firmly rejected. The independent variable of interest, Supervision, is not statistically significant in any of the six regressions. Similarly, Hypothesis 2 can be rejected too. The categorical variable on number of people supervised has a positive and marginally statistically significant effect in column (1) in Table 2.1 & Table 2.2, where moving up a category in number of people supervised leads, on average, to an increase in score of 0.087 in overall satisfaction and an increase in score of 0.11 in satisfaction with salary, respectively. A negative and statistically significant effect is found in column (3) in Table 2.3, indicating that moving up a category in number of people supervised leads, on average, to a 0.014 decrease in satisfaction with working hours.

Some other noteworthy findings that do not relate to the hypotheses will be briefly discussed. First-generation Western individuals are the only migrant group to be statistically less satisfied with their job compared to natives. The models in column (3) includes only three of the in total twelve mediating variables as they were expected to have a significant impact on job satisfaction. The outcomes confirm this expectation. Appreciation was significant and of considerate positive magnitude across all regressions, receives support and opportunity to learn were significant across two of the three variables on job satisfaction.

Table 2.1: OLS regressions on satisfaction with current work

	(1)	(2)	(3)	(4)
	Current work	**Current work**	**Current work**	**Current work**
Supervision	-0.125	-0.178	-0.085	-0.148
	(0.134)	(0.154)	(0.131)	(0.128)
No. of people supervised	0.087*	0.060	0.027	0.043
	(0.0430)	(0.048)	(0.041)	(0.041)
Age		0.015***	0.014***	0.014***
		(0.003)	(0.002)	(0.002)
Gender		0.025	0.006	0.026
		(0.064)	(0.057)	(0.059)
Origin				
First gen. Western		-0.508*	-0.366*	-0.340*
		(0.210)	(0.173)	(0.171)
First gen. non-Western		-0.213	-0.174	-0.188
		(0.159)	(0.147)	(0.146)
Second gen. Western		0.154	0.083	0.053
		(0.135)	(0.120)	(0.116)
Second gen. non-Western		-0.047	-0.030	-0.009
		(0.181)	(0.168)	(0.167)
Education		-0.083*	-0.089**	-0.085**
		(0.033)	(0.029)	(0.030)
Private sector		-0.116	-0.090	-0.096
		(0.068)	(0.061)	(0.061)
Current profession		-0.119***	-0.054**	-0.039
		(0.023)	(0.020)	(0.021)
Urban residence		0.009	0.005	0.004
		(0.023)	(0.020)	(0.020)
Appreciation			0.495***	0.427***
			(0.061)	(0.063)
Receives support			0.382***	0.362***
			(0.069)	(0.069)
Opportunity to learn			0.421***	0.365***
			(0.069)	(0.070)
Skills exceed job level				-0.105**
				(0.040)
Extra hours expected				-0.086
				(0.052)
Net income				-0.007
				(0.040)

Work at own pace				-0.061
				(0.051)
Concentration required				-0.127*
				(0.054)
Work too busy				0.094
				(0.057)
Ability to relate				-0.175*
				(0.071)
Under time pressure				-0.065
				(0.051)
Little freedom				-0.242***
				(0.052)
Constant	**7.436*** **	**7.733*** **	**3.783*** **	**5.319*** **
	(0.034)	**(0.309)**	**(0.350)**	**(0.443)**
N	**2368**	**2074**	**2069**	**2059**
R^2	**0.002**	**0.047**	**0.262**	**0.289**
adj. R^2	**0.001**	**0.041**	**0.257**	**0.281**

Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 2.2: OLS regressions on satisfaction with salary

	(1) Salary	(2) Salary	(3) Salary	(4) Salary
Supervision	0.044	0.034	0.124	0.085
	(0.159)	(0.165)	(0.152)	(0.151)
No. of people supervised	0.110*	0.0178	-0.014	-0.016
	(0.054)	(0.055)	(0.051)	(0.052)
Age		0.016***	0.015***	0.011***
		(0.003)	(0.003)	(0.003)
Gender		-0.126	-0.149*	0.012
		(0.076)	(0.071)	(0.073)
Origin				
First gen. Western		-0.718**	-0.582**	-0.467*
		(0.235)	(0.213)	(0.193)
First gen. non-Western		-0.375	-0.322	-0.358
		(0.209)	(0.193)	(0.194)
Second gen. Western		-0.055	-0.140	-0.194
		(0.145)	(0.141)	(0.135)

