

A Work Project, presented as part of the requirements for the Award of a Master's degree in
Management from the Nova School of Business and Economics

MOTHERHOOD PAY GAP AND EMPLOYMENT

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19th May 2021

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Abstract

This work project investigates to what extent the motherhood pay gap has matured over 35 years. Childbirth often leads mothers to pause their employment. Consequently, mothers' wages and employment opportunities are often impacted. The analysis highlights the wage gap issues, employment differences and opportunities between childless women and mothers with various years of maternity leaves. The reviewed data from the German SOEP panel set highlights that throughout the years, the motherhood pay gap has not decreased. In Germany, opportunities for women have not significantly changed and childless women continuously have beneficial prospects in the labor market compared to mothers.

Keywords Employment, Motherhood, Opportunity Development, Work Environment, Wage Gap

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

1. Introduction

In Germany in 1975, the average woman had her first child by the age of 27. She is expected to have on average 1.45 children. In 1990, a first-time mother was on average 28.4 years old, while still having on average 1.45 children and in 2010, women were expected to have their first child by the age of 31.1 and further to have an average of 1.39 children (World Bank Group 2021). The age at which mothers are having a first child is steadily increasing, with the total number of children being almost stable. Since 1975, the image of a mother has changed from being a stay-at-home mother to more mothers looking for work opportunities shortly after childbirth (Barišić and Consiglio 2020). From 1980 onwards, women are recognized to achieve economic independence, and labor market participation has increased by 71% (Avellar and Smock 2003). When it comes to starting a family and co-parenting as well as the parents working status, in the labor economy it is observed that the moment a child is born, mothers get negatively judged for working (Correll, Benard, and Paik 2007). With the progress of more mothers returning to work while having young children and the general increase of more women working, past literature indicates that women and mothers are treated differently in their jobs. Clear indications on differences are given by income. To observe changes over time, the research question the work project focuses on is: *Comparing women in workplace environments, how has the motherhood wage gap evolved for women returning to labor after childbirth over the last 35 years?*

Previous monitored differences in income for mothers and non-mothers are called: “motherhood pay gap” (Grimshaw and Rubery 2015). While the problem and existence of the motherhood pay gap is known and observed, the development over time has not received any attention yet. Hence, the project focuses on observing mothers and childless women while focusing on differences detected over time. Wage differences, as well as changes in the characteristic of the work environment of women, are looked at. The development of characteristics is included in the concept of opportunity development, which observes how and to what extent opportunities for

women have been developed over the complete period of 35 years. The research is focusing on the German female population.

Summarizing the analysis completed, it is observed that the motherhood pay gap has only shown slight reductions over the period 1984 – 2018. While in general, women's wages have increased, maternity years taken by mothers have significantly impacted hourly wages as well as opportunities in career developments. Opportunities on working types, contract types, and other aspects are not consistently given for all types of women, and hence greatly influence a women's income respectively.

In the next section, information on past literature on women, wages, and employment factors is consolidated. Further, the methodology of the research is explained, giving information on the dataset and statistical analysis done. Afterward, the results of the analysis done for each statistical test are presented, followed by limitations and further research ideas. Lastly, the work project ends by finalizing the outcome of the research in part of a discussion with implementation aspects as well as a conclusion.

2. Literature Review

2.1 Women, wages, and other employment impacts

With the focus being on the gender earning gap for several years, the motherhood pay gap has been neglected. Grimshaw and Rubery (2015) define this gap as a “pay gap between mothers and non-mothers” (Grimshaw and Rubery 2015, 9). It is important to mention is that the motherhood wage gap is impacting women getting pregnant and not for example her mentioning the wish to have children, as well as that non-mothers are defined as women without dependent children. When women start to work, during the age period 20-24 and up until they reach the most common child-bearing age, they tend to earn the same. As soon as children are born, the earning structure gets disrupted, and children become an important point of fracture (Gärtner 2014). The empirical findings of Correll, Benard, and Paik (2007) support that the wage gap between mothers and non-

mothers is larger than the pay gap between men and women. Women face difficulties in combining paid employment with parenthood, due to for example limited childcare, inflexible work conditions, or long work hours. These factors lead to postponement of parenthood as well as increases in childlessness (World Bank Group 2021). While in the past, around 10% of women remained childless, since the 1980s it has increased to more than 20% (Kreyenfeld and Konietzka 2017). With a high magnitude increase in career focus during the 20th century and women having high career prospects, childbearing gets postponed even further, as opportunity costs when having children are high (World Bank Group 2021). Hence, at a certain point, women are biologically no longer able to have children. Next to career ambitions, insecurity about a partner, or indifferences about parenting styles can be further reasons to postpone having children (Mynarska and Rytel 2019).

With more women delaying childbirth, greater separate groups of mothers and childless women are emerging. As a result, the motherhood wage penalty is more prominent than ever. Reasons for the motherhood penalty have been identified and divided into three different approaches: The rationalist economic approach, the sociological approach and the comparative institutionalist approach (Grimshaw and Rubery 2015). The first one, the rationalist economic approach, implies that mothers have reduced human capital or knowledge. The cutbacks result from interruptions or reductions in the labor market, cutbacks in working time, and employment interruptions. It has been observed that the average wage of a mother is less than one of a woman without children, even after controlling for human capital, labor market experience, and part-time work status (Avellar and Smock 2003). Furthermore, the approach includes that women with children are less inclined to seek out training or higher-paid positions with responsibilities. It is said that women prefer positions in family-friendly companies, which include occupations that allow women to combine work and family responsibilities and are more flexible and easier adjustable. These jobs are most often lower-paid, and women, similarly, often opt for part-time jobs and hence automatically have fewer

responsibilities (Grimshaw and Rubery 2015). While the choice of a job has a significant effect on the overall wage disadvantage, Kühhirt and Ludwig (2012) argue the career orientation is no indicator for a smaller or greater wage gap between women and mothers. Furthermore, German mothers incur a wage loss of about 4.8% for each year of maternity leave, taking into consideration the number of years a woman continues to work afterward. Women with a career break of three years are expected to earn 12% less than non-mothers. Within many European countries, the income of mothers is additionally affected by the number of children they have. More children lead to less time working, but it is not observed that the hourly wage further decreases (Felfe 2012).

Research has shown that mothers tend to trade higher earnings for work conditions that help combine work and family when reentering into the labor market (Kühhirt and Ludwig 2012), to be able to be a caregiver while having a flexible integration at work (Gangl and Ziefle 2009). Career breaks damage earning and employment as well as in that motherhood is associated with a pronounced cut in working hours. Throughout the period 2000 - 2010, on average, 87% of all non-mothers are working full-time, while 48% of mothers are either part-time employed or held a marginal job, which is defined as “employment below a certain income threshold with reduced social security contributions” (Caliendo, Künn, and Uhlendorff 2012, 1; Kühhirt and Ludwig 2012). Periods of part-time work cause loss in work experience and therefore depreciation in a mother’s human capital, but it is preferred as it offers the opportunity to combine family and work (Beblo and Wolf 2002). Since 2000, there is a trend observable that also many mothers without long career breaks return to full-time employment (Avellar and Smock 2003). Furthermore, as mentioned beforehand, wage loss does occur immediately after maternity leave (4.8% per year of break). However, mothers starting to work in the first year after childbirth tend to catch up with work fast and avoid big wage losses (Felfe 2012).

Next to the impacts of motherhood, one dimension to be discussed is if the motherhood wage gap is dependent on the educational degree a woman has. While it is generally known that the wage

risers with education, Anderson, Binder, and Krause (2003) compare motherhood and wage penalty for mothers in different educational groups: high school dropouts, high school graduates, college experience, and colleague degrees. The assumption they have is that jobs requiring more education require more effort and hence, the motherhood wage penalty should be greater for mothers with higher levels of education. After some extensive research, they did not find support for this theory since their data showed that high school graduates experience the largest wage penalty. Furthermore, Gangl and Ziefle (2009) found that mothers will less likely invest in formal education and training compared to childless women and hence tend to fall behind in terms of education. The same authors also suggested that motherhood weakens bargaining power in the German labor market (Gangl and Ziefle 2009) and hence, childless women are 1.8 times more frequently hired than mothers (Correll, Benard, and Paik 2007).

The second approach is the sociological approach, proposing that employers might compute hiring and promotion strategies including old stereotypes and their expectations, which include burdens and obstacles for mothers. The obstacles encompass having not enough childcare options available, starting at an early age, and the undervaluation of mother's jobs (Grimshaw and Rubery 2015). When women become mothers, they are sacrificing earnings for natural interruptions to paid employment caused by the experience of childbirth and an associated and mandatory period of leave for childcare. Research shows that the stereotype of employers contains the impression that a childbearing woman is seen to have a lower level of commitment and motivation to an organization and hence employers most often hold down their pay and exclude them from promotions (Grimshaw and Rubery 2015), or do not even hire women with children. Furthermore, mothers in specific jobs, like consultants, are evaluated as being less competent than non-mothers, as well as that visibly pregnant woman are described as being less committed to their jobs, less dependable, and less authoritative. Hence, women already get convicted before a child is born, as pregnant women are assumed to be warmer, emotional, and more irrational (Correll, Benard, and Paik 2007).

Additionally, the outcome leads to the observation that mothers rather tend to look for jobs in smaller firms, with about 20 employees, where lower wages are more common (Kühhirt and Ludwig 2012). The reason why mothers tend to favor smaller places is that these companies tend to be more family-friendly, as they have better workplace policies which mothers like to take advantage of to better balance family and work. These companies are more likely to treat mothers and childless women the same, and to avoid any pre-assumptions on productivity differences (Avellar and Smock 2003).

Lastly, the third approach, the comparative institutionalist approach, reasons that the motherhood pay gap exists, as there are different legal requirements for women and mothers. Not only is the support system different, but also the taxation system varies greatly (Grimshaw and Rubery 2015). The German tax system for family policies on parental leave and childcare provision includes paid and job-protected leaves. These policies often only impact the wage gap in the short term, both in earnings and employment, since they are affecting a mother's incentive to work (Kleven et al. 2019). Even though Germany is already working on laws and regulations to support the decrease of the motherhood wage gap, with active controls of women's job histories, Germany still displays a high and increasing wage penalty for motherhood (Barišić and Consiglio 2020). Childcare in Germany relies a lot on a semi-public and subsidized kindergarten system. From the age of 3 onwards, children have the statutory right to visit a kindergarten, but the pre-kindergarten childcare system is mostly private and financially not supported by the government. Based on the options mothers have, they are more or less institutionally sheltered from market forces and hence might find longer work interruptions more economically feasible, as the job gets protected for up to three years and hence it might seem less stressful to return to work (Gangl and Ziefle 2009). As highlighted, over the years, some changes for mothers and women are observed. Opportunity changes, which are defined as “qualifying actions through which an agent can achieve an advantageous position” (Hansson 2004, 305) however are not monitored over the last decades.

As the research done regarding the motherhood pay gap in Germany has received little attention yet, this paper will only focus on the development of the motherhood wage gap and opportunity transformations for mothers in the workplace environment over the time of the last 35 years.

With the previous literature and research examined, this work project is looking to evaluate the following hypothesis:

H₁: In Germany, the monthly income of women with children is lower than for women without children, while controlling for other income influencing aspects.

H₂: Opportunities for women with children have approached the ones of childless women over the last 35 years.

3. Methodology

Two different kinds of datasets are applied to be able to receive the most accurate analysis possible for this work project. First, the GESIS dataset of social science, (GESIS - Leibniz-Institut für Sozialwissenschaften 2020), as a benchmarking dataset is evaluated, followed by the second dataset, the SOEP panel dataset (Liebig et al. 2019), which will be used to specifically test the hypotheses as well as the research question. A link for the datasets used for the analysis is found in appendix 14.

3.1 Research Design

Before the main dataset is taken into consideration and analyzed, a benchmark is established. To be able to observe the opportunity development for women without children and new mothers, first, a benchmark to which changes in periods of the analysis are measured against is evaluated. The benchmark used includes preference developments in the area of work, family, and children. For this purpose, observations from 1,474 women of the age range 18 - 39 years and their assessment of importance on job and family is used. The quantitative dataset for this observation is retrieved from the 'GESIS - Leibniz-Institute' for social science (2020). Further details on the scaling, the questionnaires, and data sourcing are provided on the website: <https://www.gesis.org/home>.

The second data set, the SOEP panel dataset, is used to observe opportunity changes for a certain type of population over long periods. To be able to appraise whether wage changes or other opportunities in workplace environments for women have changed over the last 35 years, past data studies with large numbers of people questioned over a continuous period were considered. As the work project solely focuses on the development in Germany, the data used includes input from 1984 - 1989 from West Germany and afterward includes all of Germany (Liebig et al. 2019). It provides a continuous quantitative dataset for the period 1984 - 2018 and questions individuals concerning different factors, divided into categories like ‘Work and Employment, Health and Care or Education and Qualification’. The individual questionnaire is addressed to women over the age of 18 and every year groups of individuals were asked the same or similar questions. Particularly important for this paper is that most of the individuals were asked to answer the survey five consecutive years in a row, allowing for precise evaluation of how opportunities for women after childbirth have developed. More detailed information on the data sourcing and the questionnaires can be found on <https://paneldata.org>.

The dataset was adjusted to fit the purpose of this study. It was filtered by sex (female only), age (18-39), and monthly income > 0€. Clusters and categories for women as well as periods are explained in table 1.

