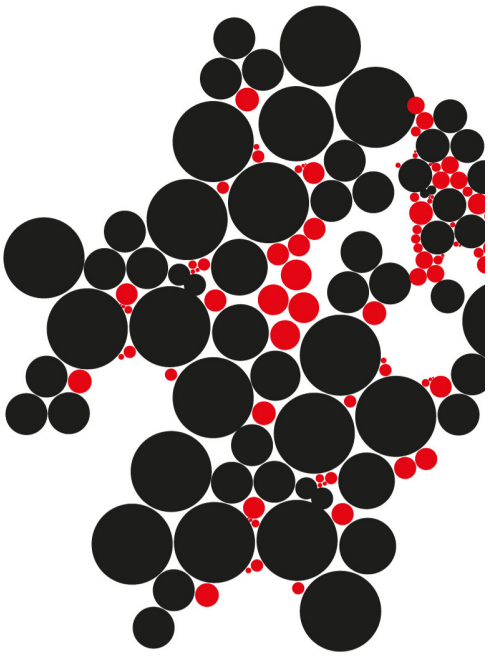
MASTER THESIS



Testing preference theory:

the importance of women's gender role attitudes for explaining female employment in Europe.

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Preface and acknowledgements

This study started from a challenge by my supervisors to find a paradox in the literature on work behavior of mothers and to do research on the subject using the European Social Survey. I never did quite find out what that paradox was, but during my literature search I did find a research topic that caught my interest. Much of the sociological literature on the subject of female employment and motherhood focused on the relation between rising female employment rates and declining fertility rates in industrialized countries. One of the explanations that I found most compelling was the hypothesis of McDonald [2000] that a mismatch between the promotion of gender equality for individuals and social institutions that still promote traditional family values creates a situation where many women pursue education and work on the same level as men, then find out that professional life is not very compatible with family life and choose to have fewer if any children to not damage their career. The key idea in this hypothesis is that gender role attitudes, ideas about the social roles that men and women are supposed to perform in society, are important in explaining actual work behavior of women. I also found this idea of a mismatch in the research of Rindfuss et al. [2003] on role incompatibility between women's worker and family roles. In their conclusion Rindfuss et al. discuss the need for comparable surveys across countries with indicators for the "attitudinal/normative climate regarding various aspects of both combining work and child-rearing..." This triggered my interest as measuring attitudes across European societies is exactly what the European Social Survey is about. At this point I decided to focus my research on the relation between gender role attitudes and female employment in Europe, the result of which lies before you.

I would like to thank my supervisors Rense en Minna for their motivational support during our feedback sessions. Your advise helped me bring the necessary focus in my research. I am also grateful to my family, who provided the moral support to keep me going. Last but not least I would like to thank the people at the departments CSTM and C&O who I worked with over the last year in various student-assistantships: Susan, Frans, Thomas, Jules and Jolien. Your projects provided me with the financial means and proper work environment that allowed me to finish my thesis.

Contents

1. Background and research question

Much of the research into female employment patterns across European countries focusses on explaining trends and cross-national variations, at the expense of giving attention to individual motivation and preferences [Hakim, 2002, 429]. Both the European Union and the Organization for Economic Cooperation and Development stimulate cross-national comparative studies in an effort to explain institutional and cultural differences between the member states. One example of such a research effort is the European Social Survey (ESS), which is designed to "chart and explain the interaction between Europe's changing institutions and the attitudes, beliefs, and behavior patterns of its diverse populations" (europeansocialsurvey.org). Since the ESS contains a wide array of individual level data it can also be used to study women's employment decisions from individual attitudes and characteristics. This is the topic of Catherine Hakim's preference theory, a theory that gives a central role to women's attitudes, values and lifestyle preferences as determinants of female employment. In this thesis I use the ESS to test some of the claims of Hakim's preference theory about female employment.

Hakim [2002] found that British women differ substantially in their lifestyle choices concerning work, family and education depending on their views about social roles of men and women in the family and the importance of work in their lives. Hakim's approach is different from most other studies of gender role attitudes as she classifies women into three distinct groups instead of labeling all women 'traditional' or 'egalitarian'. Once genuine choices are open to them, women will choose between home-centered, adaptive, and work-centered lifestyles which determines their fertility, employment pattern and responsiveness to public policy [Hakim, 2002]. Most women fall in the adaptive group, they give no fixed priority to either work or family and seek to devote as much time and effort to their families as to their jobs [Hakim, 2002, 434]. Work-centered and home-centered women are minorities that do give priority to one or the other. Work-centered women focus on competitive activities in the public sphere: careers, sports, politics or the arts [Hakim, 2002, 435]. Home-centered women prefer to give priority to home and family life, and prefer to avoid paid work [Hakim, 2002, 437]. Hakim does not claim that women's gender role attitudes are the sole determinant of women's employment choices or that

the social and economic context is irrelevant, but that they are an important and maybe even the primary determinant of women's employment patterns in prosperous modern societies [Hakim, 2002, 2003].

This is a bold claim, and one of several that are worth investigating. Hakim insists that preference theory can be used to explain cross-national differences in women's employment patterns, yet only suggests two countries as appropriate settings for testing the theory and studies only one [Hakim, 1998, 2002]. A theory appropriate for cross-national research that can only be used to compare two countries is a bit limited, so I test if preference theory can be applied in a multi-national setting of many European countries. Hakim also claims that "lifestyle preferences determine which societal and contextual factors women respond to" (in their employment behavior *ed.*) [Hakim, 2002, 447]. Yet, her own investigation of interactions between contextual factors and preferences on employment is limited to comparing work rates between the three groups of women for different levels of education and children [Hakim, 2002, 445,447]. A more thorough investigation of such interactions is very well possible and is included in this study. Hakim further argues that the impact of preferences has been underestimated and is becoming increasingly important in liberal, rich modern societies, but that only the United States and Britain have achieved the "new scenario in which women have genuine choices and female heterogeneity is revealed to its full extent" [Hakim, 2002, 434]. This implies that female heterogeneity is not as important in countries that are less liberal than the United States and Britain, but the question of how the importance of preferences for female employment differs exactly between liberal and traditional countries is left open by Hakim. The goal of this thesis is to test these claims of Hakim about preference theory, and I do that by answering the following research question:

Research question. *Under what circumstances do women's gender role attitudes explain female employment in European countries?*

This research question is divided into three subquestions which separately address the importance of women's gender role attitudes for explaining employment decisions, the interaction between circumstances and attitudes, and the effect that living in a liberal country has on the importance of women's gender role attitudes for explaining employment decisions. The first sub-question focusses on the threefold typology of home-centered, adaptive and work-centered women since it is the most distinguishing feature of preference theory compared to other studies of female employment that include gender role attitudes. The three groups of women must differ substantially in their employment decisions for preference theory to have any value in explaining female employment in European countries. Hakim found that combined full-time and part-time work rates for

work-centered women were highest, followed by those of adaptive and then home-centered women [Hakim, 2002, 442]. With the first subquestion I seek to reproduce these findings with the ESS data:

Sub-question 1. *Do work-centered women work most often, followed by adaptive and then home-centered women?*