Second gen. non-Western		-0.327	-0.296	-0.285
		(0.193)	(0.191)	(0.180)
Education		0.063	0.062	0.009
		(0.040)	(0.037)	(0.036)
Private sector		-0.087	-0.087	-0.096
		(0.081)	(0.077)	(0.074)
Current profession		-0.136***	-0.081***	-0.047
		(0.026)	(0.024)	(0.024)
Urban residence		0.024	0.020	0.034
		(0.027)	(0.025)	(0.024)
Appreciation			0.653***	0.549***
			(0.081)	(0.082)
Receives support			0.170*	0.132
			(0.083)	(0.081)
Opportunity to learn			0.263***	0.247**
			(0.077)	(0.076)
Skills exceed job level				-0.111**
				(0.036)
Extra hours expected				0.080
				(0.060)
Net income				0.319***
				(0.047)
Work at own pace				-0.197**
				(0.063)
Concentration required				-0.064
				(0.068)
Work too busy				0.202**
				(0.070)
Ability to relate				-0.069
				(0.087)
Under time pressure				-0.034
				(0.058)
Little freedom				-0.054
				(0.059)
Constant	**6.902*** **	**6.813*** **	**3.586*** **	**3.557*** **
	(0.0416)	**(0.392)**	**(0.440)**	**(0.516)**
N	**2351**	**2060**	**2055**	**2046**
R^2	**0.007**	**0.060**	**0.182**	**0.218**
adj. R^2	**0.007**	**0.055**	**0.176**	**0.208**

Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 2.3: OLS regressions on satisfaction with working hours

	(1)	(2)	(3)	(4)
	Working hours	**Working hours**	**Working hours**	**Working hours**
Supervision	0.047	0.158	0.245	0.144
	(0.149)	(0.162)	(0.147)	(0.140)
No. of people supervised	-0.047	-0.111	-0.140**	-0.083
	(0.055)	(0.057)	(0.053)	(0.048)
Age		0.013***	0.013***	0.009***
		(0.003)	(0.003)	(0.003)
Gender		0.156*	0.133	0.218**
		(0.072)	(0.069)	(0.070)
Origin				
First gen. Western		-1.037***	-0.945***	-0.844***
		(0.226)	(0.208)	(0.203)
First gen. non-Western		-0.398*	-0.380*	-0.338
		(0.203)	(0.187)	(0.182)
Second gen. Western		-0.014	-0.084	-0.146
		(0.144)	(0.144)	(0.131)
Second gen. non-Western		-0.151	-0.151	-0.124
		(0.166)	(0.157)	(0.149)
Education		0.091*	0.088*	0.068*
		(0.038)	(0.035)	(0.034)
Private sector		-0.108	-0.094	-0.093
		(0.073)	(0.070)	(0.067)
Current profession		-0.057*	-0.016	-0.004
		(0.025)	(0.024)	(0.023)
Urban residence		-0.010	-0.013	-0.011
		(0.026)	(0.025)	(0.023)
Appreciation			0.470***	0.306***
			(0.071)	(0.070)
Receives support			0.292***	0.234**
			(0.080)	(0.075)
Opportunity to learn			0.161*	0.116
			(0.067)	(0.064)
Skills exceed job level				-0.021
				(0.043)
Extra hours expected				0.167**
				(0.062)
Net income				0.085*
				(0.041)

Work at own pace				-0.288***
				(0.065)
Concentration required				-0.156*
				(0.063)
Work too busy				0.231***
				(0.067)
Ability to relate				-0.0897
				(0.080)
Under time pressure				-0.156**
				(0.055)
Little freedom				-0.303***
				(0.058)
Constant	**7.539*** **	**6.808*** **	**4.061*** **	**5.650*** **
	(0.038)	**(0.349)**	**(0.405)**	**(0.499)**
N	**2367**	**2073**	**2068**	**2058**
R^2	**0.001**	**0.046**	**0.142**	**0.224**
adj. R^2	**-0.000**	**0.040**	**0.136**	**0.215**

Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Tables 2.4 – 2.6 aim to assess Hypothesis 3 & 4. To recap, these stated:

H3: The effect of supervisory power on job satisfaction is smaller for women compared to men; and

H4: The effect of supervisory power on job satisfaction is equal for individuals with a migration background compared to natives.