Table 1: Category overview with names for description purpose and their meaning

Group category	Given name	Explanation
Category women 1	Intended women	working women with the intention to have children in the future (they will switch from intended women to mothers within the periods observed)
Category women 2	Focused women	working women, not having children within the observed period
Category women 3	Unexperienced women	women returning into employment within one year after having their first child
Category women 4	Explorer women	women returning into employment within two years after having their first child
Category women 5	Experienced women	women returning into employment within three or more years after having the first child
Time_slot_1	Period 1	1984-1988
Time_slot_2	Period 2	1994-1998
Time_slot_3	Period 3	2004-2008
Time_slot_4	Period 4	2014-2018

While all women were clustered into different categories, the time slots do not cover the whole time of 35 years, to better highlight differences in opportunities observed. Further selection factors used in this analysis focus on the employment opportunities for women. The literature review already gave an important insight into the importance of factors like the employer, type of working condition (Grimshaw and Rubery 2015), or the achieved level of education for women (Gangl and Ziefle 2009). To observe the impact of income changes as well as other work-related developments of women, the independent variables chosen for the analysis are based on information retrieved from the literature review. Variables included in the dataset are hence: home office (yes, no), working condition (full-time employment, part-time employment, vocational training, marginal employment), contract type (permanent contract, temporary contract, self-employed), changes in employer (first job, returned to past employer, new position, different employer, taken on by the company, changed job within a company, new job as self-employed, continued position), and education (lowest level, middle level, highest level, different degree, and no degree). Further information on the meaning of the variables is given in appendix 1. In total, 2,604 women from the defined periods answered the variables identified for the upcoming analysis in this work project.

3.2 Statistical Analysis

Different types of analyses are conducted to evaluate the changes in the employment opportunities for women but also to look at the influence on income and which factors partly influence income. As already mentioned beforehand, first of all, the development of preferences for women over the past years is analyzed. Afterwards, a multiple linear regression on income will follow, and a more detailed study, a multinomial logistic regression, on the defined factors and their influence will complete the analysis.

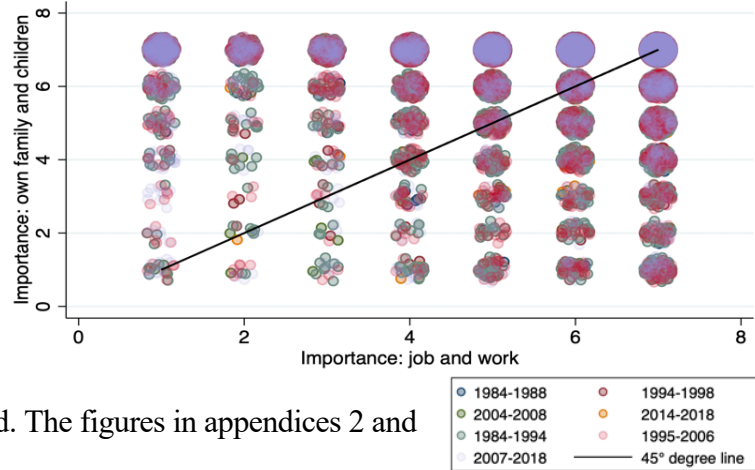
3.2.1 Benchmark analysis

The dataset from the GESIS - Leibniz-Institut für Sozialwissenschaften (2020) is used to create a benchmark the SOEP dataset can be held up to. Two variables are to be looked at. Firstly,

“Importance: own family and children”, and secondly,

“Importance: work and job”. To provide consistency within the analysis, figure 1 provides an overview of the scaling for seven different periods, some of which

Figure 1: Plot of each individual women on their importance job and work (x-axis) vs. importance: own family and children (y-axis).



are overlapping in the years observed. The figures in appendices 2 and

3 follow the same output structure as figure 1, but the periods evaluated differ to give a clearer indication of the development and consistency of numbers. All three figures include all answers of the 1,474 women questioned over the period 1984 - 2018. To simplify the overview, the different colors within the output symbolize the time frame the answer is given and all of the seven periods observed are included in figure 1. The more often the same answer is provided, the more present the color is in the figure. Most women continuously ranked the importance of own family and children 7/7, with classifying job and work to be important as well, on average 5/7 to 7/7. The majority of the answers given by women are slightly above the 45°-degree line, most of them in the area of 6/7 and 7/7 for both axes. Looking more closely at the distribution, the circles symbolize the heaviness of answers. Darker and permanent colors mean that many women gave the same answer to the questions asked. Next to the observation that most women rate employment and family as equally important, especially in the areas of the 7ths and 6ths, for both types of axes, a few women also highlight their importance on either one of them. The output concludes that all types of women, in general, seem to have the same preference structure and value job and family the same. Overall, it is observable that preferences for women continuously stay stable throughout the different periods

evaluated. Observed changes for other variables following the upcoming analysis are hence identifiable as opportunity changes. Therefore, further changes in the data structure for the upcoming outputs can be scrutinized as changes in preferences for women.

3.2.2 Regression analysis

Hypothesis one predicts that the monthly income of women in Germany with children is lower than the one of someone without children while controlling for other income influencing aspects. While previous studies observed that the maternity leave decreases income by 4.8% per year taken (Felfe 2012), observations for the different periods as well as further factors impacting wage loss are not included yet. Factors impacting the hourly monthly gross income of a woman are known, but the impact is not yet evaluated. To evaluate the significance of the individual factors introduced, a linear regression analysis, with categorical values as dummy variables, is executed. This type of analysis is chosen as it predicts the impact of the independent variables on the dependent one in the best possible way. An overview of the variables included has already be outlined in section 3.1.

The dependent variable, inflation-adjusted hourly income, is calculated by using the monthly gross income, divided by the average hour of work per month and multiplied by the inflation rate of the belonging year. All numbers are based on the averages per month for a whole year. Until 2002, the currency in Germany was DM (Deutsche Mark). Including inflation rates provides the option to only look at one currency, Euro, (EU-Info.Deutschland 2021) as well as to add an inflation rate to it, to compare the income of women over the last 35 years (Statistisches Bundesamt (Destatis) 2021). The dataset including all variables decrees 2,604 observations. To be able to make valid observations and construct expressive predictions for four time slots and make conclusions on opportunity developments, the significance of the variables for the analysis is evaluated. To start, a multiple regression analysis is done with the mentioned dependent and independent variables. The significance is evaluated based on $p < 0.05$ and the coefficient value resulted is used for further analysis and interpretation of the results. The information on women's

education is limiting the number of observations available, hence, their significance is assessed. As seen in the regression analysis in appendix 4, r-squared is not significantly influenced whether education variables are included or not ($r^2(\text{with_edu}) = 0.642$ and $r^2(\text{without_edu}) = 0.632$). By excluding the education variable, the significance as well as the overall outcome did not change. Furthermore, the dataset only includes seven observations for the 4th period (2014 - 2018). As including or excluding this period has no significant influence on the overall regression model, the 4th period is kept ($r^2(\text{with_edu}) = 0.641$ and $r^2(\text{without_edu}) = 0.631$). The evaluation on the significance of the education variable shows, including the education variable only limits the observations to be looked at and their interpretation output. Hence, the empirical model with all observations which is further used for this study includes 9,444 observations and all other mentioned variables listed in the beginning. Applying the linear regression model to the empirical data set, 64.5% (r^2) of the independent variables explain factors influencing inflated income per hour. While applying the assumptions for the multiple linear regression model, all are met except for the assumption of constant variance. Visual representations are found in appendix 5. To overcome this issue, the robust multiple linear regression is applied, which neglects the assumption of homoscedasticity to hold. The final regression holds all assumptions necessary. It is linear, normally distributed, has no correlated variables as well as no multicollinearity. Further information on this is provided in appendix 6.

3.2.3 Multinomial logistic regression

The second type of regression analysis concerns the development in the work environment for women over the period 1984 - 2018. For this purpose, the multinomial logistic regression model was used, as this type of regression analysis is commonly used to explain the relationship between nominal dependent variables, i.e., different categories of women, and one or more independent variables (Statistic Solutions 2021). During the previous analysis, the influence on inflation-adjusted income per hour has been observed, with the women categories as the independent variables. As some indications on wage changes for women and mothers are already observed

during the multiple linear regression a further dive deeper into the extent to which other employment factors have changed for women over time is done. Women's categories are used as dependent variables during the four multinomial logistic regressions, for each period one model, to observe how the opportunities for women changed over the years and also evaluate changes women with lengths in maternity leaves are experiencing. The multinomial logistic regression applied uses maximum likelihood estimations to evaluate the probability of categorical membership (UCLA: Statistical Consulting Group 2021). It does not have assumptions (normality, linearity and homoscedasticity) to hold on to (Starkweather and Moske 2011). H₂ predicts that opportunities for women with children have approached the ones of childless women over the last 35 years. The multinomial logistic regression was applied to the previously used dataset with 9,444 observations. The independent variables chosen are based on their significance ($p < 0.05$) from section 3.2.2. The likelihood ratio chi-square test, which compares the fit of the models with the complete set of predictors with the intercept-only model, is significant for all four regressions models. LR χ^2 model 1 (41)=285.43, model 2 (56)=400.55, model 3 (52)=833.16, model 4 (37)=425.52, $p < 0.05$. Hence, the models contain the full set of predictors and represent a significant improvement in fit relative to the intercept-only model. Furthermore, all models represent a 12.7% to 20.14% improvement in fit relative to the intercept-only model (Crowson 2021). All categories of the variables are included, as they proved to be significant during the multiple linear regression. The distinction in the analysis is done based on the women categories, with childless women (focused women) as the baseline for each model. Age and income are included as continuous variables. The other categorical variables include 'Type of working contract', 'Contract type' and 'Changes in job conditions'. The full output of the multinomial logistic regression is in appendix 7. This statistical analysis tool provides the possibility to receive insights on changes between the women categories. Variations in the output are identified as opportunity changes, as the outcome during the benchmark analysis in section 3.2.1 proved preference continuity for women in family and work-related matters.

4. Results

4.1 Linear regression analysis results

Evaluating the influences on income per hour for women and the impact of childbirth, some developments related to income over the last 35 years are observed. To evaluate if hypothesis one can be supported, the multiple linear regression equation described in part 3.2.2 provides an impression on the impact the significant independent variables have on the dependent variable, inflation-adjusted income per hour worked. For $p < 0.05$, at a 95% confidence level, table 2 provides an overview of the significant variables. The significant variables indicate how much the dependent variable increases or decreases given a one-unit shift in the independent variable (Frost 2021). The coefficient value of the significant variables is used for interpretation purposes. Focused women are used as a baseline and further, 60 interaction variables between women categories and all other dependent variables are conducted as well as 42 interaction

Table 2: Multiple linear regression model: inflated income per hour and factors influencing it at $p < 0.05$.

Mean dependent var	13.059	SD dependent var	6.679
R-squared	0.645	Number of obs	9,444
F-test	1007.216	Prob > F	0.000
Prob > Chi2	0.1792	VIF	1.73

Multiple linear regression (robust)		
infl_earn_per_hour	Coef.	t-value
age	.625	38.13***
period_1 (1984-1988)	-6.259	-46.25***
period_2 (1994-1998)	-4.311	-36.73***
period_3 (2004-2008)	-3.118	-26.72***
no_home_office	.801	6.03***
Type_of_working_condition		
part_time_employment	-2.396	-13.93***
vocational_training	-7.402	-53.16***
marginal_employment	-4.018	-23.76***
Contract_type		
temporary_job	-1.237	-9.87***
self_employed	-1.281	-3.13***
changes_in_job_conditions		
returned_to_past_employer	-.922	-2.56**
new_position_different_company	.012	0.06
taken_on_by_company	1.525	2.58**
changed_job_within_company	2.821	5.70**
new_job_self_employed	1.001	1.46
continued_position	-.571	-4.49***
Category_women_observed		
Intended	-.529	-2.45**
Unexperienced	-.692	-1.43
Explorer	-1.822	-4.03***
Experienced	-3.685	-7.70***
kids_total	.322	2.98***
Interaction variables (sign. $p < .05$)		
Experienced x period_3 (2004-2008)	5.959728	2.11**
Experienced x period_2 (1994-1998)	6.376566	2.20**
Focused x vocational_training	-2.849116	-5.07***
Focused x marginal_employment	-3.197606	-2.29**
Unexperienced x vocational_training	-7.2027	-2.60***
Unexperienced x marginal_employment	-6.06717	-2.68***
Explorer x part_time_employment	4.132343	2.18**
Focused x temporary_job	1.251672	2.10**
Experienced x temporary_job	2.353752	2.07**
Focused x returned_to_past_employer	3.113621	2.02**
Focused x taken_on_by_company	6.982587	3.62***
Experienced x new_position_different_company	-4.883478	-2.09**
Constant	2.94	6.17***

*** $p < .01$, ** $p < .05$, * $p < .1$

variables between the time periods observed as well as other dependent variables. The significant ones for the women categories are included in table 2; the time conducted interaction variables, with mainly significant ones at $p < 0.05$ are not further highlighted as their significance supports usability for further interpretation. Appendix 8 highlights all interaction variables.

Starting with the impact of the women's categories on inflated earnings per hour, focused women are having on average the highest income. Further to this, intended women, women that are expecting children within the time frame observed, are only anticipating an income that is marginally lower than focused women (-0.53€). Hence, it can be concluded that independent of women wanting to have children or not, hourly wages are very similar. The moment a child is born, women's pay gets influenced significantly and decreases per year of maternity leave. Experienced women are on average earning more than 3.6€ less than focused women. Grimshaw and Rubery (2015) as well as Kühhirt and Ludwig (2012) made similar findings and included that the percentual wage loss for mothers is around 4.8% per maternity leave year. Mothers tend to change their jobs in a favorable way to combine work and family and substitute income with non-wage jobs aspects (Felfe 2012). While having a child certainly has an impact on wages earned, women returning into employment within the first year after giving birth have no wage loss compared to women extending their maternity leave time. Felfe (2012) mentions that the wage loss in the first year is not too significant and hence can be caught up on very quickly.

After focusing on the women categories first, the periods included are looked at more carefully. Women, in general, experienced an increase in their hourly wages throughout the last 35 years. While in the first period, 1984 - 1988, the hourly wage was 6€ below the last period (2014 - 2018), it increased in time and during the third period 2004 – 2008 the income difference marginalized to a difference of -3.1€ to 2018. Furthermore, the age of women, in general, is impacting income as well. The older one gets, the more one earns. Every year, the average income of a woman increases by 0.63€ on an hourly wage basis. Further investigations on this variable and

how they impact the different women categories are given by looking at the multinomial logistic regression analysis.