The most important contextual circumstance related to female employment is probably motherhood, or the presence of children. Hakim also discusses the impact of having children on female employment for all three groups of women in her own empirical analyses [Hakim, 2002, 447]. The impact of having children was strongest on the full-time work rates of home-centered women, weaker on that of adaptive women and there was little to no impact on the work rates of work-centered women. Hakim uses this example to demonstrate how important it is to differentiate between the three groups of women when making claims about the impact of contextual circumstances. I use the same example to test the interaction between contextual factors and gender role attitudes, which results in the second subquestion:

Sub-question 2. *Is the presence of children more important for the employment decisions of home-centered women than for those of adaptive women, and not important for those of work-centered women at all?*

Another circumstance that is relevant to Hakim's claims about preference theory is the degree to which female heterogeneity is revealed in society. In Hakim's discussion of the developments leading to the 'new scenario' for women she states that all the necessary changes in society took place in Western Europe, North America and other modern societies from the 1960s onwards although the timing and pace of change has varied even between countries in Europe, but because of strong social, cultural, economic and political links between modern countries no country will lag behind indefinitely [Hakim, 2002, 434]. Since Hakim links the increasing importance of attitudes to liberal societies, the interaction that needs to be tested here is between how liberal a country is and how important women's gender role attitudes are for their employment decisions.

Sub-question 3. *Are differences in employment between the three groups of women larger in liberal countries than in traditional countries?*

With these three research questions I test if Hakim's preference theory is appropriate for use in future studies, academic or otherwise, of female employment in a multinational setting. I also test if taking into account female heterogeneity is important for case

studies or policy studies that seek to establish the importance of various factors on female employment, lastly I test if a liberal country profile is important for the relevance of gender role attitudes. The rest of this thesis is structured as follows. In the second chapter I explain the theory behind the relation between gender role attitudes and female employment as well as other theories of female employment, from which I derive my hypotheses. In the third chapter I summarize the data contained in the ESS round 2 and the variables used to measure the various concepts in my hypotheses. I end the third chapter with a description of the method of analysis used to produce my research findings. I show the results of this analysis in chapter three and relate findings from both bivariate and multivariate analyses back to my hypotheses. In the conclusion, I summarize the results of my study and discuss the consequences of my findings for Hakim's preference theory and for others who want to use preference theory in their research or policy studies. I end my conclusion with a suggestion for a research design that could further specify in what countries gender role attitudes are most important.

2. Theory

2.1. The relation between gender role attitudes and female employment

Gender role attitudes are a set of ideas about the goals, expectation and actions associated with a particular gender. These expectations are linked to the future roles that men and women will occupy in the family, in the workplace, and in society [Eagly and Wood, 1999]. Men and women seek to accommodate to these roles by acquiring the appropriate skills and characteristics, which in turn facilitates their role performance. The reason that people will in fact confirm to these gender roles is because it is rewarding to do so in social interaction. People induce others into appropriate behavior through communication of expectations and they regulate their own behavior by internalizing gender-stereotypic expectations [Eagly and Wood, 1999, 413]. "women and men choose their work according to the gender roles they have learned" [Nordenmark, 2004, 234].

The process of learning gender roles is part of the socialization of children. Children inherit the social norms, customs and beliefs of their society. They learn behavior and attitudes that are appropriate for a given sex through social institutions in their environment: family, media, education, religion, language. Girls for example learn about caring through dolls that they get to play with. As they grow up, these attitudes are internalized into a gender strategy: plans and emotional preparation for action in line with the learned gender roles [Nordenmark, 2004, 234]. The girl who loves taking care of dolls wants to become a nurse and plans to go to nursery school. Most people will stick with this gender strategy because of induction and self-regulation and by the time they are done with education and have reached adulthood, they are well positioned to act out the gendered role that they have learned. This process of gender socialization is also one of the arguments of treating gender role attitude as a cause of work behavior: gender role attitudes are mainly transferred during childhood and labour involvement occurs during adulthood [Nordenmark, 2004, 235].

The typology most often used to describe differences in gender role attitudes is to make a distinction between traditional and egalitarian (or liberal and non-traditional) gender role attitudes [1]. Men and women are classified based on support for a gendered division of labor in the household that places women in a homemaker, caretaker role and men in a provider role. Central to the traditional attitude is that the reproductive activities of women: carrying a child to term, suckling an infant and taking care of a child while it is fully dependent on outside help are incompatible with the long absence from home and uninterrupted activity demanded in most employment relations [Eagly and Wood, 1999, 412]. In the traditional view women are better off training interpersonal skills that are useful in both nurturing and the few occupations more compatible with reproduction (teacher, nurse, social worker). In contrast, the egalitarian view is linked to the equal opportunities revolution that established equal access to all professions for women. The attitude that goes with it is that social roles are not fixed to a specific gender: women can be providers and men can be homemakers, or they share both roles. The reproductive activities of women are no longer something that she has to deal with alone. It follows that egalitarian women are more likely to be employed than traditional women.

The assumption in using this kind of typology is that women can be divided in those who support a gendered division of labor and those who oppose it. Preference theory rejects this idea and emphasizes that women are more heterogeneous in their preferences and behavior. Although Hakim's theory does not explain the origin of different gender role attitudes [2], she does stress the importance of individual work-life orientations and preferences in determining labour market outcomes [Hakim, 2002]. Instead of differentiating between just two opposite positions (traditional and egalitarian), Hakim argues that there are three types of women: home-centered, adaptive, and work-centered [Hakim, 2002, 436]. The majority of women is adaptive, meaning that they value work and family about equally and as a consequence they drift between social roles depending on the circumstances: they change their time allocation to homemaker, caretaker and provider roles in accordance with economic downturns, childcare policy, availability of part-time work etc. The other two types of women are fixed in their work behavior: home-centered women will not have a strong attachment to the labour market and will always put the needs of the family first while work-centered women will try to avoid dropping out of the labour market at all cost.

Hypothesis 1. *Home-centered women are least likely to work, work-centered women are most likely to work, and the likelihood of employment for adaptive women is somewhere in between.*

[1] see for example Albrecht et al. [2000], Greenstein [1995], Nordenmark [2004]
[2] Hakim refers to women's personal attitudes as lifestyle preferences

2.2. Human-capital explanations of female employment

Preference theory puts women's attitudes, motivations, and values central in the explanation of their work behavior [Hakim, 2002, 432]. In contrast, economic theories view female employment decisions more as an allocation issue within the family and the result of human-capital investment decisions. According to Polavieja [2008, 202], the fullest development of this human-capital theory of allocation is contained in Becker's analysis of the family [Becker, 1981, 1985]. The basis of Becker's human-capital approach is that investments in specialized human capital produce increasing returns and thereby provide a strong incentive for a division of labor [Becker, 1981]. Also, the incentive to invest in human capital specific to a particular activity is positively related to the time spent at that activity [Becker, 1985]. Small initial differences in comparative advantage between men and women for specific activities can be transformed into large observed differences by the reinforcing effects of specialized investments [Becker, 1985, s41]. Becker suggests that women have an intrinsic comparative advantage in all kinds of housework, especially child care and food preparation, which is the root cause of the sexual division of labor in households known as the 'male-breadwinner model'. The decline of this model in practice, and the increased labour force participation of married women in the twentieth century is caused by their increased earning power [Becker, 1985].