Based on the regressions presented, Hypothesis 3 can be firmly rejected. The difference in the supervision coefficient between male and female is not statistically significant across any of the regression models compared.

Hypothesis 4 cannot be rejected. The differences in the supervision coefficient between natives and first-generation and second-generation migrants respectively are largely insignificant. The only significant differences are found in Rows 5 & 6 of Table 2.5, which show that the coefficient for first-generation migrations is significantly larger.

Table 2.4: Gender differences in supervision coefficient

	Male	Female	Difference	p-value	N
Current work Model 2)	-0.110	-0.359	0.249	0.459	2,074
	(0.184)	(0.281)			
Current work Model 4)	-0.098	-0.312	0.214	0.450	2,059
	(0.152)	(0.238)			
Salary Model 2)	0.142	-0.171	0.313	0.374	2,060
	(0.200)	(0.289)			
Salary Model 4)	0.166	-0.062	0.228	0.494	2,046
	(0.173)	(0.286)			
Working hours Model 2)	0.171	0.069	0.102	0.784	2,073
	(0.183)	(0.327)			
Working hours Model 4)	0.150	0.077	0.073	0.817	2,058
	(0.160)	(0.273)			

Standard errors in parentheses. * $p < 0.100$, ** $p < 0.050$, *** $p < 0.010$.

Table 2.5: Fist generation differences in supervision coefficient

	Dutch	First gen.	Difference	p-value	N
Current work Model 2)	-0.252	0.057	0.309	0.705	1,854
	(0.162)	(0.801)			
Current work Model 4)	-0.207	0.174	-0.381	0.589	1,841
	(0.132)	(0.693)			
Salary Model 2)	-0.054	0.419	-0.473	0.495	1,842
	(0.173)	(0.671)			
Salary Model 4)	0.017	0.733	-0.716	0.257	1,830
	(0.157)	(0.612)			
Working hours Model 2)	-0.007	1.536**	-1.543**	0.029	1,853
	(0.177)	(0.686)			
Working hours Model 4)	0.007	1.689***	-1.682***	0.009	1,840
	(0.152)	(0.622)			

Standard errors in parentheses. * $p < 0.100$, ** $p < 0.050$, *** $p < 0.010$.

Table 2.6: Second generation differences in supervision coefficient

	Dutch	Second gen.	Difference	p-value	N
Current work Model 2)	-0.252	0.088	-0.340	0.512	1,891
	(0.162)	(0.493)			
Current work Model 4)	-0.207	-0.148	-0.059	0.904	1,880
	(0.132)	(0.469)			
Salary Model 2)	-0.054	0.568	-0.622	0.308	1,876
	(0.173)	(0.586)			
Salary Model 4)	0.017	0.255	-0.238	0.688	1,866
	(0.157)	(0.571)			
Working hours Model 2)	-0.007	0.715*	-0.722	0.106	1,889
	(0.177)	(0.411)			
Working hours Model 4)	0.007	0.072	-0.065	0.879	1,878
	(0.152)	(0.395)			

Standard errors in parentheses. * $p < 0.100$, ** $p < 0.050$, *** $p < 0.010$.

6. Discussion & Conclusion

6.1 Discussion

The null finding when it comes to Hypothesis 1 is contrary to the positive correlation Robie et al. (1998) found, but in line with findings from Savery (1988) and Ross & Reskin (1992). The former, however, only researched the effect of job level on job satisfaction. This research looked at a much more specific effect, namely that of supervisory power. Two possible explanations seem to be possible. It could be that, just as both Savery and Ross & Reskin discussed, the positive effect of supervisory power is offset by other negative factors such as increased workload, pressure, or burden of responsibility. Although mediating variables were added to control for as many of these factors as possible, it cannot be ruled out that job characteristic still played a part. The other explanation is that it could be that, on average, people do not take satisfaction out of having supervisor power as Ross & Reskin showed that control over one's work and control over money are important determinants of job satisfaction but control over others is not. Considering the rejection of Hypothesis 1 it is unsurprising that number of people supervised had no significant effect either, as the two possible explanations carry across to Hypothesis 2 too.