Evaluating the impact of ‘type of working condition’, ‘contract type’ as well as ‘changes in job conditions’, working conditions have the most significant impact on women’s income. While no significant observations between the types of working conditions and the woman’s category were found, all variables included are found to be significant for all types of women. Independent of everything else, women with full-time positions earn the most. Women with part-time contracts earn 2.4€ less and women in marginal employment positions on average acquire 4€ less in their salaries on an hourly basis. Lastly, the ones pursuing vocational training earn the least of all working condition types, 7.4€ less than full-time employed women. While in general, the interaction outcomes for women and the type of working condition do not give interesting insights, one does. Unexperienced mothers with marginal or vocational training earn up to 7€ less than intended women with full-time positions. While previous literature already pointed out that mothers are less likely to invest time in formal education or training (Gangl and Ziefle 2009), financially this statement is further supported as focused women only experience a loss of -2.8€ per hour compared to -7€ mentioned above for mothers, when carrying out marginal jobs or vocational positions.

The next impact included is the type of contract a woman has. Throughout the last 35 years, women having permanent jobs earn the most, while women with temporary jobs and self-employed jobs earn less. An observation made by including the interaction variables is that women with longer breaks and temporary jobs again earn more (2.35€) than women with temporary jobs and no kids. This assumption leads to the conclusion, that employers pay temporary jobs for experienced mothers very well, better than any other type of women, and through women taken the opportunity of temporary jobs, the motherhood wage gaps can be diminished a bit. Additionally, the opportunity for an employee to work from home harms the income by 0.8€.

Lastly, changes in job conditions were included in the linear regression analysis. New positions are observed to have positive effects on the wage of women while returns to old employers or the decision to stay within a company for too long without switching positions are negatively impacted. The interaction variable experienced mother and new position with a different employer further provides the insight, that new jobs are not beneficial to all types of women. Changing the job and moving to a different company sets experienced mothers back in their wage by further 5€. Felfe (2012) also supports the observation by highlighting that a change in employer experience generates an even greater drop for more than 24.3% in earnings. Staying with the old employers hence is seen as insurance against income loss.

To provide an example (table 3), two fictitious hourly wage samples are applied to the outcome of the multiple linear regression. Focused and intended/explorer women are starting to work at the same age, with a permanent, full-time contract in the beginning. After four periods of work and one child for the explorer mother, the outcome, in the end, indicates clearly that focused women have a higher hourly wage compared to a woman with maternity leave experience.

Table 3: Example of two fictitious hourly wage samples

	Period 1 – no kids yet – the same age – 1988	Period 2 – kids for intended women - 1998	Period 3 – explorer. Women returns back to work (part-time, permanent contract and to old employer) – 2008	Period 4 - all women stay in the same positions – 2018
Focused women	10€	17.63€	25.07€	33.87€
Intended /Explorer women	9.47€	Child born in 1995 –2 years maternity break	19.93€	28.73€

Overall, it can be concluded that throughout the years, a slight increase in wages for women is observable. While a general increase is detectable, a decrease in the income gap between childless women and mothers is not noticeable. Further factors, followed by the years of maternity leave taken by mothers, are impacting the wage of women. Next, to evaluate the extent and changes in work conditions for women over time, the multinomial logistic regression is applied.

4.2 Multinomial logistic regression results

Over the periods analyzed, various opportunities were observed for women and the impact children have on the employment status of their mothers. The categories of women are used as dependent variables to further evaluate the impact children have on their mother's employment opportunities, next to the wage gap that

already has been discussed.

Table 4 presents an overview

of all significant variables with

the interpretation possibility of

the multinomial logistic

regression analysis and

highlights their coefficient

value. The coefficient values

are to be interpreted the

following way: for each unit

increase or decrease of the

coefficient value, the log-odds

of a case falling into a certain

women category, relative to the

base category, focused women,

are predicted to increase or

decrease by the coefficient

value (Crowson 2021).

Further, in table 4, the standard

error, in brackets behind the

Table 4: Summary outcome of four multinomial logistic regression analysis for variables with $*p < 0.05$

		Model 1	Model 2	Model 3	Model 4
	Variables	1984-1988	1994-1998	2004-2008	2014-2018
	Prob > chi 2	0.0000	0.0000	0.0000	0.0000
	Pseudo R2	0.1270	0.1418	0.2014	0.1811
	Total no. of observations: n	1,332	1,744	2,423	3,945
1	Intended women (<i>Women working, shortly before becoming mothers</i>)				
	Age				0.26 (0.03)
	Part-time employment		0.68 (0.28)		
	Marginal employment			-0.69 (0.28)	-1.39 (0.35)
	Temporary job	-0.48 (0.16)	-0.37 (0.16)	-0.44 (0.18)	-0.41 (0.18)
	Continue position from last year – same hours etc.			-0.46 (0.17)	
2	Focused (<i>Women without children</i>)				
3	Unexperienced (<i>Women returning to work one year after the birth of their first child</i>)				
	Age	0.16 (0.07)		0.46 (0.05)	0.60 (0.14)
	Part-time employment	3.16 (0.47)		2.50 (0.32)	2.73 (0.84)
	Vocational training		5.58 (1.89)	4.05 (0.90)	
	Marginal employment	2.26 (0.85)	3.39 (1.24)	2.97 (0.44)	
	Temporary job	-2.38 (0.96)	-3.85 (1.59)	-2.03 (0.63)	
	Taken on by the company				2.84 (1.33)
	Continue position from last year – same hours etc.			-0.95 (0.47)	
4	Explorer (<i>Women returning to work two years after the birth of the first child</i>)				
	Age		0.41 (0.14)	0.35 (0.04)	0.54 (0.09)
	Part-time employment		4.99 (1.13)	2.21 (0.31)	2.17 (0.58)
	Vocational training			1.78 (0.97)	
	Marginal employment		4.43 (1.33)	1.98 (0.47)	
	Temporary job			-1.70 (0.52)	
	Continue position from last year – same hours etc.		-4.19 (1.63)		
	Inflated earning per hour				-0.11(0.05)
5	Experienced (<i>Women returning to work three or more years after the birth of the first child</i>)				
	Age		0.83 (0.22)	0.41 (0.04)	0.53 (0.12)
	Part-time employment		5.56 (1.47)	2.23 (0.28)	1.84 (0.79)
	Vocational training			1.10 (0.80)	
	Marginal employment			1.66 (0.41)	
	Temporary job			-1.56 (0.42)	
	Continue position from last year – same hours etc.				-3.07 (0.70)
	Inflated earning per hour			-0.13 (0.03)	-0.20 (0.07)

** $p < 0.05$

coefficient value, is given for the interpretation of significance.

Throughout the periods, the age of women stands out to be a significant variable. All four models show focused women on average to be more likely to be younger compared to the ones having children or intended women, i.e. (Period 1: 2-3, $b = 0.16$) (Period 2: 2-4, $b = 0.41$; 2-5, $b = 0.83$).¹ Next to this observation, inflation-adjusted earnings per hour are also likely to be lower for women with longer maternity leave periods. Focusing on these two observations, focused women have better opportunities to concentrate on their career to achieve higher wages compared to mothers. Hence, they can achieve better wages at a younger age compared to mothers. One possible explanation for this outcome is that mothers rather decide to work in smaller firms with less employers and therefore, receive less income. They tend to try to balance family and work (Avellar and Smock 2003). Felfe (2012) supports this assumption by arguing, that women have significant career interruptions when getting children which depreciates their human capital and lead to significant decreases in wages. While looking at the four different models for each period, no changes throughout the 35 years are observed.

Next, evaluating the variable working conditions for women, mothers tend to have a greater likelihood to have part-time job positions, marginal employment positions or are more likely to keep up with their vocational training. There are no opportunity changes to be observed over the four periods and therefore, it can be concluded that within all periods mothers tend to step back from full-time positions. Previous observations support this finding as it concludes that mothers are trading their earnings for working conditions to be a good caregiver to their child and family while re-entering the working market (Gangl and Ziefle 2009; Kühhirt and Ludwig 2012). Next to that, other observations by Correll, Benard, and Paik (2007) conclude, that stereotyping assumptions like mothers are emotional or irrational or also discriminations are probably further hindering mothers to go back into their old full-time positions. Based on this and the fact that the German government

¹ Explanation: This extract shows the comparison of group 2 women (focused women) with group 3 women (unexperienced mothers)

only provides definite childcare support for children three years and older (Gangl and Ziefle 2009), there is not enough support to offer mothers the opportunity of full-time employed position to be reflected in the statistics. Concluding, at the moment, the potential for mothers to return to work quickly and also take on full-time positions is not given and there is no opportunity development to be observed over the last 35 years.

However, for intended women, a trend in the two most recent periods is observed when looking at the marginal employment opportunities. Women with the intention to have children at some point seem to have developed a focus on part-time employment positions. They do not only look for more constant job opportunities, but also are less likely to accept temporary jobs. For mothers, a rather similar observation is made, as they also prefer a stable job and are less likely to take temporary jobs.

The last category of variables included in the multinomial regression model are the changes in job conditions. With only a few significant dummy variables, the outcome is that mothers returning to work are less likely to return to the exact same position they had before their pregnancy (Period 2: 2-4, $b = -4.19$) (Period 3: 2-3, $b = -0.95$) (Period 4: 2-5, $b = -3.07$). Gangl and Ziefle (2009) made the observations that the return to the old employer for mothers is accounted to be less stressful and offers a predictable situation. This outcome is supported by the implication that in Germany, women cannot lose their jobs during maternity leave, as this is being regulated by law (Kleven et al. 2019). Considering the outcome of the analysis and the one of previous literature, an integration of the two would conclude that mothers return to old employers after their maternity leaves, but with adjusted working hours (more part-time positions). Further graphical representations of the multinomial logistic regression model are in appendixes 9-13.

While the purpose of this analysis was to observe if women's opportunities over the periods have changed, the concept of intergenerational fairness is incorporated. Intergenerational fairness is defined as a lifestyle status, which each generation has. Part of this lifestyle status is that the elderly

generation wants their children and offspring, the next generation, to “prosper in at least as favorable conditions as [they have] experienced” (Puaschunder 2020, 9). As mentioned during the analysis, concrete opportunity improvements are not observable. With no work-related opportunity improvements as well as a stable motherhood wage gap over the period 1984 – 2018, all generations face the same conditions. Hence, the concept of intergenerational fairness intensifies the statement that improvement in work conditions or a decrease in the motherhood wage gap is not detected.

5. Limitations and further research opportunities

The outlook of this work project is due to the time limit as well as based on the dataset available in its research restricted and further research suggestions are identified. First of all, while the SOEP dataset (2019) includes much information on the research area of interest, it is lacking consistency in the questions that are constantly being asked for a longer period to be able to observe significant changes. The variables to evaluate were rather limited, as some points of interest were not covered by questions throughout the period from 1985 onwards. Hence, the variables used in the multiple linear regression for example only cover 64.5% of the factors that influence earning per hour. For example, including questions on the occupational area or industry sector women are employed in would be beneficial. The missing data made it impossible to evaluate an even broader area of expertise and implement and evaluate further factors of opportunity changes. Furthermore, mothers with adopted children are completely excluded from the research, as they weren't mentioned in the questionnaires at all. Observing their impact might have established interesting insights as well. Furthermore, the data also lacks continuity of questions being answered by participants. As highlighted during the literature review, the impact of a women's graduate degree would have been interesting to include but was not to keep a larger number of observations. Furthermore, new questions within the yearly questionnaire were introduced after 2010, and old questions were replaced. This step led to inconsistency of data quality and further led to leave out variables of interest. Furthermore, some questions have not been answered by women to a sufficient extent,

which made it unable to include many more variables. The limitations mentioned implement that the variables available for the analysis done were limited. When looking for data on women and motherhood in general, limited research has been done up until now. Criado-Perez (2020) further points out, that research on employment and earnings in the past was rather focused on men. Hence, the lack of data limits the current research but offers the opportunity for further research. With the research on the gender pay gap, looking at fathers and them taking time off with their newborns can enlarge the current research. Evaluating if fathers are also affected by taking time off work can enhance the work and provide further insides into whether the motherhood wage gap is a general problem or gender specific. Limited resources and time unfortunately made it unable to evaluate this. To complete this research, the current analysis done should be completed by including further variables like education, but also family statuses like marriage, divorce, or single women and mothers. The impact of partners, fathers, and families, in general, might elevate interesting insights.

6. Discussion, implementation, and conclusion

With a lot of discussion on gender equality and opportunities for mothers going on, the initial expectation with regards to the research done was that mothers today have better opportunities in the workplace environment compared to mothers 35 years ago. Avellar and Smock (2003) predict that women's labor patterns are becoming more similar (using US statistics) and mothers get closer to the ones of women without children. They work longer into their pregnancy and start to work earlier afterward. Based on this prediction and the general idea that a wage gap reduction led to similar possibilities for all types of women, the opportunity distinction between women has not diminished. While people are aware of the motherhood wage penalty and its suffering, ways to counter the gap are not found yet. Governments and companies are working on sustainable balances between economic aims of female participation in paid work and social aims of providing a fair distribution of income (Gangl and Ziefle 2009), but there is still the lack of visible results as proven by the analysis done on this report.

With previous literature observing the impact of the motherhood wage gap and the diminishment of regulations, this work project focused on answering the research questions: Comparing women in workplace environments, how has the motherhood wage gap evolved for women returning to labor after childbirth over the last 35 years? Various kinds of analyses and evaluations on impacts of working conditions, contract types, income, age, and employment opportunities were done.

After analyzing all data available, H_1 can be considered to be supported. The hypothesis states that the monthly income of women in Germany with children is lower than for women without children while controlling for other income influencing aspects. With all variables being equal and women and mothers having the same contract type or working schedule, it is proven that mothers earn less. While focused women and intended women earn almost the same, per maternity leave year taken, the wage of a mother decreases continuously. Furthermore, the second hypothesis, H_2 , predicts that opportunities for women with children have approached the ones of childless women over the last 35 years. This hypothesis is failed to be supported. Over the last 35 years, improvements in employment opportunities for women were not observed and hence, an approach in closing of the motherhood wage gap cannot be sustained.