Important factors in human-capital models of female employment are related to investments in human-capital and household composition. Increased earning potential causes more women to seek employment in paid jobs. The prospective of market employment creates an incentive to increase market related human-capital, which in turn affects labour productivity and earnings. In practice this shows as a strong positive relation between investment in education and employment. Marriage used to provide the stable environment necessary for strong specialization of household members, but since women increasingly choose for employment and an independent income, the gain from marriage in terms of total welfare is reduced [Becker, 1985]. However, households that consist of partners or spouses living together still have the advantage of being able to specialize over households headed by a single adult, which would result in cohabiting women working less than single women. Age is important as the demand for household productivity of women is greatest during the peak child-rearing years and declines afterwards [Becker, 1981, 26]. This means that the marginal utility for time spent in the labor market increases with age which makes it likely that women will spent more time in paid work as they grow older, at least until they approach retirement age.

Hakim's preference theory challenges the utility of human capital theory. Conventional

human capital factors are most important in relation to women with little or no work commitment and the importance of motivations, values and attitudes as key determinants of female labor market behavior has been overlooked [Hakim, 2002, 432]. Her challenge is that in prosperous modern societies preferences become a much more important, maybe even the primary determinant of women's employment patterns.

Hypothesis 2. *Gender role attitudes have an impact on female employment, independent from the effects of education, cohabiting and age.*

2.3. Female employment and young children

The presence of young children in the household has strong repercussions for the work behavior of women. The basis for a gendered devision of labor in the household is the compatibility of women's reproductive function and child care and the incompatibility with employment outside the home [Eagly and Wood, 1999, 412]. Although these (in)compatibilities are less important in societies with low birthrates, less dependence on lactation for feeding infants, and greater reliance on non-maternal care for young children, the lion's share of child care is still the responsibility of women, both in families living together and in families torn apart by divorce as mothers almost always retain custody. The presence of children also features in the human capital approach, as time and energy spent on child care competes with allocation to employment responsibilities and this leads to a higher risk of interrupted work careers, especially when children are young [Becker, 1985, Polavieja, 2008].

Hypothesis 3. *Mothers of young children are less likely to work than women without young children in the household.*

While Hakim does not dispute the impact of young children on female work rates, she does stress that it is essential to differentiate between the three preference groups among women:

> The heterogeneity of women's lifestyle preferences renders it impossible to produce universally valid statements about which social factors determine female work rates. [Hakim, 2002, 447].

To gain a better understanding of the impact of young children on the work behavior of women, I must modify the hypothesis to take into account different gender role attitudes. It is precisely in the interactions of social factors, preferences and work behavior that the importance of women's gender role attitudes are revealed.

> Women's attitudes and values predate, and anticipate, marriage and child-bearing, but women only make hard choices between a career and a family-centered life if, and when, they actually marry and have children [Hakim, 2002, 446].

Home-centered women are only likely to work if it does not conflict with family responsibilities, so when there are young children in the household they are more than likely to drop out of the labor market. Adaptive women seek to balance work and family life, so they can use a number of different responses to the impact of young children: temporarily dropping out of the labour market, reducing the number of hours worked, and switching to a profession that is more easily to combine with the demands of young children are all viable choices to combine work and family life. Work-centered women value their career over family life and so should be affected the least by child care responsibilities, likely they rely heavily on non-maternal care arrangements.

Hypothesis 4. *Home-centered women have greatly reduced odds of employment when there are young children in the household, while adaptive women have slightly reduced odds and the odds of employment for work-centered women are not affected compared to women without children.*

2.4. Female employment across different societies

According to Eagly and Wood [1999], the root cause of a gendered system of social roles is a combination of biological factors and activities required by a society's economy and social organization. The distribution of men and women in social roles, the formulation of gender roles as stereotypical beliefs about appropriate behavior for each sex and the reproduction of these attitudes and behaviors by individuals through socialization, induction and self-regulation are society bound. Gender roles are transferred through a national education system, labour market organization, legal system, and media. Likewise social policy systems, as representations of gender ideologies on a structural level, can affect values and behavior among individuals [Nordenmark, 2004, 234].

> If a person is raised in a society that strives to protect traditional family and gender norms, there is a high probability that she or he will live and act according to a gender-specific ideology. This in turn increases the probability that women and men will perform in line with a traditional division of labour, meaning that women will do a majority of the household work and men will devote themselves mainly to paid work [Nordenmark, 2004, 235].

The effect is that in countries where the prevailing norms are traditional, female employment rates will be lower than in countries where the prevailing norms are more liberal. For individual women this translates to the following hypothesis:

Hypothesis 5. *Women living in liberal countries are more likely to work than women in traditional countries.*

Again Hakim does not dispute the impact of social structures and social policy on female employment patterns, but argues that institutional constraints are important only at the margins [Hakim, 2002, 430]. Preference theory contributes to the understanding of cross-national differences in female employment by showing how women with different gender role attitudes are affected by social structures and policy to varying degrees [Hakim, 1998, 140]. Home-centered women are not responsive to employment policy, as they prefer not to work and prioritize their family. Adaptive women are very responsive to social and economic policy as well as other societal factors such as economic cycle, trade union attitudes to working women and availability of part time work. Work-centered women are not responsive to policy, but they act on opportunities to pursue a career whether it is economic, political, artistic or something else. Since home-centered women prefer not to work anyway, it should not matter what sort of country they live in. Adaptive women should be heavily influenced by the country they live in, as the social structures and policies in a country where traditional values prevail should reduce their motivation to seek employment while the structures and policies in a liberal country should encourage them to work. Work-centered women lastly are more likely to find opportunities for an economic career in a liberal country than in a traditional country, but they will still seek and find opportunities in a traditional country as well so the type of country should matter less to them than for adaptive women.

Hypothesis 6. *Adaptive women have greatly improved odds of employment when living in a liberal country, while work-centered women have slightly improved odds and the odds of employment for home-centered women are not affected compared to women living in a traditional country.*

3. Data and Methods

3.1. Data

My empirical analysis is based on the European Social Survey Round 2 2004/2005, edition 3.2 (in the following called ESS-2)[1]. The purpose of the ESS, as stated on the website is: "to chart and explain the interaction between Europes changing institutions and the attitudes, beliefs and behavior patterns of its diverse populations." The ESS uses biennial rounds of surveys consisting of a core module which is repeated at each round and two or three rotating modules. The core module provides continuity in the measurement of socio-economic, political and demographic variables, while the rotating modules provide more in depth information centered around a specific theme. I use the ESS-2 survey because it contains a rotating module focused on the inter-relations between work, family and well-being. This module has specific questions about individual attitudes concerning family-work balance and obligations (questions G6-G10). A reason for using the ESS in general is the rigorous approach to probability sampling, question-testing, event-recording, translation and response rate enhancement that ensure that the data gathered is of the highest academic standard.