The findings concerning Hypotheses 3 & 4 are very much in line with the one study found that had the same research goal in mind. As Campbell (2011) and the literature review in this study showed, women and individuals with a migration background are often at a disadvantaged position but nonetheless more satisfied with their job. From this analysis I cannot infer that the difference disappears for women and migrants in supervisory roles, but the supervisory aspect of the job does not play a part in causing variation.

6.2 Conclusion

This paper aimed to investigate the relationship between job satisfaction and supervisory power. To do so, OLS regressions were used with overall job satisfaction and two facets of job satisfaction serving as the dependent variables.
Additionally, the effect of differences in gender and migration background of having supervisory power on job satisfaction was researched, as well as the relationship between job satisfaction and the number of people supervised. The research question formulated was:

"What is the relationship between having supervisory power and job satisfaction?"

This analysis found no relationship between job satisfaction and having supervisory power. Based on these results it can be concluded that supervisory power is not a determinant of job satisfaction. No significant relationship was found between the number of people supervised and job satisfaction. Furthermore, statistical tests comparing the supervision coefficient across males and females showed no significant difference. The same holds largely true for the comparison between natives and first-generation and second-generation migrants respectively. The supervision coefficient was only significantly larger for first-generation migrants when it comes to satisfaction with working hours. This thus implies that supervisory power does not affect women and individuals with a migration background differently compared to men and natives, respectively.

In view of the predominant null findings across all hypotheses, the practical and theoretical implications are quite frankly limited. Past literature has shown that there is a significant correlation between job satisfaction and job performance, as well as between job satisfaction and absenteeism and turnover. Looking at it from a purely economic perspective companies should therefore take an interest in the job satisfaction of their employees. Pertaining to the main findings of this paper, two practical implications for employers should be highlighted. First, when only looking at derived job satisfaction there is no reason to discriminate against women or migrants when filling a supervisory role. Employers should look at people as the individual itself, and not as a member of a gender or ethic group. Second, for the most part job satisfaction of supervisors is not affected by the number of people supervised. Finally, some of the additional results showed that some job characteristics are of significant effect on an individual's job satisfaction. Receiving appreciation, receiving support, and having

opportunities to learn all had sizeable effects. Therefore, it is encouraged for employers to set up learning & development programs and to show their appreciation for their employees' effort.
Despite the lack of theoretical implications, I believe this paper does add to the existing literature. Considering the enormous interest on the topic of job satisfaction by both psychologists and economists, relatively little research has looked at the effect of having supervisory power on job satisfaction. Let alone whether there are differences in gender and migration background or whether the number of people someone supervises has an effect. Moreover, it is the first study to explore these topics in The Netherlands using a representative sample of the Dutch population. Whilst insignificant findings might not be pleasing or interesting, they are merely a reflection of what the data at hand shows.

That does not mean that this paper does not have numerous limitations that limit the validity, reliability, and consistency of the results. First and foremost, it must be reiterated that this study does not measure any causal relationships. At the very best the results presented display associations between variables. In the discussion of the ideal experiment, it was shown that the research suffers from measurement errors and omitted variable bias. This was largely caused by the fact that the dataset deployed was vast but did not have job satisfaction as its primary focus. Second, the OLS assumptions of linearity and homoscedasticity were not met. The use of OLS with an ordinal dependent variable was a conscious choice but regardless harmed the reliability and validity of the estimates. Lastly, the study has limited external validity. The literature already showed that measures related to job satisfaction are highly dependent on the labour market conditions in a given country and on other environmental factors. The Netherlands has a rather unique labour market regime, specifically when it comes to labour market participation of women. Therefore, the results cannot be taken for granted outside of The Netherlands.