With one hypothesis being supported and one failed to be rejected, some general conclusions with implementational aspects are identified. Next to the outcome that women with long maternity leave breaks earn the least, they benefit when they take temporary jobs. While mothers tend to step back from full-time jobs, as they trade earnings for better suitable working conditions to manage work and family simultaneously (Gangl and Ziefle 2009; Kühhirt and Ludwig 2012) temporary jobs offer them the opportunity to slightly decrease the motherhood wage gap. Furthermore, taking a new job, in general, is of an advantage to the hourly income earned for women, but not for experienced mothers. They receive on average 5€ less when changing employer to start a new job. Finally, combining the outputs of both analyses made, focused women achieve

higher wages at an earlier age than mothers. The breaks taken by women when giving birth hinder women to earn the same as non-mothers. This assumption holds for all employment aspects included in the previous analysis. The only exception given is that when focused women pursue vocational training or marginally employed jobs, they earn less than mothers and women intended to be mothers.

Concluding, the answer to the research question is that the motherhood pay gap still exists with slight improvement observable over the last 35 years. Women's wages have increased over the last 35 years, while other employment opportunities stagnated with no opportunity potential to be observed. While women without any children are to be the highest-paid ones, women with the intention of having children are observed to concentrate on their jobs at an earlier age. Presumably, women are aware of the motherhood wage gap. Overall, the age of first-time mothers is steadily increasing as well as more women remain childless (Kreyenfeld and Konietzka 2017; World Bank Group 2021). Mothers are facing great difficulties with stereotypes and intolerance and receive less support from either the government or most employers. To counteract this, clarifications on the motherhood wage gap need to be more spread out and governments should consider introducing regulations, for employers but also in the social sector. Day-care facilities for younger children should not be optional but rather be provided for everyone of interest. One concrete suggestion would be that while changing jobs for women in general are of financial advantage, they are not for mothers with more than three years of maternity break. An implication by the government hence could be, that there are limitations to the information mothers and women need to provide to companies. Restricting these documentations to past jobs, independent of when they have ended, could help experienced mothers to have the same chances of getting a new job similar to all other types of women. Conclusively, over the last 35 years, no great development in closing the motherhood pay gap is recognized. The longer the maternity leave, the fewer potentials in career opportunities, financially or others, are observed.

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8. Appendix

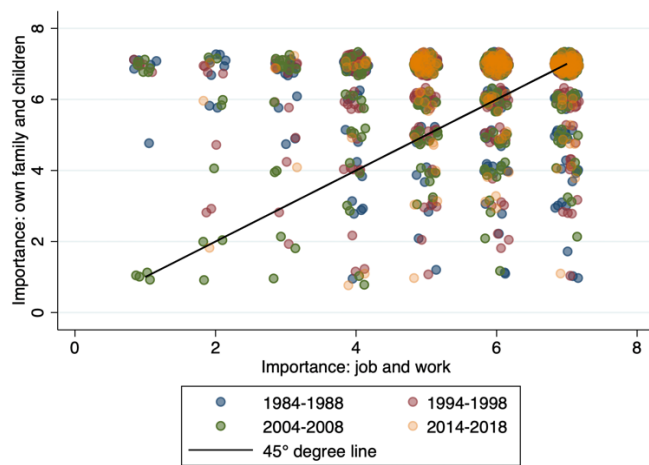
8.1 Appendix 1

Variable name	Categorial value	Internal name used	Meaning
Age		Age	Age of individual when questioned
Agewhenfirstchild		Agewhenfirstchild	Age of mother when the first child was born
Time_slot_1		Period 1	period 1984 - 1988
Time_slot_2		Period 2	period 1994 - 1998
Time_slot_3		Period 3	period 2004 - 2008
Time_slot_4		Period 4	period 2014 - 2018
Homeoffice		Home office	Information on whether it is possible to work from home
Type of working condition		Type of working condition	Type of working condition
	1	Full-time employment	Full-time employment
	2	Part-time employment	Part-time employment
	3	Vocational training	Vocational training
	4	Marginal employment	Marginal employment
Contract type		Contract type	Contract type
	1	Permanent job	Permanent job
	2	Temporary job	Temporary job
	3	Self-employed	Self-employed
Changes in job condition		Changes in job condition	Changes in job condition
	1	First job	First job
	2	Returned to past employer	Returned to past employer
	3	New position, different employer	New position, different employer
	4	Taken on by a company	Taken on by a company
	5	Changed job within a company	Changed job within a company
	6	New job self-employed	New job self-employed
	7	Continued position	Continued position
Category_women		Category_women	Women subdivided into different types based on children and their re-start of employment
	1	Intended women	Women working, shortly before becoming mothers

	2	Focused women	Women working, not having children, or getting any within the observed time frame
	3	Unexperienced women	Women return to employment within one year after having their first child
	4	Explorer women	Women return to employment within two years after having their first child
	5	Experienced women	Women return into employment within three or more years after having their first child
Education degree		Type of school degree completed	Type of school degree completed
	Edu 1	Lowest level	Hauptschule / Certificate of secondary education (lowest level of educational degree)
	Edu 2	Middle level	Realschule / General certificate of secondary education (middle level of educational degree)
	Edu 3	Highest level	Fachabi/Abitur / Final certificate of secondary education (highest degree and qualification for university)
	Edu 4	Different degree	anderer Abschluss / different degree
	Edu 5	No degree	Kein Abschluss / no degree
Infl_earn_per_hour		Inflated income	The average income per hour taken into consideration inflation rates per year
Kidstotal		Total no. of kids	Total no. of kids during the period of questionnaires

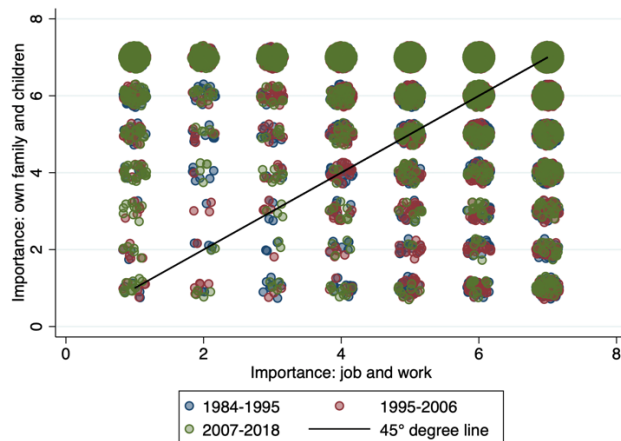
Appendix 1: Variable definition and meaning for regression analysis Source: Sozio-oekonomisches Panel (SOEP), Version 35, Daten der Jahre 1984-2018 (SOEP-Core v35). 2019. DOI: 10.5684/soep-core.v35

8.2 Appendix 2



Appendix 2: Plot of each women on their importance job and work (x-axis) vs. importance: own family and children (y-axis). Importance is scaled from 1 to 7, being 7 the most important. Answers were divided into four different time periods. Source: GESIS - Leibniz-Institut für Sozialwissenschaften (2020). Allgemeine Bevölkerungsumfrage der Sozialwissenschaften ALLBUS - Kumulation 1980-2018. GESIS Datenarchiv, Köln. ZA5274 Datenfile Version 1.0.0, <https://doi.org/10.4232/1.13395>.

8.3 Appendix 3



Appendix 3: Plot of each women on their importance job and work (x-axis) vs. importance: own family and children (y-axis). Importance is scaled from 1 to 7, being 7 the most important. Answers were divided into three different time periods. Source: GESIS - Leibniz-Institut für Sozialwissenschaften (2020). Allgemeine Bevölkerungsumfrage der Sozialwissenschaften ALLBUS - Kumulation 1980-2018. GESIS Datenarchiv, Köln. ZA5274 Datenfile Version 1.0.0, <https://doi.org/10.4232/1.13395>.

8.4 Appendix 4

Mean dependent var	12.754	SD dependent var	6.104
R-squared	0.642	Number of obs	2,604
F-test	184.980	Prob > F	0.000
Linear regression (robust) 4 time periods incl. education			
infl_earn_per_hour	Coef.	t-value	
age	.637	25.30***	
period_1 (1984-1988)	-5.847	-3.50***	
period_2 (1994-1998)	-4.865	-2.91***	
period_3 (2004-2008)	-2.83	-1.70*	
no_home_office	-.318	-1.01	
Type_of_working_condition			
part_time_employment	-1.938	-6.98***	
vocational_training	-5.442	-19.66***	
marginal_employment	-4.228	-11.33***	
Contract_type			
temporary_job	-1.408	-6.57***	
self_employed	-.814	-1.30	
changes_in_job_conditions			
returned_to_past_employer	-1.291	-1.92*	
new_position_different_company	.655	1.17	
taken_on_by_company	1.249	1.12	
changed_job_within_company	2.466	3.42***	
new_job_self_employed	.697	0.79	
continued_position	-.94	-2.02**	
Category_women_observed			
Intended	.145	0.49	
Unexperienced	1.167	1.96**	
Explorer	-.616	-0.95	
Experienced	-4.115	-6.57***	
kids_total	.059	0.43	
Women_level_education			
lowest_level	-1.571	-5.84***	
middle_level	-.651	-2.68***	
highest_level	.233	0.79	
different_degree	-1.386	-3.81***	
Constant	5.318	2.87***	

*** $p < .01$, ** $p < .05$, * $p < .1$

Mean dependent var	12.754	SD dependent var	6.104
R-squared	0.632	Number of obs	2,604
F-test	211.315	Prob > F	0.000

Linear regression (robust) 4 time periods excl. education

infl_earn_per_hour	Coef.	t-value
age	.676	0***
period_1 (1984-1988)	-5.865	.001***
period_2 (1994-1998)	-4.826	.004***
period_3 (2004-2008)	-2.783	.099*
no_home_office	-.349	.273
Type_of_working_condition		
part_time_employment	-1.905	0***
vocational_training	-5.415	0***
marginal_employment	-3.944	0***
Contract_type		
temporary_job	-1.3	0***
self_employed	-.605	.339
changes_in_job_conditions		
returned_to_past_employer	-1.5	.027**
new_position_different_company	.53	.347
taken_on_by_company	1.378	.221
changed_job_within_company	2.277	.002***
new_job_self_employed	.334	.707
continued_position	-1.168	.013**
Category_women_observed		
Intended	-.061	.839
Unexperienced	.883	.142
Explorer	-1.161	.076*
Experienced	-4.881	0***
kids_total	.148	.286
Constant	3.924	.035**

*** $p < .01$, ** $p < .05$, * $p < .1$

Mean dependent var	12.742	SD dependent var	6.098
R-squared	0.641	Number of obs	2,599
F-test	191.539	Prob > F	0.000

Linear regression (robust) 3 time periods incl. education

infl_earn_per_hour	Coef.	t-value
age	.638	25.32***
period_1 (1984- 1988)	-3.02	-13.17***
period_2 (1994- 1998)	-2.032	-8.29***
no_home_office	-.296	-0.94
Type_of_working_condition		
part_time_employment	-1.937	-6.97***
vocational_training	-5.434	-19.60***
marginal_employment	-4.223	-11.32***
Contract_type		
temporary_job	-1.397	-6.51***
self-employed	-.807	-1.29
changes_in_job_conditions		
returned_to_past_employer	-1.269	-1.88*
new_position_different_company	.677	1.21
taken_on_by_company	1.272	1.14
changed_job_within_company	2.489	3.44***
new_job_self-employed	.717	0.81
continued_position	-.916	-1.95*
Category_women_observed		
Intended	.146	0.49
Unexperienced	1.166	1.96*
Explorer	-.618	-0.95
Experienced	-4.121	-6.57***
kids_total	.06	0.43
Women_level_education		
lowest_level	-1.562	-5.80***
middle_level	-.65	-2.68***
highest_level	.227	0.76
different_degree	-1.387	-3.82***
Constant	2.39	2.37**

*** $p < .01$, ** $p < .05$, * $p < .1$

Mean dependent var	12.742	SD dependent var	6.098
R-squared	0.631	Number of obs	2,599
F-test	220.683	Prob > F	0.000

Linear regression (robust) 3 time periods excl. education

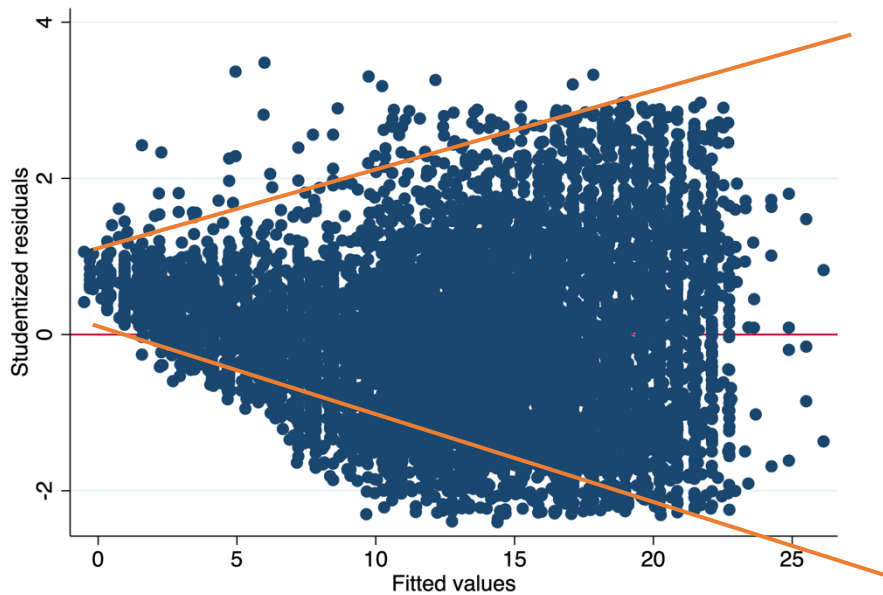
infl_earn_per_hour	Coef.	t-value
age	.676	27.35***
period_1 (1984- 1988)	-3.082	-13.44***
period_2 (1994- 1998)	-2.036	-8.35***
no_home_office	-.317	-0.99
Type_of_working_condition		
part_time_employment	-1.904	-6.79***
vocational_training	-5.402	-19.54***
marginal_employment	-3.941	-10.55***
Contract_type		
temporary_job	-1.291	-6.02***
self_employed	-.601	-0.95
changes_in_job_conditions		
returned_to_past_employer	-1.485	-2.18**
new_position_different_company	.546	0.96
taken_on_by_company	1.394	1.24
changed_job_within_company	2.295	3.14***
new_job_self_employed	.35	0.39
continued_position	-1.15	-2.42**
Category_women_observed		
Intended	-.058	-0.19
Unexperienced	.882	1.47
Explorer	-1.162	-1.77*
Experienced	-4.884	-7.80***
kids_total	.148	1.07
Constant	1.034	1.04