3.2. Sample

There are 26 participating countries in ESS-2, of which 25 are included in the integrated data file with a total sample size of 47537 individuals. The data for Italy is not included because no respondents were asked the full version of the questionnaire and the sample design was not signed off by the expert panel ESS Round 2: European Social Survey [2011]. Based on the descriptive statistics I removed Turkey from the analysis as it is

[1] ESS2-2004 Edition 3.2 was released on 2 February 2011. Participating countries: European Union countries Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovakia, Spain, Sweden, UK; non-European Union countries Iceland, Norway, Switzerland, Turkey, Ukraine. [ESS Round 2: European Social Survey, 2011]

too much of an outlier in the dependent variable: while all other countries have female employment rates of at least 50% Turkey only has 13%. This reduces the sample size to 45681. Further sample restrictions are the same as used by Hakim [2002]: no pensioners [439], no students in full-time education [442] and an age restriction of 20-59 years [2]. Pensioners and students are removed using question F8d: main activity in the last seven days, those who answered 'education' or 'retired'. This leaves us with a final unweighted sample size of 14312. All analyses use the design and population weights provided in the ESS to account for selection bias resulting from national differences in sampling methods and variation in sample size relative to country population. Table 3.1 displays a summary of the variables used in the analysis, including weighted sample sizes, percentages or means and standard deviations where appropriate.

3.3. Measures

The dependent variable in this thesis is involvement in paid work, or employment. This variable is measured as the number of respondents who reported having done any paid work in the last seven days. Although this measure does not let me distinguish between women who have demanding full time careers and women who only work a few hours a week, there is no better alternative available [3]. Alternative measures in the ESS such as the number of hours worked were asked to all women currently employed or who were employed in the past about their last job. This means that their current household situation can not be directly linked to their hours worked, which makes the binary measure of doing paid work more suitable for testing the hypotheses.

The main independent variable is gender role attitude, from here on called 'personal attitude'. This variable is used to describe the lifestyle preferences of Hakim's preference theory. I use 'personal attitude' instead of 'lifestyle preference' because it is not possible to reproduce the same classification as Hakim since the ESS was not designed with preference theory in mind. I categorize women into the home-centered, adaptive, and work-centered groups according to their response on the statement "A woman should be prepared to cut down on her paid work for the sake of the family" (question G6). Women who agree strongly are labeled home-centered, those who disagree strongly are labeled work-centered and the rest is labeled adaptive. I do not construct a scale of gender role attitudes as

[2] The choice of age limit does affect the results because the relation between age and employment appears to be quadratic rather than linear, even when excluding students and pensioners (see appendix B.1).

[3] I also did my analyses for women who reported that paid work was their main activity in the last seven days, but this had little effect on the results

is common in sociological research on relations between attitudes and behavior [4], but instead opt for the measure in the ESS that is most specific about the relation between family and work responsibilities. This choice is based on a recommendation that Hakim made in a critique of social attitude surveys Hakim [2003, 341]. [5]

The independent variables used to test if Hakim's preference theory contributes to our understanding of female employment after taking into account explanatory factors from human-capital theory are measured as follows. Education is measured by years of full-time education completed. [6] Cohabiting includes all women who report living together with a husband or partner, as in this situation the household as a whole could benefit from specialization by its members. Age of respondents has already been calculated by the ESS staff based on year of birth and date of the interview.

The impact of young children is measured using the presence of children aged 12 or under in the household. I refer to this variable as 'children'. Children aged 12 or under can be considered young since they still need supervision for many of their daily tasks. Younger children do need more care, for example children of pre-school age or suckling infants, but I do not think that level of detail is necessary to show differences in work behavior between the three groups of women. Hakim [2002, 442] herself uses an even less strict definition of dependent children: 0-16 years.

The impact of prevailing norms in society is measured by aggregating responses to the statement "A woman should be prepared to cut down on her paid work for the sake of the family" of all men and women in a country into an average score (range = 1 to 5, where 1 is 'agree strongly' and 5 is 'disagree strongly'). Countries are then labeled 'traditional' or 'liberal' depending on the score: 'traditional' when the average score is lower than 3 (neither agree nor disagree), 'liberal' when it is higher. Using this definition the following countries are labeled as liberal: Belgium, Denmark, Finland, Iceland, Netherlands, Norway, and Sweden[7]. These same labels are applied to individual women to analyze the

[4] see for example Braun et al. [1994], Greenstein [1995], Nordenmark [2004], Polavieja [2008], Scott [1999], Sjöberg [2004]

[5] an alternate way of using the ESS with Hakim's preference theory is described by Vitali et al. [2009], I do not use this method as it includes a measure of contribution to household income to determine a career oriented attitude. Since income is dependent on doing paid work in the first place, this method ends up predicting employment from the fact that a woman reports having an income. Hakim's own analysis of the 1999 British survey uses the question "Who is the main income-earner in your household?" and identifies women who regard themselves as main earner or joint main earner as having a primary earner identity [Hakim, 2002, 441]

[6] Hakim [2002] uses the measure 'age by which the respondent has left full-time education' to create categories for low, medium and high education.

[7] for full country descriptives, see appendix A.1

effect of country attitude on women's employment decisions.

Table 3.1.: Descriptive Statistics. Women aged 20-59, no students or pensioners, weighted by design and population weights.

Variable	Description	*N*	*M* or %	*SD*
Employment	Doing last 7 days: paid work	12045	68.4%	
Personal attitude	A woman should be prepared to cut down on her paid work for the sake of the family	11903		
	-Home-centered	1503	12.6%	
	-Adaptive	9373	78.7%	
	-Work-centered	1028	8.6%	
Cohabiting	Lives with husband or partner	12013	72.8%	
Children	Children aged 12 or under live with you	12032	37.1%	
Country attitude	Lives in country where men and women on average favor or oppose women cutting back on paid work for the sake of the family	12045		
	-Traditional	10664	88.5%	
	-Liberal	1382	11.5%	
Education	Years of full-time education completed	11923	12.66	3.545
Age	Age of respondent	12045	40.27	10.287

3.4. Method of analysis

Bivariate statistics are produced to get an idea of the correlations between independent variables and employment. The effects of the nominal variables personal attitude, cohabiting, children and country attitude are tested using a chi-square test for group differences, the effects of the interval variables education and age on employment are tested using a t-test for equality of means. The purpose of these bivariate analyses is to check if the separate variables relate to female employment as expected from theory. I then use logistic regression to estimate the effect of personal attitude on paid work while accounting for the other factors. In line with my hypotheses I gradually introduce more variables into the equation to see how these affect the relation between personal attitude and employment of women. Personal attitude, civil status, children and country attitude are dummy coded using adaptive women, not living with a husband or partner, no children aged 12 or under and living in a traditional country as references. I use an omnibus test for differences in -2 log likelihood to determine model improvements. I end my analysis

with a discussion of the goodness of fit based on Hosmer-Lemeshow test results and the predictive ability of the model based on the classification tables.

4. Analysis

4.1. bivariate analyses

Table 4.1 compares employment rates for women grouped by personal attitude, cohabiting, children and country attitude. Differences in employment rates between the groups are tested for statistical significance using Pearson's chi-square. Table 4.2 uses employment as the grouping variable and compares average age and years of full time education completed. Differences between groups are tested for statistical significance using independent t-tests. Test results are reported and discussed in the sections below the tables. The bivariate analysis are used to see if the relations between independent variables and female employment are as expected from theory.