Notwithstanding its limitations, this paper can serve as a starting point of future research. There is a great deal more to explore on this topic. Addressing the limitations mentioned would already be a good step in the right direction. First and foremost, I would recommend establishing a questionnaire that has job satisfaction as its central topic. This would allow to formulate questions in a more accurate way and gear them specifically to (aspects of) job satisfaction. It should also make the questionnaire more concise and thereby prevent survey fatigue. Preferably, one would use ESM as recommended by Weiss & Cropanzano (1996) and

add controls for mood and emotional state to limit survey response bias. If the aim of future research is to try and look for causal relationships using survey data, an ordered logistic regression is the only way to do so. To boost external validity controls for labour market conditions could prove useful and would allow for inter-country comparisons. Future research might aim at exploring the mechanisms by which the found non-differences can be explained. When it specifically comes to the null findings in gender and migration background differences, there is much to explore I believe. It might cause discomfort to do so, but sometimes you must seek it in order to make progress.

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Appendices

Appendix A

Table 3.1: Balance test

	Dropped observations	Selected sample	Difference	t-statistic	p-value
Gender	0.502	0.512	-0.01	-1.640	0.101
	(0.500)	(0.500)			
Age	63.173	45.480	17.693	49.124	0.000
	(17.944)	(12.294)			
Income	1194.458	2297.349	-1102.891	-29.459	0.000
	(3169.853)	(1022.603)			
Supervision	0.224	0.249	-0.025	1.3595	0.175
	(0.417)	(0.433)			

Note: Means-comparisons test comparing observed characteristics of the deleted observations versus the selected sample. Standard deviations in parentheses.

Table 3.2: Descriptive statistics additional variables

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Private sector* d	2,285	0.618	0.486	0	1
Skills exceed job level* d	2,492	0.343	0.475	0	1
Net income	2,406	2297.349	1022.603	50	13,000
Urban area	2,520	3.065	1.422	1	5
Appreciation	2,400	2.810	0.667	1	4
Receives support	2,400	2.900	0.607	1	4
Opportunity to learn	2,400	2.921	0.637	1	4
Under time pressure	2,400	2.210	0.755	1	4
Little freedom	2,400	1.972	0.696	1	4
Extra hours expected	2,405	2.17	0.610	1	3
Work at own pace	2,405	1.417	0.593	1	3
Concentration required	2,405	1.423	0.572	1	3
Work too busy	2,405	1.698	0.581	1	3
Ability to relate	2,405	1.191	0.431	1	3

Note: This table reports the descriptive statistics of the additional variables. * Private sector dummy equals 1 if respondent works in the private sector and 0 if in the public sector. * Skills exceed job level dummy equals 1 if respondents skills exceed their job level and 0 if it does not.

Table 3.3 Descriptive statistics current profession

Variable	Frequency	Percentage	Cumulative
Current profession			
Higher academic	323	13.37	13.37
Higher supervisory profession	230	9.52	22.90
Intermediate academic	691	28.61	51.51
Intermediate supervisory	306	12.67	64.18
Other mental work	466	19.30	83.48
Skilled and supervisory manual work	135	5.59	89.07
Semi-skilled manual work	156	6.46	95.53
Unskilled and trained manual work	81	3.35	98.88
Agrarian profession	27	1.12	100.00
Observations	2,415		

Note: This table reports the frequency distribution to the variable 'current profession'.

Table 3.4 Descriptive statistics transformed no. of people supervised

Variable	Frequency	Percentage	Cumulative
No. of people supervised			
1 - 3	137	24.12	24.12
4 - 9	222	39.08	63.20
10 - 19	84	14.79	77.99
20 - 49	82	14.44	92.43
50+	43	7.57	100.00
Observations	568		

Note: This table reports the frequency distribution to the transformed 'No. of people supervised' variable.

Table 3.5 Descriptive statistics transformed net monthly income

Variable	Frequency	Percentage	Cumulative
Net monthly income			
€1 - €1,500	434	18.09	18.09
€1,501 - €2,500	1,157	48.23	66.32
€2,501 – €4,000	713	29.72	96.04
€4,0001+	95	3.96	100.00
Observations	2,399		

Note: This table reports the frequency distribution to the transformed 'Net monthly income' variable.