*** $p < .01$, ** $p < .05$, * $p < .1$

Appendix 4: Regression models on significance for education variable and significance for the fourth period

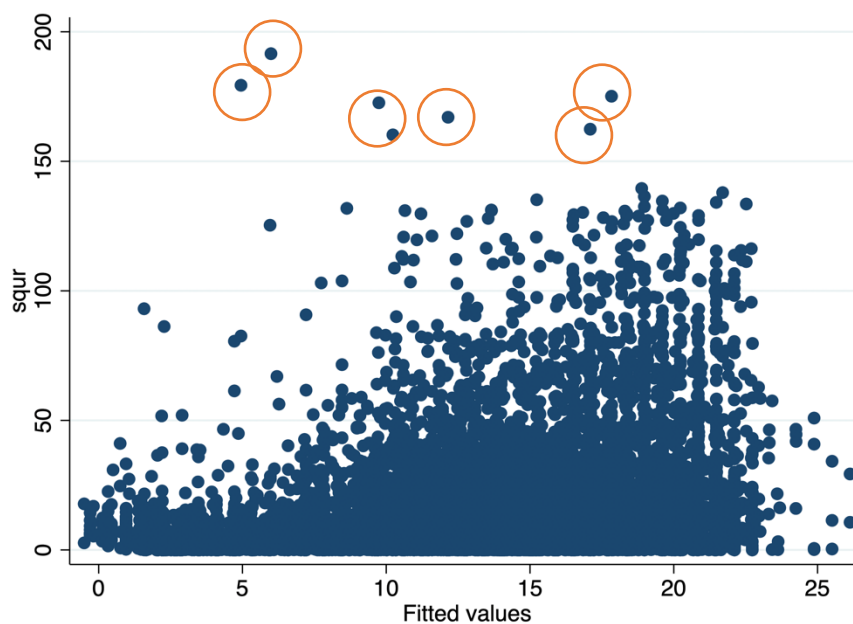
8.5 Appendix 5

Visualization of residuals to not be homogeneously distributed



The plot represents a graphical representation that the assumption that the residuals need to be homogeneously distributed does not hold. The condition on variances is not supported and it can be assumed that the modelling errors have all the same variance.

Visualization of outliers for multiple linear regression model



Visual representation of the violation of constant variance assumption by highlighting the great number of outliers in the graph.

8.6 Appendix 6

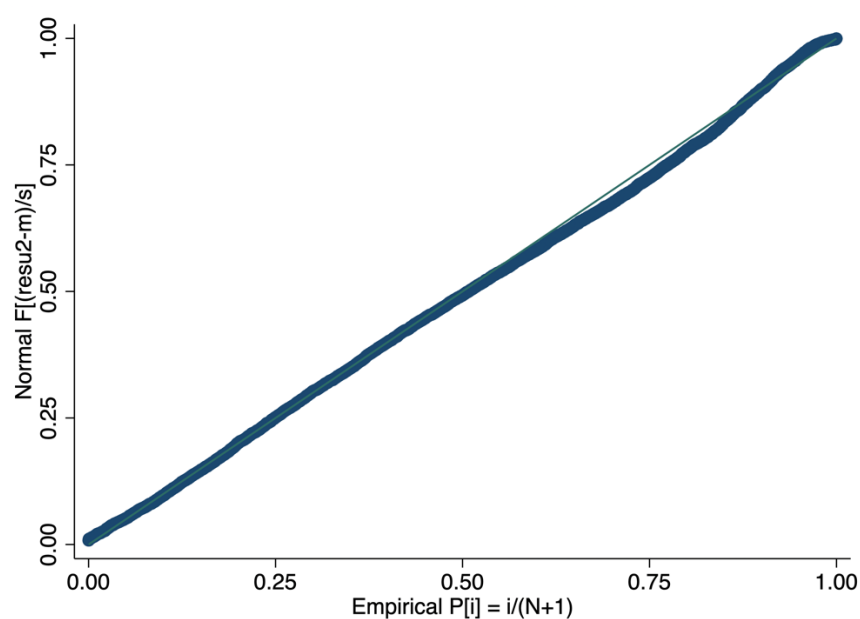
Normality test for multiple linear regression model – robust

Skewness and kurtosis tests for normality

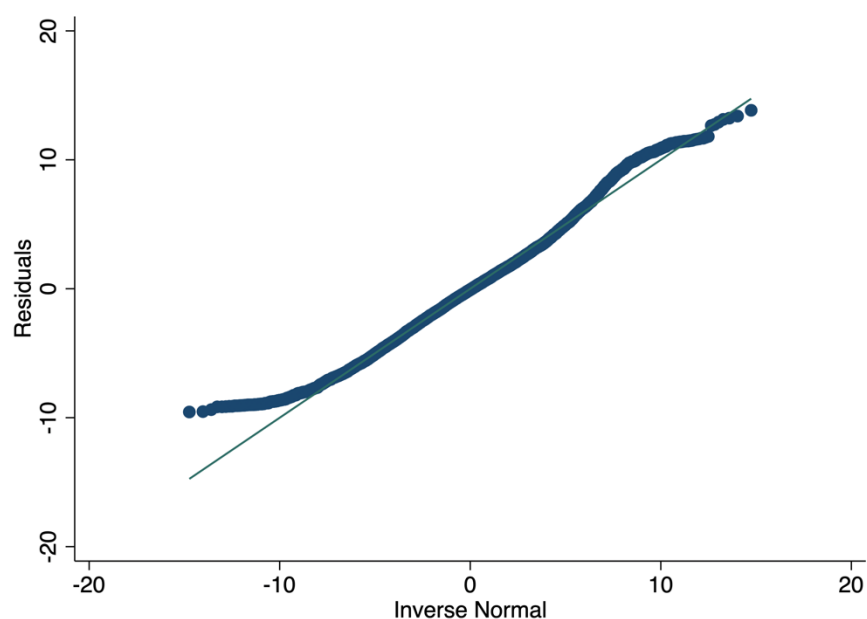
----- Joint test -----

Variable	Obs	Pr(skewness)	Pr(kurtosis)	Adj chi2(2)	Prob>chi2
Residuals for Multiple linear regression model	9,444	0.2386	0.157	4.82	0.1792

Visual representation of normality assumption

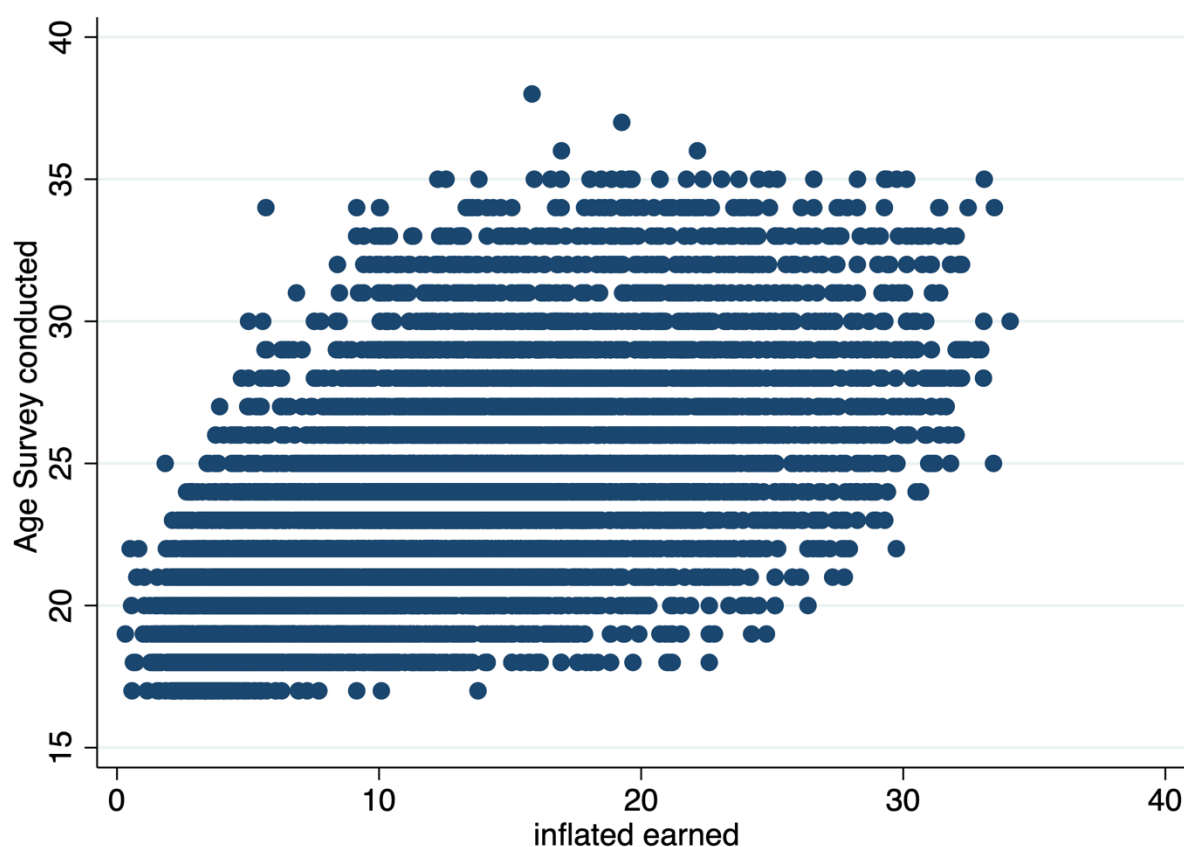


P-P plot using
unstandardized residuals
to test normality



Q-Q plot using
unstandardized residuals
to test normality

Linearity proof - dependent variable inflated earnings per hour and independent continuous variable age



Proof of no multicollinearity using Variance inflation factor (VIF)

	VIF	1/VIF
kids_total	4.870	0.205
Intended	4.440	0.225
vocational_training	2.250	0.444
temporary_job	1.870	0.535
continued_position	1.860	0.539
Age	1.770	0.565
Experienced	1.530	0.655
period_1	1.480	0.676
new_position_diffe~r	1.480	0.677
period_2	1.480	0.678
period_3	1.390	0.717
Unexperienced	1.380	0.725
Explorer	1.380	0.725
returned_to_past_e~r	1.360	0.737
marginal_employment	1.250	0.797
part_time_employment	1.200	0.835
no_home_office	1.100	0.906
changed_job_within~y	1.100	0.908
self_employed	1.080	0.930
taken_on_by_company	1.070	0.937
new_job_self_emplo~d	1.050	0.957
Mean VIF	1.730	

*VIF < 10.00

Correlation of coefficients

Correlation matrix of coefficients of regression model

	Age	period_1	period_2	period_3	no_hom~e	part_t~t	vocati~g	margin~t	tempor~b	self_e~d	return~r
Age	1.000										
period_1	0.152	1.000									
period_2	0.135	0.510	1.000								
period_3	-0.129	0.386	0.388	1.000							
no_hom~e	0.024	-0.169	0.070	-0.193	1.000						
part_t~t	0.057	0.127	0.102	0.032	-0.015	1.000					
vocati~g	0.414	0.100	0.001	-0.074	0.002	0.300	1.000				
margin~t	0.222	0.248	0.181	0.093	0.008	0.225	0.391	1.000			
tempor~b	0.079	0.155	0.143	0.050	0.013	-0.143	-0.645	-0.131	1.000		
self_e~d	0.030	-0.007	-0.003	-0.031	-0.015	-0.009	-0.036	-0.158	0.112	1.000	
return~r	-0.106	-0.080	-0.108	-0.068	-0.025	-0.048	0.001	-0.033	-0.035	-0.029	1.000
new_po~r	-0.080	0.004	0.032	0.001	-0.026	0.005	0.019	-0.056	-0.009	-0.035	0.192
taken~y	-0.034	0.014	0.022	0.016	0.005	-0.017	0.024	0.030	-0.004	-0.012	0.074
change~y	-0.129	-0.037	-0.086	-0.044	-0.010	-0.025	-0.028	-0.019	0.036	0.040	0.106
new_jo~d	-0.052	-0.084	-0.075	-0.014	-0.000	-0.022	-0.001	-0.013	-0.005	0.051	0.118
contin~n	-0.215	-0.214	-0.126	-0.023	-0.030	0.019	-0.015	-0.072	-0.025	0.102	0.322
Intended	-0.008	-0.037	-0.124	-0.006	0.032	0.013	0.032	0.066	0.029	-0.004	-0.043
Unexpe~d	-0.117	-0.052	-0.026	-0.028	0.001	-0.096	-0.079	-0.065	0.049	0.004	-0.075
Explorer	-0.157	0.014	-0.011	-0.011	0.002	-0.168	-0.099	-0.074	0.054	0.019	-0.230
Experi~d	-0.179	0.006	-0.030	-0.035	-0.008	-0.156	-0.083	-0.075	0.025	0.011	-0.268
kids_t~l	0.012	-0.108	-0.055	-0.030	-0.007	-0.013	-0.008	-0.030	-0.001	0.006	0.056
_cons	-0.809	-0.114	-0.231	0.112	-0.526	-0.098	-0.375	-0.249	-0.139	-0.049	0.035

	new_po~r	taken~y	change~y	new_jo~d	contin~n	Intended	Unexpe~d	Explorer	Experi~d	kids_t~l	_cons
new_po~r	1.000										
taken~y	0.106	1.000									
change~y	0.132	0.052	1.000								
new_jo~d	0.094	0.037	0.054	1.000							
contin~n	0.468	0.171	0.246	0.188	1.000						
Intended	-0.020	-0.000	-0.046	-0.012	-0.027	1.000					
Unexpe~d	-0.020	-0.027	-0.053	-0.033	0.004	0.344	1.000				
Explorer	-0.018	-0.026	-0.009	-0.070	-0.018	0.345	0.203	1.000			
Experi~d	-0.019	0.007	0.013	-0.092	0.008	0.373	0.219	0.291	1.000		
kids_t~l	0.014	0.000	0.045	0.025	0.030	-0.863	-0.361	-0.372	-0.407	1.000	
_cons	-0.050	-0.027	0.050	0.003	-0.020	-0.030	0.091	0.126	0.149	-0.001	1.000