The chi-square test for differences between groups gives the following results for the relations between the nominal variables and female employment. Home-centered women are least likely to work, and adaptive women are less likely to work than work-centered women, $X^2_{(2,N=11903)} = 134.5, p < 0.001$. This means that the first hypothesis receives a preliminary confirmation, it appears that women from Hakim's three groups do make different employment decisions. The same can be said for cohabiting women and single women: women living with a husband or partner were less likely to work than women not cohabiting, $X^2_{(1,N=12013)} = 42.1, p < 0.001$. Human-capital theory explains this from the benefits of specialization between household members, an option not available for single women. Human capital theory also appears to be correct in predicting that women with children aged 12 or under are less likely to work than women without young children at home (hypothesis 3), $X^2_{(1,N=12031)} = 240.3, p < 0.001$. The results for the effect of country attitude on employment are as predicted by social-structural theory in hypothesis 5: women living in a liberal country are more likely to work than women living in a traditional country, $X^2_{(1,N=12045)} = 25.9, p < 0.001$.

The results from the t-test for differences between groups show that employed women do have more years of education completed on average, but that they are not older or younger than women who are not employed. Employed women have completed significantly more

Table 4.1.: Female employment by personal attitude, cohabiting, children and country attitude. Crosstabulations for women aged 20-59, no students or pensioners. Percentages and valid responses, weighted by design and population weight.

	Not Employed	Employed	*N*
Personal attitude			11903
Home-centered	43.4	56.6	1503
Adaptive	30.3	69.7	9373
Work-centered	23.8	76.2	1027
Cohabiting			12013
Yes	33.3	66.7	8744
No	27.1	72.9	3269
Children			12031
Yes	40.1	59.9	4461
No	26.5	73.5	7570
Country attitude			12045
Traditional	32.4	67.6	10663
Liberal	25.6	74.4	1382

Table 4.2.: Years of education completed and age for employed and not employed women aged 20-59. Mean values, standard deviations and valid responses weighted by design and population weights.

	Education			Age		
	M	*SD*	*N*	*M*	*SD*	*N*
Not employed	11.48	3.50	3757	40.08	10.91	3807
Employed	13.20	3.43	8167	40.35	9.98	8239

years of full-time education than women not employed, $t_{(11921)} = 25.2, p < 0.001$. [1] This suggests that employed women may have a higher education as well, since higher education takes longer to complete. At the very least it shows that employed women have invested more time in education, which is what human-capital theory predicts. The prediction of the relation between age and employment that I made on the basis of human-capital theory is not supported by these results. Employed women are slightly older than women not employed, but the difference is negligible, $t_{(6844.6)} = 8.991, p = 0.171$ (equal variances not assumed). [2] It appears that within these sample restrictions older women are not more likely to work than younger women. With that lone exception it appears that all bivariate relations are as predicted by theory, and the findings provide some support for Hakim's preference theory in that employment rates vary substantially between the three groups of women.

4.2. multivariate analysis

Binary logistic regression is used to estimate the effects of the independent variables on the probability of employment. I use six different models to gradually introduce more variables into the equation in line with my hypothesis. Model 0 is the empty model without any of the predictor variables. Model 1 adds personal attitude into the equation, with adaptive women as the reference group and home-centered and work-centered women automatically dummy coded. Model 2 introduces cohabiting (not living together with a husband or partner is reference), education and age. In model 3 the presence of young children is added (no children is reference) and in model 4 country attitude with living in a traditional country as reference. Model 5 includes the interaction between personal attitude and children and in model 6 the interaction between personal attitude and country attitude. All models use an 0.5 criterion for the prediction of employment and a confidence interval of 95% for the goodness of fit. Tables 4.3 and 4.4 show unstandardized b-coefficients with the standard error in between brackets, indications for the p-value of the Wald chi-square test, and odds ratios for each of the predictors. The bottom rows show the -2 log likelihood ratio, the omnibus test chi-square scores for improvement in -2 log likelihood of each model compared to the previous, and the Hosmer and Lemeshow chi-square for goodness of fit. The results are presented in two different tables to keep the analysis of interaction effects apart from the discussion of the effect of personal attitude controlled for other factors.

[1] See appendix C.1 for a graphic display of the relation between years of full-time education and employment.

[2] See appendix B.1 for a graphic display of the relation between age and employment.

Table 4.3.: The probability of being employed (Logistic Regression. Women aged 20-59, no students or pensioners) by personal attitude, age, cohabiting, education, children and country attitude. Unstandardized b-coefficients (standard error) and odds ratio's (Weighted $N = 11754$).

	Model 0		Model 1		Model 2		Model 3		Model 4	
	B (S.E)	OR	B (S.E)	OR	B (S.E)	OR	B (S.E)	OR	B (S.E)	OR
Constant	0.788(.020)	2.198	0.271(.053)	1.348	-1.771(.128)	0.260	-0.716(.138)	0.388	-0.704(.138)	0.494
Home-centered			-0.567(.057)***	0.567	-0.423(.059)***	0.655	-0.377(.060)***	0.686	-0.365(.060)***	0.694
Adaptive ref.										
Work-centered			0.331(.077)***	1.392	0.190(.079)*	1.210	0.184(.080)*	1.202	0.170(.080)*	1.185
Age					0.014(.002)***	1.014	0.000(.002)	1.000	0.000(.002)	1.000
Education					0.148(.006)***	1.159	0.151(.007)***	1.163	0.150(.007)***	1.162
Cohabiting					-0.274(.048)***	0.760	-0.076(.050)	0.927	-0.079(.050)	0.924
Children							-0.702(.047)***	0.495	-0.703(.047)***	0.495
Liberal Country									0.179(.068)**	1.197
-2 Log. likelihood	14504.27		14477.10		13865.95		13643.89		13636.86	
Omnibus -2 Log. X^2			127.17***		611.16***		222.06***		7.03**	
Hosmer and Lemeshow X^2			0.00		30.51***		43.56***		26.25**	

$*p < 0.05, **p < 0.01, ***p < 0.001$

With the results of the first four models I can test four out of six hypotheses. Starting with the first hypothesis on the different odds of employment for home-centered, adaptive and work-centered women, it appears that preference theory is correct in calling women heterogeneous in their employment patterns. In all models there are significant differences in the odds of employment between the three groups of women. Home-centered women have lower odds of employment than adaptive women ($1/0.694 = 1.44$ times lower, model 4), and work-centered women have higher odds (1.185 times higher, model 4). The difference between home-centered and adaptive women is more pronounced than the difference between adaptive and work-centered women. These results confirm one of the central claims of Hakim's preference theory: that women's gender role attitudes are an important factor in explaining female employment, at least for the European countries included in this analysis.