Appendix B

Table 4.1 Ordered logistic regressions of Model 2 & 4 on all dependent variables

	Current work Model (2)	Current work Model (4)	Salary Model (2)	Salary Model (4)	Working hours Model (2)	Working hours Model (4)
Supervision	-0.081	-0.151	0.079	0.139	0.166	0.152
	(0.191)	(0.194)	(0.191)	(0.194)	(0.188)	(0.191)
No. of people supervised	0.035	0.040	0.029	-0.013	-0.126	-0.093
	(0.066)	(0.068)	(0.067)	(0.068)	(0.066)	(0.067)
Age	0.019***	0.021***	0.020***	0.016***	0.018***	0.014***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Gender	0.049	0.059	-0.112	0.062	0.222**	0.316***
	(0.083)	(0.089)	(0.083)	(0.088)	(0.083)	(0.089)
Origin						
First gen. Western	-0.568**	-0.454*	-0.703***	-0.577**	-1.159***	-1.035***
	(0.220)	(0.224)	(0.213)	(0.213)	(0.217)	(0.224)
First gen. non-Western	-0.260	-0.227	-0.377*	-0.371	-0.368	-0.337
	(0.191)	(0.195)	(0.190)	(0.197)	(0.197)	(0.198)
Second gen. Western	0.291	0.180	-0.117	-0.325	0.052	-0.092
	(0.173)	(0.175)	(0.166)	(0.172)	(0.167)	(0.171)
Second gen. non-Western	0.061	0.187	-0.273	-0.312	-0.213	-0.231
	(0.197)	(0.201)	(0.193)	(0.195)	(0.192)	(0.191)
Education	-0.124**	-0.138***	0.059	0.010	0.092*	0.083*
	(0.040)	(0.042)	(0.040)	(0.041)	(0.040)	(0.041)
Private sector	-0.175*	-0.177*	-0.119	-0.113	-0.128	-0.127
	(0.086)	(0.089)	(0.086)	(0.088)	(0.086)	(0.087)
Current profession	-0.171***	-0.063*	-0.158***	-0.056	-0.071**	0.0005
	(0.027)	(0.029)	(0.027)	(0.029)	(0.027)	(0.028)
Urban residence	0.030	0.035	0.040	0.043	-0.008	-0.010
	(0.029)	(0.030)	(0.029)	(0.030)	(0.029)	(0.030)
Appreciation		0.697***		0.727***		0.332***
		(0.081)		(0.082)		(0.079)
Receives support		0.534***		0.180*		0.293**
		(0.092)		(0.090)		(0.090)
Opportunity to learn		0.537***		0.303***		0.167*
		(0.079)		(0.077)		(0.077)
Skills exceed job level		-0.183***		-0.127**		-0.049
		(0.048)		(0.048)		(0.048)
Extra hours expected		-0.137		0.069		0.230**

		(0.075)		(0.074)		(0.075)
Net income		-0.011		0.413***		0.109*
		(0.055)		(0.055)		(0.054)
Work at own pace		-0.025		-0.188*		-0.315***
		(0.076)		(0.075)		(0.076)
Concentration required		-0.233**		-0.044		-0.207**
		(0.080)		(0.079)		(0.079)
Work too busy		0.204*		0.272**		0.347***
		(0.088)		(0.087)		(0.086)
Ability to relate		-0.276**		-0.133		-0.087
		(0.105)		(0.103)		(0.102)
Under time pressure		-0.142*		-0.057		-0.206**
		(0.069)		(0.068)		(0.068)
Little freedom		-0.427***		-0.115		-0.448***
		(0.071)		(0.069)		(0.071)
N	**2074**	**2059**	**2060**	**2046**	**2073**	**2058**

Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 4.2 Breusch-Pagan / Cook-Weisberg test for heteroscedasticity

	Chi2	p-value
Current work Model (2)	76.39	0.000
Current work Model (4)	212.22	0.000
Salary Model (2)	112.73	0.000
Salary Model (4)	172.32	0.000
Working hours Model (2)	87.41	0.000
Working hours Model (4)	209.57	0.000

Note: this table reports the Breusch-Pagan / Cook-Weisberg test for heteroscedasticity.

Table 4.3 Variance inflation factor to test for multicollinearity

	Mean VIF
Current work Model (2)	1.67
Current work Model (4)	1.56

Note: this table reports the values of the mean Variance Inflation Factors (VIF) to test for multicollinearity