8.7 Appendix 7

Number of obs	1,332	Log likelihood	-980.67593
LR chi2(41)	285.43	Pseudo R2	0.1270
Prob>Chi2	0.0000	Time-period	1984-1988

Multinomial logistic regression			
category_women_observed	Coef.	Std. Err.	z
1 intended women			
age	.0083073	.0217906	0.38
no_home_office	0		(omitted)
type_of_working_condition			
part_time_employment	.1661715	.2748742	0.60
vocational_training	-.2115941	.2153298	-0.98
marginal_employment	-.4137897	.4111574	-1.01
contract_type			
temporary_job	-.4840477	.160061	-3.02***
self_employed	1.090693	.7138639	1.53
changes_in_job_condition			
returned_to_past_employer			
new_position_different_company	-43.00626	9.32e+08	-0.00
taken_on_by_company	18.0634	481663.2	0.00
changed_job_within_company	-.9233915	481915.5	-0.00
new_job_self_employed	-.2263412	481558.3	-0.00
continued_position	-.7330978	481558.3	-0.00
infl_earn_per_hour	.0027142	.01859	0.15
_cons	.428992	481558.3	0.00
2 focused women (base outcome)			
3 unexperienced women			
age	.1662999	.0702524	2.37***
no_home_office	0		(omitted)
type_of_working_condition			
part_time_employment	3.164578	.4655033	6.80***
vocational_training	-36.63372	2472.419	-0.01
marginal_employment	2.258618	.8513382	2.65**
contract_type			
temporary_job	-2.383987	.9602038	-2.48**
self_employed	.2577371	1.708477	0.15
changes_in_job_condition			
returned_to_past_employer			
new_position_different_company	-50.21052	337984.4	-0.00
taken_on_by_company	-15.16532	341280.6	-0.00
changed_job_within_company	-31.78144	338206.8	-0.00
new_job_self_employed	-70.71144	338279.7	-0.00
continued_position	-54.28623	337984.4	-0.00
infl_earn_per_hour	.064983	.0491717	1.32
_cons	45.69907	337984.4	0.00
4 explorer women			
age	.3926021	.2182769	1.80
no_home_office	0		(omitted)
type_of_working_condition			
part_time_employment	1.817033	1.404734	1.29
vocational_training	-9.919467	1405.38	-0.01
marginal_employment	-14.48176	10466.4	-0.00
contract_type			
temporary_job	-17.34726	1461.894	-0.01
self_employed	-18.24728	11102.17	-0.00

changes_in_job_condition			
returned_to_past_employer			
new_position_different_company	-52.6854	337984.4	-0.00
taken_on_by_company	-44.27597	347774.7	-0.00
changed_job_within_company	-57.18435	353493.1	-0.00
new_job_self_employed	-74.05701	338672.5	-0.00
continued_position	-59.00826	337984.4	-0.00
infl_earn_per_hour	-.0210536	.1399482	-0.15
_cons	43.41112	337984.4	0.00
5 experienced women			
age	11.69437	668.2157	0.02
no_home_office	0		(omitted)
type_of_working_condition			
part_time_employment	6.895265	2509.024	0.00
vocational_training	-34.66695	8441.33	-0.00
marginal_employment	-22.43132	11779.04	-0.00
contract_type			
temporary_job	-27.75531	4100.276	-0.01
self_employed	-6.465516	82350.32	-0.00
changes_in_job_condition			
returned_to_past_employer			
new_position_different_company	15.16093	338193.1	0.00
taken_on_by_company	24.76162	372360.3	0.00
changed_job_within_company	65.17667	352659.1	0.00
new_job_self_employed	-31.05797	339977	-0.00
continued_position	-88.67211	338000.9	-0.00
infl_earn_per_hour	-14.2693	578.7579	-0.02
_cons	-146.074	338498.6	-0.00

*** $p < .01$, ** $p < .05$, * $p < .1$

Number of obs	1,744	Log likelihood	-1211.8252
LR chi2(56)	400.55	Pseudo R2	0.1418
Prob>Chi2	0.0000	Time-period	1994-1998

Multinomial logistic regression

category_women_observed	Coef.	Std. Err.	z
1 intended women			
age	-.0450778	.0260172	-1.73*
no_home_office	-.2222193	.116102	-1.91*
type_of_working_condition			
part_time_employment	.6760355	.2782666	2.43**
vocational_training	-.304657	.2056755	-1.48*
marginal_employment	-.5396713	.2841222	-1.90*
contract_type			
temporary_job	-.3744344	.1629791	-2.30**
self_employed	-.0011851	.530032	-0.00
changes_in_job_condition			
returned_to_past_employer	.3362814	.4847671	0.69
new_position_different_company	.1221795	.3337928	0.37
taken_on_by_company	-17.54746	6111.55	-0.00
changed_job_within_company	-.4900295	.4476239	-1.09
new_job_self_employed	19.9617	8228.39	-0.00
continued_position	.042749	.182399	0.23
infl_earn_per_hour	.0082536	.0162285	0.51
_cons	1.308587	.6040228	2.17**
2 focused women (base outcome)			
3 unexperienced women			
age	.1100008	.1614555	0.68
no_home_office	-.9071166	.8618762	-1.05
type_of_working_condition			
part_time_employment	2.280159	1.330682	1.71*
vocational_training	5.586038	1.888358	2.96***
marginal_employment	3.39698	1.242095	2.73***
contract_type			
temporary_job	-3.851259	1.589418	-2.42***
self_employed	-18.17452	9961.289	-0.00
changes_in_job_condition			
returned_to_past_employer	19.93184	3999.252	0.00
new_position_different_company	18.34339	3999.252	0.00
taken_on_by_company	-1.177663	58470.14	-0.00
changed_job_within_company	-.8875168	13289.58	-0.00
new_job_self_employed	18.43625	3999.252	0.00
continued_position	15.30676	3999.252	0.00
infl_earn_per_hour	.1511928	.1194417	1.27
_cons	-25.00379	3999.254	-0.01
4 explorer women			
age	.4132323	.138908	2.97***
no_home_office	-.4346858	.9419446	-0.46
type_of_working_condition			
part_time_employment	4.994941	1.128854	4.42***
vocational_training	-9.297116	1487.993	-0.01
marginal_employment	4.433496	1.335553	3.32***
contract_type			
temporary_job	-16.14221	1389.733	-0.01
self_employed	-18.53589	9630.833	-0.00

changes_in_job_condition			
returned_to_past_employer	1.779431	1.47314	1.21
new_position_different_company	-1.368936	1.462798	-0.94
taken_on_by_company	9.311609	44716.37	0.00
changed_job_within_company	-19.23229	8840.582	-0.00
new_job_self_employed	-24.74105	37031.47	-0.00
continued_position	-4.194244	1.630021	-2.57***
infl_earn_per_hour	.0985995	.1112187	0.89
_cons	-14.39833	3.765675	-3.85***
5 experienced women			
age	.8309886	.2187607	3.80***
no_home_office	13.3239	1167.356	0.01
type_of_working_condition			
part_time_employment	5.560889	1.467501	3.84***
vocational_training	-10.02035	978.736	-0.01
marginal_employment	3.289441	2.624115	1.25
contract_type			
temporary_job	.5520037	2.139669	0.26
self_employed	.902632	3.164824	0.29
changes_in_job_condition			
returned_to_past_employer	15.05891	2405.361	0.01
new_position_different_company	12.15163	2405.361	0.01
taken_on_by_company	10.97342	33033.15	0.00
changed_job_within_company	-2.57201	7661.362	-0.00
new_job_self_employed	-11.57249	26171.63	-0.00
continued_position	-6.999967	2479.635	-0.00
infl_earn_per_hour	-.0562094	.1508674	-0.37
_cons	-65.21456	3352.112	-0.02

*** $p < .01$, ** $p < .05$, * $p < .1$

Number of obs	2,423	Log likelihood	-1652.1987
LR chi2(52)	833.16	Pseudo R2	0.2014
Prob>Chi2	0.0000	Time-period	2004-2008

Multinomial logistic regression

category_women_observed	Coef.	Std. Err.	z
1 intended women			
age	.0320691	.0196754	1.63
no_home_office	0		(omitted)
type_of_working_condition			
part_time_employment	-.1895373	.2029436	-0.93
vocational_training	-.0827927	.2508585	-0.33
marginal_employment	-.6890754	.2874468	-2.40***
contract_type			
temporary_job	-.439743	.181639	-2.42***
self_employed	-.2029533	.4940729	-0.41
changes_in_job_condition			
returned_to_past_employer	-.7168987	.4372715	-1.64
new_position_different_company	-.3731328	.2451692	-1.52
taken_on_by_company	-1.769915	1.047731	-1.69*
changed_job_within_company	-.4039269	.4267502	-0.95
new_job_self_employed	-.6240137	1.181106	-0.53
continued_position	-.4567172	.1687455	-2.71***
infl_earn_per_hour	.0241269	.0131793	1.83*
_cons	-2.146707	.457748	-4.69***
2 focused women (base outcome)			
3 unexperienced women			
age	.4034563	.0461586	8.74***
no_home_office	0		(omitted)
type_of_working_condition			
part_time_employment	2.490474	.3207372	7.76***
vocational_training	4.051246	.8963173	4.52***
marginal_employment	2.967402	.440673	6.73***
contract_type			
temporary_job	-2.03448	.6286428	-3.24***
self_employed	-.110309	.6616851	-0.17
changes_in_job_condition			
returned_to_past_employer	.8559991	.5956863	1.44
new_position_different_company	-.4177175	.5507891	-0.76
taken_on_by_company	-13.67145	618.3176	-0.02
changed_job_within_company	-.779919	.7394486	-1.05
new_job_self_employed	-38.21735	3.05e+08	-0.00
continued_position	-.9479516	.4721527	-2.01**
infl_earn_per_hour	-.0113363	.0258411	-0.44
_cons	-14.62781	1.303581	-11.22***
4 explorer women			
age	.3523139	.0445662	7.91***
no_home_office	0		(omitted)
type_of_working_condition			
part_time_employment	2.208566	.3061094	7.21***
vocational_training	1.775929	.9640737	1.84**
marginal_employment	1.980184	.4654784	4.25***
contract_type			
temporary_job	-1.69818	.5151176	-3.30***
self_employed	-1.264249	.765557	-1.65*

changes_in_job_condition			
returned_to_past_employer	2.97015	.8025249	3.70***
new_position_different_company	.6798127	.827534	0.82
taken_on_by_company	1.944852	1.148064	1.69*
changed_job_within_company	-.9032564	1.294492	-0.70
new_job_self_employed	3.510324	1.261426	2.78***
continued_position	.2075042	.7593311	0.27
infl_earn_per_hour	-.0465728	.0268494	-1.73*
_cons	-13.42357	1.360862	-9.86***
5 experienced women			
age	.4072841	.0415131	9.81***
no_home_office	0		(omitted)
type_of_working_condition			
part_time_employment	2.228466	.2845952	7.83***
vocational_training	1.103944	.798553	1.38***
marginal_employment	1.657892	.411163	4.03***
contract_type			
temporary_job	-1.56422	.4195013	-3.73***
self_employed	-1.879229	.8358357	-2.25**
changes_in_job_condition			
returned_to_past_employer	1.734464	.5141083	3.37***
new_position_different_company	-.358774	.5350076	-0.67
taken_on_by_company	-13.04816	766.6077	-0.02
changed_job_within_company	-14.78291	523.5337	-0.03
new_job_self_employed	2.435454	1.105826	2.20**
continued_position	-1.068719	.4488921	-2.38*
infl_earn_per_hour	-.1346925	.0265861	-5.07***
_cons	-12.14388	1.129558	10.75***

*** $p < .01$, ** $p < .05$, * $p < .1$

Number of obs	3.945	Log likelihood	-968.61129
LR chi2(37)	428.52	Pseudo R2	0.1811
Prob>Chi2	0.0000	Time-period	2014-2018