Controlling for education, age and cohabiting does not remove the relation between personal attitude and employment, which confirms hypothesis 2. However, inclusion of these control variables does put the importance of personal attitudes in perspective. The biggest model improvement overall is by far the inclusion of education, age and cohabiting in model 2. Here the difference in -2 log likelihood is greatest (611.16). Education is probably the most important of these three variables, as age and civil status lose their significance after the next step (Model 3) when the presence of young children is taken into account. The effect of education remains practically the same throughout all models and since education is an interval variable, it adds up to large differences in odds between women with just a few years of education and those who have studied for a longer period. Take for example the odds of a woman with 8 years of education compared to those of a woman with 16 years of education, all else being equal. The odds ratio tells us that the probability of employment multiplies by 1.162 for each year of full-time education completed (model 4). This means that the odds of employment for a women with 16 years of education are more than 3 times that of women with 8 years of education $1.162^8 = 3.32$. Another way of calculating this odds ratio is by first multiplying the difference in years with the coefficient for education and then raising the base of the natural log by this amount: $e^{0.150*8} = 3.32$. What it comes down to is that the impact of time invested in education on the likelihood of employment is much stronger than the impact of personal attitude.

The impact of young children on the probability of employment is quite large as well. When introduced in Model 3 it shows an odds ratio of 0.495 for women with young children compared to women without, or to put it differently: women with young children in the household are 2.02 times less likely to be employed (1/0.495). The effect of young children

overrides the effects of age and cohabiting as it reduced the effects of age and cohabiting on employment to near zero, making their contribution to the model negligible. From the differences between models two and three I can further deduce that women with young children at home were younger than those without (since the relation between age and employment was positive), and that women with young children at home were more often cohabiting (since the relation between cohabiting and employment was negative). That mothers of young children are younger and cohabit more often than women in general is not very shocking, but it is interesting that controlling for the presence of young children at home completely negates the contribution of age and cohabiting on employment. Furthermore, the introduction of young children reduces the correlation between personal attitudes and employment only by a bit, and not near as much as it reduces the effect of cohabiting. This means that the confirmation of my the hypothesis has little consequence for preference theory while it tells more about how the relative importance of the different factors from human-capital theory.

The fifth hypothesis is tested in model 4, where the effect of living in a liberal country on female employment is estimated. The effect is significant and women living in a liberal country are indeed more likely to work than women living in a traditional country (by about 1.2 times), but the addition of this factor does not increase our understanding of female employment by much compared to the other factors judging by the small improvement in -2 log likelihood. Taking into account country attitude also does not alter the relations between the other factors and employment by much, as can be observed from the minimal differences in b-coefficients and odds ratios between model 3 and 4. This means that none of the previously found correlations can be explained away by differences in country attitude.

Table 4.4.: The probability of being employed (Logistic Regression. 20-59 years, no students or pensioners) by personal attitude, age, cohabiting, education, children and country attitude. Interactions between personal attitude and children, and personal attitude and country attitude included. Unstandardized b-coefficients (standard error) and odds ratio's (Weighted $N = 11754$).

	Model 4		Model 5		Model 6	
	B (S.E)	OR	B (S.E)	OR	B (S.E)	OR
Constant	-0.704(.138)	0.494	-0.708(.138)	0.493	-0.712(.138)	0.491
Home-centered	-0.365(.060)***	0.694	-0.295(.082)***	0.745	-0.329(.061)***	0.720
Adaptive ref.						
Work-centered	0.170(.080)*	1.185	0.123(.101)	1.131	0.205(.089)*	1.228
Age	0.000(.002)	1.000	0.000(.002)	1.000	0.000(.002)	1.000
Education	0.150(.007)***	1.162	0.150(.007)***	1.162	0.150(.007)***	1.162
Cohabiting	-0.079(.050)	0.924	-0.077(.050)	0.926	-0.079(.050)	0.924
Children	-0.703(.047)***	0.495	-0.842(.113)***	0.431	-0.704(.047)***	0.494
Home-centered with children			-0.150(.120)	1.162		
Adaptive without children ref.						
Work-centered with children			0.274(.192)	1.315		
Liberal country	0.179(.068)**	1.197	0.179(.068)**	1.196	0.253(.076)**	1.287
Home-centered in liberal country					-0.747(.281)**	0.474
Adaptive in traditional country ref.						
Work-centered in liberal country					-0.215(.205)	0.807
-2 Log. likelihood	13636.86		13634.46		13629.26	
Omnibus -2 Log. X^2			2.40		7.60*	
Hosmer and Lemeshow X^2			35.82***		26.17**	
$*p < 0.05, **p < 0.01, ***p < 0.001$						

When I add an interaction effect between personal attitude and children into the regression equation, the omnibus test for improvement in -2 log likelihood indicates that there is no improvement in the model. Adding this interaction does not create a better prediction of employment. This can be explained from the observation that the effect of having young children living at home is not significantly different for home-centered and work-centered women compared to adaptive women. This is unexpected as my expectation based on the findings of Hakim was that the effect of children on employment is different for the three types of women (hypothesis 4). More specifically home-centered women are expected to have greatly reduced odds of employment when there are young children, adaptive women slightly decreased odds and the odds for work-centered women are expected to be about the same for women with and without young children. The b-coefficients do show that the impact of young children on employment is smaller for home-centered and greater for work-centered women compared to adaptive women, but the differences are not pronounced enough to be significant. This may be the due to the relative small sizes of the home-centered and work-centered groups compared to the adaptive group, but in absolute numbers all groups are large enough for this kind of analysis. The consequence is that based on these results it is correct to assume that European women make employment decisions in the same manner when they have young children at home, there is no need to differentiate between women based on their personal attitude.

Adding the interaction between personal attitude and country attitude on female employment does show a significant improvement in the model, $X^2 = 7.60, p = 0.022$. However, the results are not entirely as predicted in hypothesis 6. Home-centered women actually have greatly reduced odds of employment in liberal countries compared to traditional countries, where no real effect from country attitude is expected: the odds of employment are 1.64 times lower for home-centered women living in a liberal country compared to home-centered women in a traditional country$(1/(1.287 * 0.474))$. This may be a selection effect, that only women with very strong home-centered attitudes identify themselves as such in liberal countries which decreases the odds of employment for this group compared to the broader home-centered group in traditional countries. Adaptive women have significantly improved odds of employment in a liberal country as expected, by a factor 1.287. Work-centered women are expected to have slightly improved odds of employment in a liberal country, but the interaction shows that the effect of living in a liberal country is not significantly different from the effect living in a liberal country has on adaptive women. Work-centered women also have about the same odds of employment regardless of country attitude (1.287*0.807=1.04). This could also be explained by a selection effect, that only those women with the strongest attitudes identify themselves as work-centered

in a traditional country which increases the odds of employment for this group compared to work-centered women in a liberal country. Based on these results hypothesis 6 is rejected, but the results do not necessary put the assumptions of preference theory into question. The only assumption that Hakim makes is that attitudes are more important in liberal countries, which they are since the differences in odds of employment between the three groups of women are bigger in liberal countries. The hypothesis was based on the assumption that Hakim's expectations for responsiveness to social and economic policy could be substituted for responsiveness to country attitude, which these results prove to be incorrect. The consequence is that while the hypothesis is rejected, Hakim's assumption about the importance of attitudes in liberal countries appears to be validated by these results.