Multinomial logistic regression

category_women_observed	Coef.	Std. Err.	z
1 intended women			
age	.2633474	.0306749	8.59***
no_home_office	-1.190245	.1582374	-7.52***
type_of_working_condition			
part_time_employment	-.150363	.2280361	-0.66
vocational_training	-.4215051	.3087712	-1.37
marginal_employment	-1.391	.350402	-3.97***
contract_type			
temporary_job	-.4099792	.1806248	-2.27**
self_employed	-.619.747		.
changes_in_job_condition			
returned_to_past_employer	-.695.4863		.
new_position_different_company	.0111481	.3565691	0.03
taken_on_by_company	-.2167236	.6485585	-0.33
changed_job_within_company	-.620.5588		.
new_job_self_employed			
continued_position	-.0833935	.2356029	-0.35
infl_earn_per_hour	-.0247119	.0154664	-1.60
_cons	-.6.14665	.7772898	-7.91***
2 focused women (base outcome)			
3 unexperienced women			
age	.595585	.1387841	4.29***
no_home_office	.2844906	1.028187	0.28
type_of_working_condition			
part_time_employment	2.729158	.8439093	3.23***
vocational_training	2.082867	1.434755	1.45
marginal_employment	1.093329	1.3146	0.83
contract_type			
temporary_job	-.6545237	.7200011	-0.91
self_employed	-.618.6967		.
changes_in_job_condition			
returned_to_past_employer	-.695.3192		.
new_position_different_company	-.619.4807		.
taken_on_by_company	2.842744	1.326577	2.14**
changed_job_within_company	-.619.5213		.
new_job_self_employed			
continued_position	-.373939	1.078706	-0.35
infl_earn_per_hour	-.0831218	.066215	-1.26
_cons	-20.74696	4.128181	-5.23***
4 explorer women			
age	.5399876	.0917196	5.89***
no_home_office	-.2859167	.5664039	-0.50
type_of_working_condition			
part_time_employment	2.166757	.5819529	3.72***
vocational_training	1.165016	1.020747	1.14
marginal_employment	1.331988	.7082301	1.88*

contract_type			
temporary_job	-.9395721	.5003629	-1.88*
self_employed	-617.3095		.
changes_in_job_condition			
returned_to_past_employer	-694.5674		.
new_position_different_company	2.503579	3.173653	0.79
taken_on_by_company	-619.7123		.
changed_job_within_company	-618.8996		.
new_job_self_employed			
continued_position	2.797674	3.014091	0.93
infl_earn_per_hour	-.1059404	.0485872	-2.18**
_cons	-19.62044	3.878226	-5.06***
5 experienced women			
age	.5338614	.119501	4.47***
no_home_office	1.147864	1.087583	1.06
type_of_working_condition			
part_time_employment	1.83973	.7898062	2.33***
vocational_training	-618.7584		.
marginal_employment	1.14801	.9090852	1.26
contract_type			
temporary_job	.6263248	.6174285	1.01
self_employed	1.308737	1.264919	1.03
changes_in_job_condition			
returned_to_past_employer	1.297646	1.205098	1.08
new_position_different_company	-621.1951		.
taken_on_by_company	-621.4068		.
changed_job_within_company	-621.0381		.
new_job_self_employed			
continued_position	-3.069459	.700084	-4.38***
infl_earn_per_hour	-.1959794	.0733116	-2.67***
_cons	-16.91521	3.831812	-4.41***

*** $p < .01$, ** $p < .05$, * $p < .1$

Appendix 7: multinomial logistic regressions for each time slot & categorized by categories of women.

8.8 Appendix 8

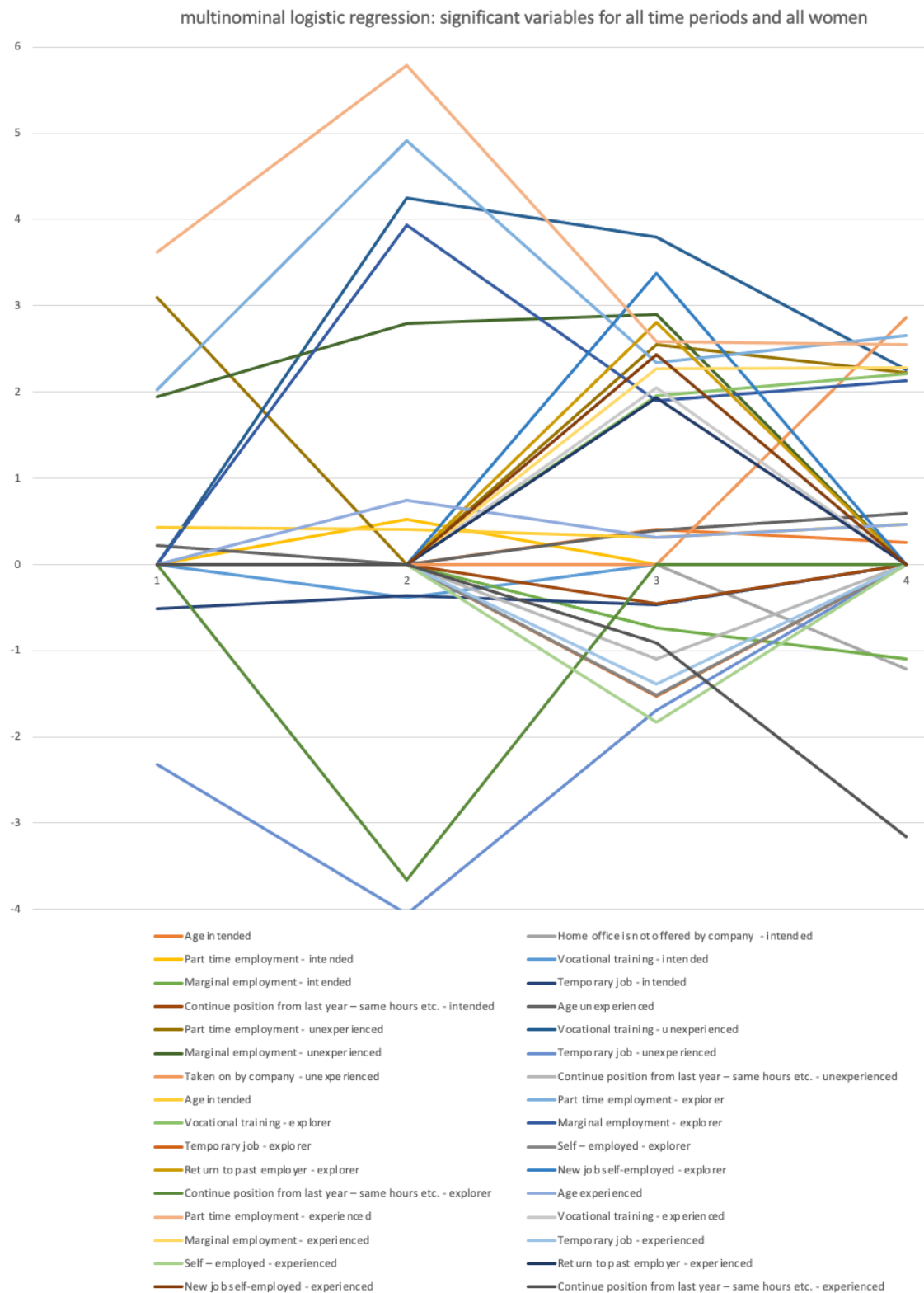
Interaction variables for multiple linear regression, robust		
	Coef.	t-value
Experienced x period_4 (2014-2018)	4.80387	1.47
Experienced x period_3 (2004-2008)	5.959728	2.11**
Experienced x period_2 (1994-1998)	6.376566	2.20**
Explorer x m period_4 (2014-2018)	-5.85163	-1.78*
Explorer x period_3 (2004-2008)	-3.39953	-1.09
Explorer x period_2 (1994-1998)	-4.28469	-1.38
Unexperienced x period_4 (2014-2018)	2.150059	0.82
Unexperienced x period_3 (2004-2008)	1.532488	0.85
Unexperienced x period_2 (1994-1998)	.7519459	0.27
Focused x period_4 (2014-2018)	.7860215	0.54
Focused x period_3 (2004-2008)	.5015625	0.37
Focused x period_2 (1994-1998)	.6605248	0.52
Focused x no_home_office	.1765465	0.40
Unexperienced x no_home_office	-5.274377	-1.34
Explorer x no_home_office	-1.453118	-0.81
Experienced x no_home_office	-6.851009	-1.86*
Focused x part_time_employment	-1.034127	-0.85
Focused x vocational_training	-2.849116	-5.07***
Focused x marginal_employment	-3.197606	-2.29**
Unexperienced x part_time_employment	-2.37723	-1.26
Unexperienced x vocational_training	-7.2027	-2.60***
Unexperienced x marginal_employment	-6.06717	-2.68***
Explorer x part_time_employment	4.132343	2.18**
Explorer x vocational_training	-2.760042	-1.27
Explorer x marginal_employment	-0.1864242	-0.08
Experienced x part_time_employment	1.981039	1.28
Experienced x vocational_training	.4804838	0.26
Experienced x marginal_employment	-3.639008	-1.88*
Focused x temporary_job	1.251672	2.10**
Focused x self_employed	-.9981666	-0.56
Unexperienced x temporary_job	4.248759	1.72*
Unexperienced x self_employed	1.131777	0.26
Explorer x temporary_job	2.714067	1.42
Explorer x self_employed	7.335352	0.51
Experienced x temporary_job	2.353752	2.07**
Experienced x self_employed	-4.220649	-1.27
Focused x returned_to_past_employer	3.113621	2.02**
Focused x new_position_different_company	.1284411	0.12
Focused x taken_on_by_company	6.982587	3.62***
Focused x changed_job_within_company	-4.16011	-0.68
Focused x new_job_self_employed	-3.357449	-0.61
Focused x continued_position	.956262	1.84*
Unexperienced x returned_to_past_employer	.9013765	0.30
Unexperienced x new_position_different_company	-1.282235	-0.40
Unexperienced x taken_on_by_company	1.502485	0.40
Unexperienced x changed_job_within_company	-7.075125	-1.00
Unexperienced x new_job_self_employed	.7656259	0.10
Unexperienced x continued_position	-2.244988	-0.94

Explorer x returned_to_past_employer	-2.022877	-0.34
Explorer x new_position_different_company	-2.665074	-0.45
Explorer x taken_on_by_company	-6.330155	-0.41
Explorer x changed_job_within_company	-9.135379	-0.86
Explorer x new_job_self_employed	-11.04202	-1.14
Explorer x continued_position	-1.55444	-0.26
Experienced x returned_to_past_employer	-1.850941	-0.86
Experienced x new_position_different_company	-4.883478	-2.09**
Experienced x taken_on_by_company	Omitted	
Experienced x changed_job_within_company	Omitted	
Experienced x new_job_self_employed	-4.699635	-0.70
Experienced x continued_position	-.6839925	-0.38
Period_2 (1994-1998) x part_time_employment	10.05059	13.06***
Period_3 (2004-2008) x part_time_employment	11.36939	18.92***
Period_4 (2014-2018) x part_time_employment	10.42288	27.40***
Period_2 (1994-1998) x vocational_training	1.649504	3.00***
Period_3 (2004-2008) x vocational_training	2.024554	4.58***
Period_1 (1984-1988) x vocational_training	-13.58598	-27.04***
Period_1 (1984-1988) x marginal_employment	-15.00966	-12.23***
Period_3 (2004-2008) x full_time_employment	18.12065	24.57***
Period_4 (2014-2018) x full_time_employment	18.36469	32.59***
Period_2 (1994-1998) x temporary_job	-.6105834	-0.50
Period_3 (2004-2008) x temporary_job	-.9601595	-0.99
Period_1 (1984-1988) x temporary_job	-.9643052	-1.38
Period_2 (1994-1998) x permanent_job	.0588048	0.04
Period_3 (2004-2008) x permanent_job	-.0412118	-0.03
Period_4 (2014-2018) x permanent_job	.4013975	0.57
Period_2 (1994-1998) x first_job	-21.52127	-7.10***
Period_3 (2004-2008) x first_job	-21.08845	-6.94***
Period_4 (2014-2018) x first_job	-21.36489	-7.06***
Period_2 (1994-1998) x returned_to_past_employer	-18.96806	-7.35***
Period_3 (2004-2008) x returned_to_past_employer	-18.48317	-7.22***
Period_4 (2014-2018) x returned_to_past_employer	-18.82747	-6.84***
Period_2 (1994-1998) x new_position_different_company	-14.38641	-6.86***
Period_3 (2004-2008) x new_position_different_company	-13.51647	-6.61***
Period_4 (2014-2018) x new_position_different_company	-14.17695	-6.99***
Period_2 (1994-1998) x taken_on_by_company	-10.43133	-6.84***
Period_3 (2004-2008) x taken_on_by_company	-8.239805	-4.34***
Period_4 (2014-2018) x taken_on_by_company	-9.453505	-5.70***
Period_2 (1994-1998) x changed_job_within_company	-4.672861	-4.07***
Period_3 (2004-2008) x changed_job_within_company	-4.415382	-3.57***
Period_1 (1984-1988) x changed_job_within_company	-2.121348	-1.01
Period_2 (1994-1998) x new_job_self_employed	-2.838812	-3.70***
Period_3 (2004-2008) x new_job_self_employed	-1.340269	-0.93
Period_4 (2014-2018) x new_job_self_employed	-2.443156	-2.07**

*** $p < .01$, ** $p < .05$, * $p < .1$

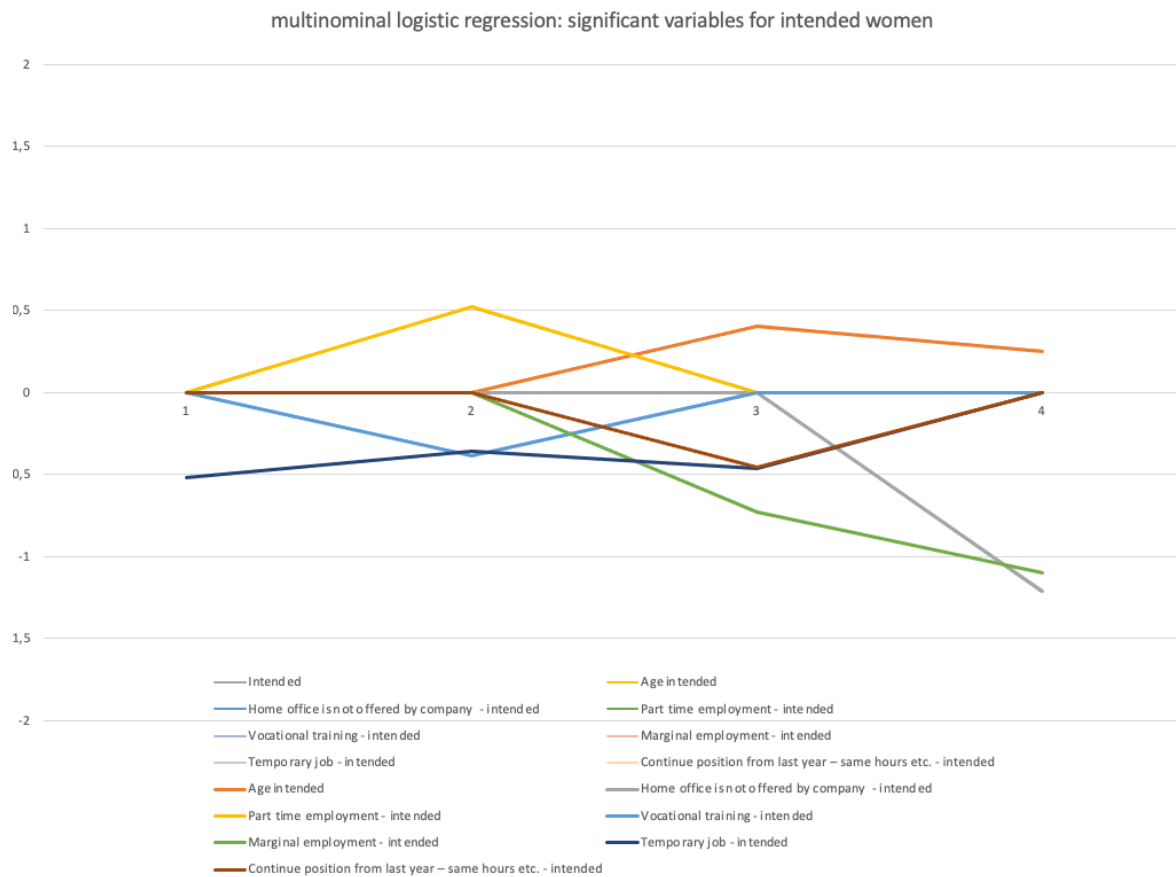
Appendix 8: interaction variables linear regression – each category of women with each independent variable – significance level at $p < 0.05$

8.9 Appendix 9



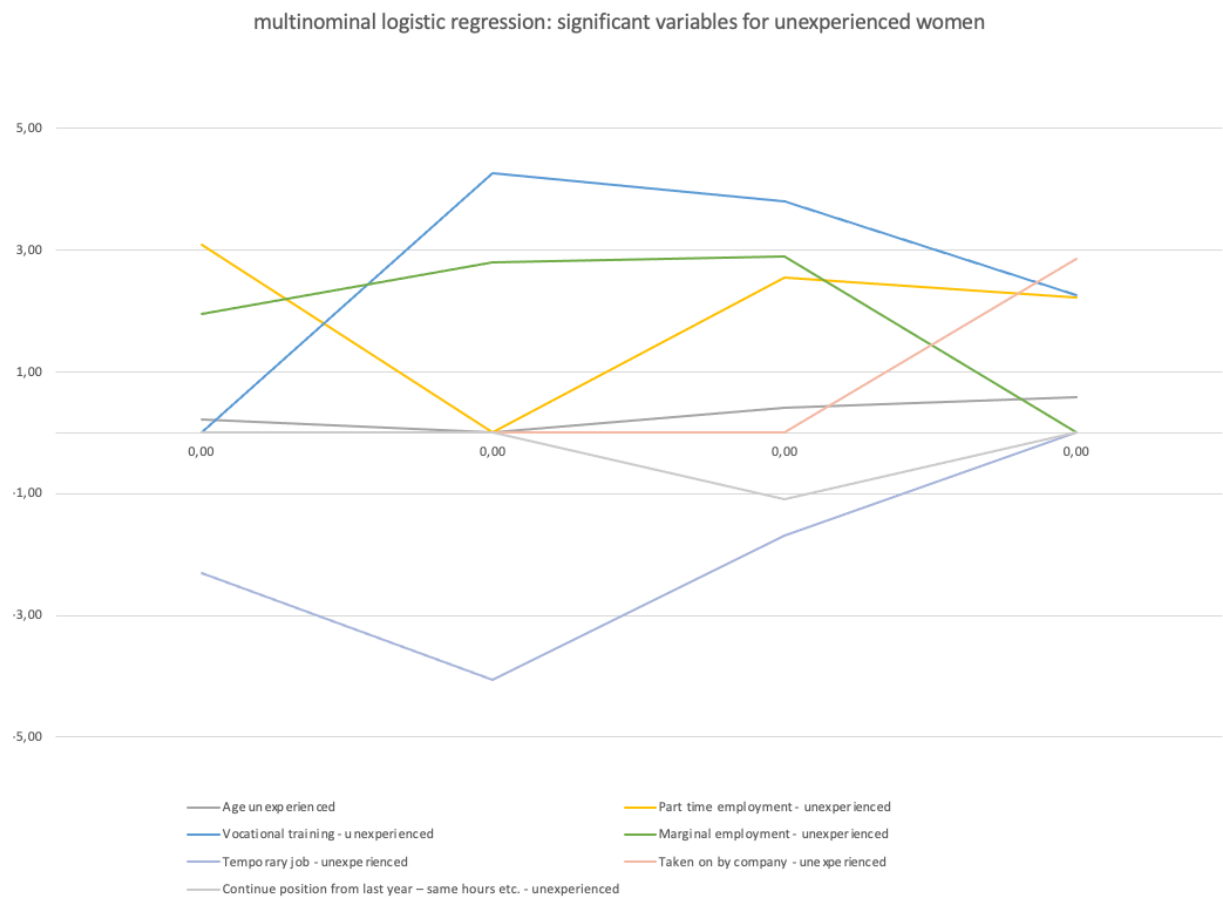
Appendix 9: scaling of the significant variables of the multinomial logistic regression output for all periods for all types of women. Done to highlight the fluctuations of the dependent variables over the periods to feature the variations observed over time.

8.10 Appendix 10



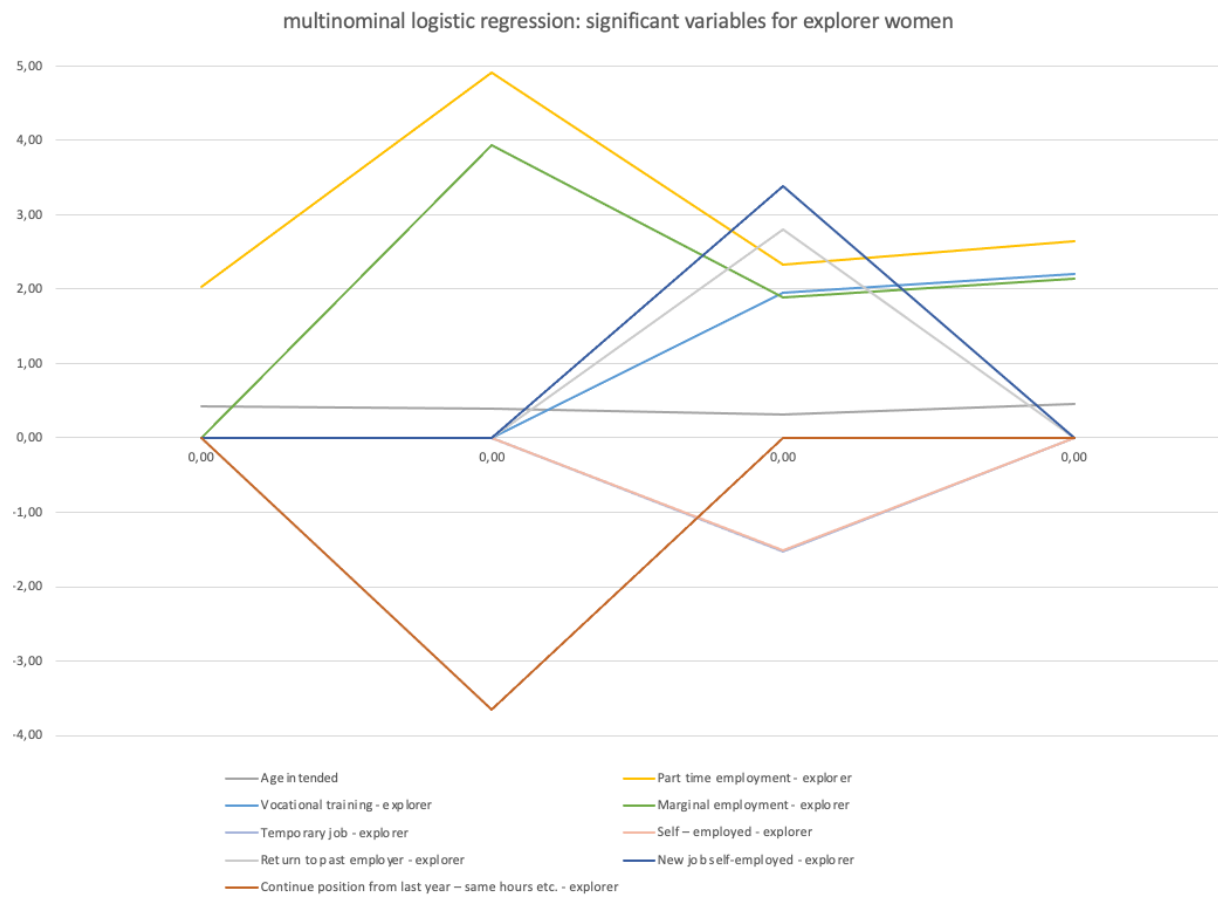
Appendix 10: scaling of the significant variables of the multinomial logistic regression output for all periods and intended women. Done to highlight the fluctuations of the dependent variables over the periods to feature the variations observed over time.

8.11 Appendix 11



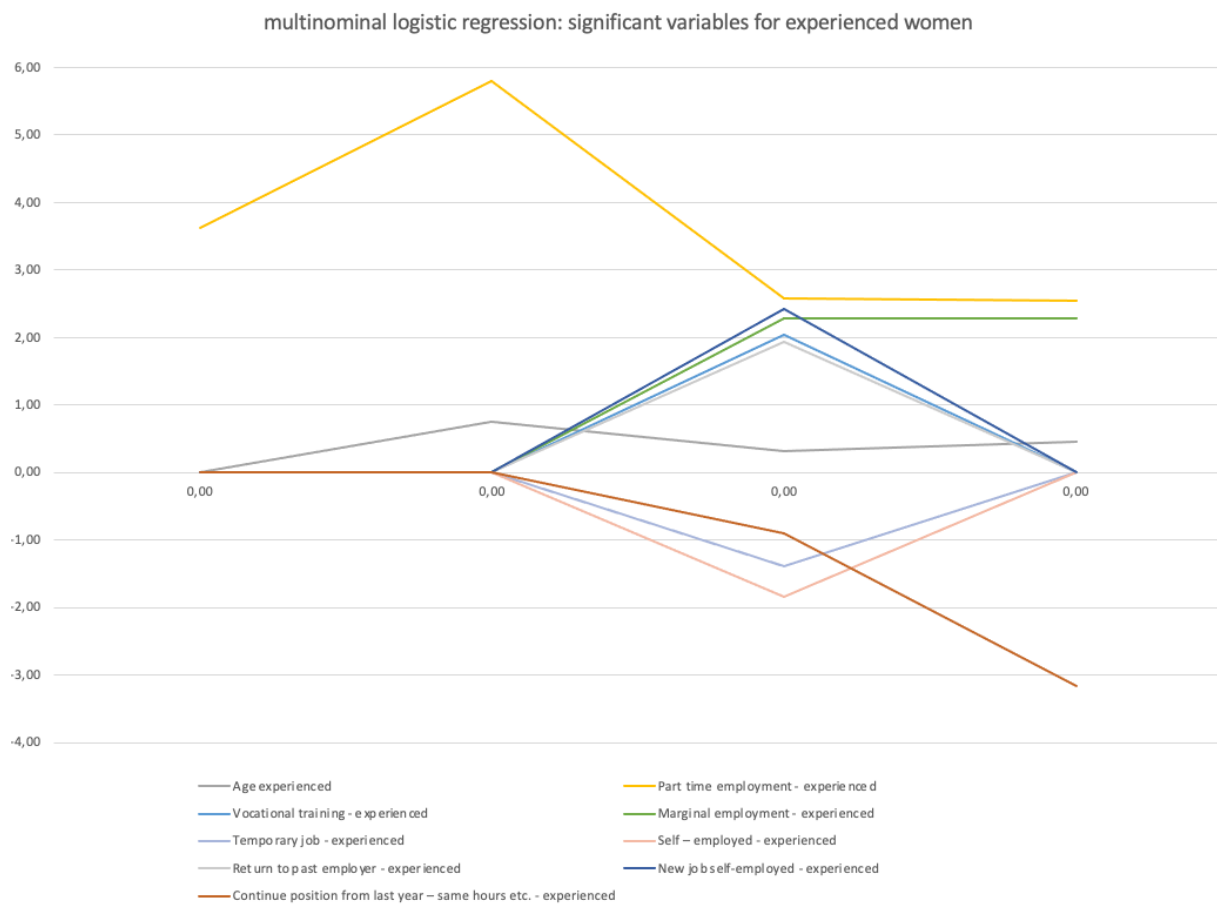
Appendix 11: scaling of the significant variables of the multinomial logistic regression output for all periods and inexperienced women. Done to highlight the fluctuations of the dependent variables over the periods to feature the variations observed over time.

8.12 Appendix 12



Appendix 12: scaling of the significant variables of the multinomial logistic regression output for all periods and explorer women. Done to highlight the fluctuations of the dependent variables over the periods to feature the variations observed over time.

8.13 Appendix 13



Appendix 13: scaling of the significant variables of the multinomial logistic regression output for all periods and experienced women. Done to highlight the fluctuations of the dependent variables over the periods to feature the variations observed over time.

8.14 Appendix 14

<https://www.dropbox.com>

Appendix 14: Dropbox link with stata output with files:

1. full regression data set final
2. dataset with education variables
3. graph for assumptions of datasets