4.3. goodness of fit

I decided to use the results of my regressions analyses based on the omnibus test of model coefficients, which showed an improvement in -2 log likelihood of all models compared to the empty model and an improvement with each step of the model except for model 5. However, there are other measures of goodness of fit such as the Hosmer and Lemeshow test which I also reported in tables 4.3 and 4.4. For this test respondents are ordered from lowest to highest odds of employment and then divided in 10 equal groups. The groups are then compared on the predicted and actual values of employment. A chi-square test is applied to see if predicted values are significantly different from observed values, which means that a significant result indicates a bad fit. Models 2 to 6 all have significant chi-square scores for the Hosmer and Lemeshow test, so I plotted the observed and expected frequencies for model 6 in graph 4.1 to see if the frequencies of employment have a linear distribution over the odds percentiles, which is the assumption that the Hosmer and Lemeshow test is meant to measure.

Although the model does not fit with all the observed data points, it does appear that a linear model is a good way to generalize the data. There is some variance around the expected value, especially at the lower end, but it is not biased in such a way as to encourage a different type of model. Since the graph appear to show a linear distribution, and since the instructions for using logistic regression warn that the test is liable to indicate a bad fit for very large samples, I decided to ignore the results of the Hosmer and Lemeshow test. The plot does suggest that the model is not very good at predicting employment for women close to the critical value of 0.5, from where on women are classified as being employed.

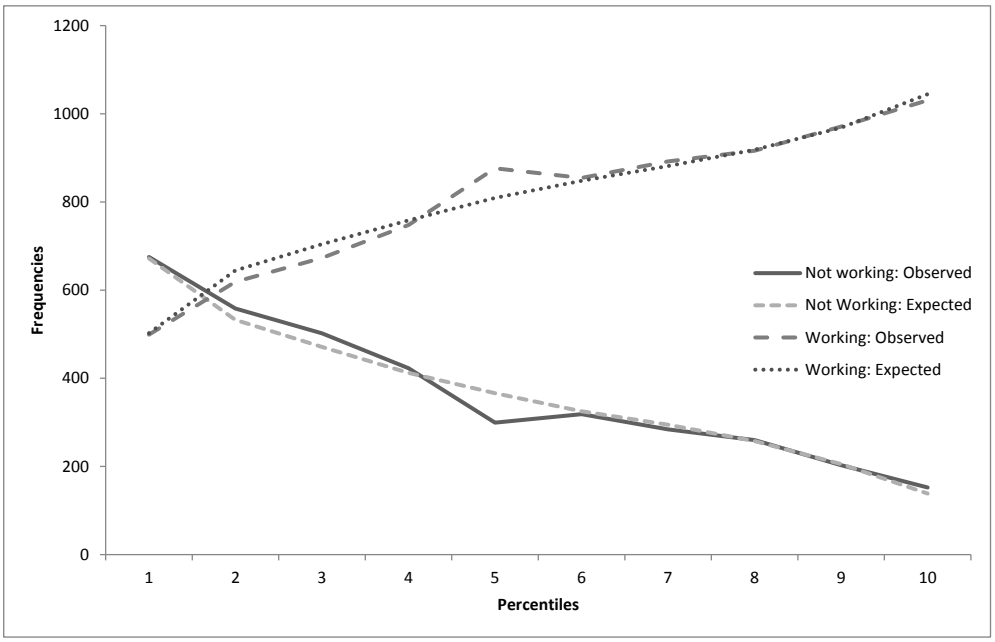

Figure 4.1.: Contingency Table for Hosmer and Lesmeshow test

4.4. predictive value

From the Hosmer and Lemeshow test it appears that there as some differences between observed and expected values of employment and non-employment, which is confirmed by the classification tables of the models. In the table below I have summarized the results of the classification tables for all models, including false positive and negative rates. The criterion used is 0.5, which means that women with a probability of 50% or higher to be employed were classified as employed and all women with a probability below 50% were classified as not employed.

Table 4.5.: Comparison of classification tables for all models (percentages)

	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Sensitivity	100	100	96.3	94.8	94.9	94.8	94.9
Specificity	0	0	11.6	16.2	15.8	15.7	16.0
False Positive Rate	31.3	31.3	29.4	28.7	28.8	28.8	28.7
False Negative Rate	-	-	40.9	41.7	41.5	42.0	41.5
Overal Percentage	68.7	68.7	69.8	70.2	70.2	70.1	70.2

The failure to predict non-employment stands out from the lack of specificity, all six models suffer from this problem. The first model which includes only personal attitude does not even predict non-employment once, it gives in fact the same prediction as the empty model. This can be explained from the results of the bivariate analyses: employment rates were above 50% for all groups of women across personal attitude, cohabiting, presence of children and country attitude. This means that the odds of employment for an individual women was above 50% regardless of those variables, which leads to a classification as 'employed' in the model. Only when multiple factors with a negative relation to employment show up together, such as a home-centered woman with a young child at home and just a few years of education the odds of employment drop below 50% and is that woman classified as not employed. Unfortunately, judging by the false negative rate, when a woman is finally classified as not employed this prediction is almost as likely to be wrong as it is to be right. So in practice these models predict almost all women to be employed and it is almost as often wrong as a model with just the constant that simply predicts 'employed' in every case. Overall the best model (6) is better only by the minimal margin of 1.5 percentage points, from which I conclude that the model is not good at predicting female employment. This does not mean that the models are useless, because the odds ratios still give a great deal of information about the relative odds of

employment for women with different characteristics. That is the information that I used in the analyses of my hypotheses. It does mean that for a new sample which only contains data on the independent variables used here it is not good idea to rely on these models to predict actual employment.

5. Conclusion

Hakim's preference theory contributes to the understanding of female employment in modern, European societies. Even though Hakim acknowledges only two countries to have achieved the new scenario in which women's lifestyle preferences determine choices, I found that home-centered women are 1.4 times less likely to be employed than adaptive women, and that work-centered women are 1.2 times more likely to be employed than adaptive women. These results have been controlled for differences in age, years of education completed, cohabiting with a husband or partner, having children aged 12 or younger living at home and living in a traditional or liberal country. This means that my first research question: "*Do work-centered women work most often, followed by adaptive and then home-centered women?*" is confirmed. However, personal attitude was not the primary determinant of female employment out of all these factors as Hakim expects to be the case in the new scenario of genuine choice for women. Two factors from human-capital theory did show a stronger relation with female employment than personal attitude: years of education completed and the presence of young children at home. This means that while preference theory can be applied in a multi-national setting that includes countries where not all of the changes necessary for the new scenario have been completed, researchers should be aware that factors such as education and children are more important for female employment than attitudes.

It proved to be unnecessary to take into account female heterogeneity when estimating the impact of children on female employment. The model that included the interaction effect between children and personal attitude on employment failed to show a significant improvement in the -2 log likelihood over the model that included the effect of children without interaction effect. This means that my second research question: "*Is the presence of children more important for the employment decisions of home-centered women than for those of adaptive women, and not important for those of work-centered women at all?*" is answered with a negative, and that I failed to produce the same results as Hakim with my setting. This does limit the usefulness of preference theory, as the need to differentiate between groups of women to produce valid statements about which social factors determine female work rates is one of the arguments for applying preference theory

in research and policy studies [Hakim, 2002, 447]. It is possible that there is not much difference between home-centered, adaptive and work-centered women in the effect that children have on work rates because the countries in my sample have not moved far enough in the direction of the new scenario of Hakim, in particular when it comes to the creation of jobs for secondary earners. The majority of (adaptive) women wants to combine work and family responsibilities, but when not enough suitable jobs are available that allow them to do so most adaptive women put family before work which means there are no observable difference between home-centered and adaptive women. However, this would not explain why there is no significant difference between adaptive and work-centered women. It appears that work-centered women with young children simply forego their career or put it on hold, which raises the question if that is their actual choice or not. Judging from the distribution of women across traditional and liberal countries in the weighted sample there is a good reason to assume that most women in my sample did not have a genuine choice in how to combine employment and children, as only 11% of the women lived in liberal countries.

Differences in country attitude proved to be important, as the model that included the interaction effect between country attitude and personal attitude was a significant improvement over the models without this interaction. Home-centered women are 1.6 times less likely to work in a liberal country than in a traditional country. Adaptive women are about 1.3 times more likely to work in a liberal country and work-centered women are not more likely to work in a liberal country than in a traditional country. These findings disconfirmed my hypothesis about the effect of this interaction on the odds of employment, which means that women do not respond to country attitude in the same manner as they respond to social and economic policy as I assumed. However, these results do confirm my third research question: "*Are differences in employment between the three groups of women larger in liberal countries than in traditional countries?*". After all, the difference in odds of employment between women with different attitudes are larger, other factors being equal, in liberal countries. This means that gender role attitudes explain more about female employment in liberal countries than in traditional countries. Consequently, studies that want to use preference theory should consider the country attitude, or better yet the degree to which the changes described by Hakim [2002] have occurred in the countries under investigation.

By testing testing Hakim's preference theory in a multi-national setting I was able to determine that gender role attitudes contribute to the understanding of female employment, and that the usefulness of differentiating between home-centered, adaptive and work-centered women is not limited to only those countries that have achieved the new

scenario of genuine choice for women. However, in such a setting women's attitudes are not the primary determinant of female employment, so preference theory can only provide an addition to other explanations such as human-capital theory. I also found that in such a setting it is not as important to take into account female heterogeneity as Hakim claims when producing statements about the effects of social factors on female employment, at least for the impact of children. My estimation is that making this distinction is more important when investigating countries closer to the new scenario. This brings me to the final contribution of my thesis, I was able to establish that women's gender role attitudes are more important for their employment behavior in liberal countries than in traditional countries. This is one of the central assumptions of Hakim's preference theory, but since Hakim only tests her theory in countries that have met her criteria of the new scenario this assumption lacked support. In conclusion, the answer to my main research question: "*Under what circumstances do women's gender role attitudes explain female employment in European countries?*" is the following. Women's gender role attitudes partially explain female employment in European countries while controlling for age, education, cohabiting, children and country attitude; when there are young children at home the differences in employment between home-centered and adaptive women, and between adaptive and work-centered women are not larger or smaller than when there are no young children; but in liberal countries the differences in employment between home-centered and adaptive women are larger than in traditional countries.

The most practical application of Hakim's preference theory comes from her typology of home-centered, adaptive, and work-centered women and how they are likely to respond to different types of factors such as social, economic and family policy, family wealth, economic upturns and downturns, child care services etc. [Hakim, 2002, 436]. Since my research indicates that interactions between personal attitude and other factors are not so relevant in a setting that includes many traditional countries I would advise anyone who wants to study determinants of female employment using preference theory to first check how liberal the countries in the sample are, or how far the countries are in the changes necessary for the new scenario. In the more traditional countries the use of preference theory based interactions would unnecessarily complicate the study. Policy makers and policy advisers in countries that have achieved the new scenario for women or that are close to it should take into account female heterogeneity for policy related to female employment. This means that when using case studies, the distribution of home-centered, adaptive and work-centered women in the sample should be representative of the population or estimations of policy success will be off.

These recommendations do presuppose a method of measuring how close a country is

to making the new scenario of genuine choice for women, based on which researchers and policy makers/advisers alike can decide to apply preference theory or not. Unfortunately, Hakim's discussion of the historic changes in society and in the labor market that produce the new scenario do indicate what variables are important (female control over fertility, equal opportunities legislation, white-collar occupations, secondary earner jobs, importance of attitudes) but not what measures can be used or what benchmarks are necessary to speak of 'genuine choice'. A research design that could bring preference theory further would have to include measures of country progress on the five changes. For example countries could be ranked or grouped based on scores for fertility control, equal opportunity legislation, white-collar occupations and creation of secondary earner jobs and then tested for the importance of attitudes relative to other factors for female employment. Add in an interaction effect for children and attitudes and it becomes possible to determine when or where it is important to take into account female heterogeneity when estimating the impact of social factors on female employment.

6. Bibliography

J.W. Albrecht, P.A. Edin, and S.B. Vroman. A cross-country comparison of attitudes towards mothers working and their actual labor market experience. *Labour*, 14(4): 591–607, 2000. ISSN 1467-9914.

G.S. Becker. *A Treatise on the Family.* Harvard University Press, Cambridge, Massachusetts, 1981.

G.S. Becker. Human capital, effort, and the sexual division of labor. *Journal of Labor Economics*, pages 33–58, 1985.

M. Braun, J. Scott, and D.F. Alwin. Economic necessity or self-actualization? attitudes toward women's labour-force participation in east and west germany. *European Sociological Review*, 10(1):29, 1994.

A.H. Eagly and W. Wood. The origins of sex differences in human behavior: evolved dispositions versus social roles. *American Psychologist*, 54(6):408, 1999.

ESS Round 2: European Social Survey. *ESS-2 2004 Documentation Report.* Norwegian Social Science Data Services, Bergen, European Social Survey Data Archive, 3.3. edition, 2011.

T.N. Greenstein. Gender ideology, marital disruption, and the employment of married women. *Journal of Marriage and the Family*, 57(1):31–42, 1995. ISSN 0022-2445.

C. Hakim. Developing a sociology for the twenty-first century: preference theory. *The British Journal of Sociology*, 49(1):137–143, 1998.

C. Hakim. Lifestyle preferences as determinants of women's differentiated labor market careers. *Work and Occupations*, 29(4):428, 2002.

C. Hakim. Public morality versus personal choice: the failure of social attitude surveys. *The British Journal of Sociology*, 54(3):339–345, 2003.

P. McDonald. Gender equity, social institutions and the future of fertility. *Journal of Population Research*, 17(1):1–16, 2000. ISSN 1443-2447.

M. Nordenmark. Does gender ideology explain differences between countries regarding the involvement of women and of men in paid and unpaid work? *International Journal of Social Welfare*, 13(3):233–243, 2004. ISSN 1468-2397.

J.G. Polavieja. The effect of occupational sex-composition on earnings: Job-specialization, sex-role attitudes and the division of domestic labour in spain. *European Sociological Review*, 24(2):199, 2008.

R.R. Rindfuss, K.B. Guzzo, and S.P. Morgan. The changing institutional context of low fertility. *Population Research and Policy Review*, 22(5):411–438, 2003. ISSN 0167-5923.

J. Scott. European attitudes towards maternal employment. *International Journal of Sociology and Social Policy*, 19(9/10/11):144–177, 1999. ISSN 0144-333X.

O. Sjöberg. The role of family policy institutions in explaining gender-role attitudes: a comparative multilevel analysis of thirteen industrialized countries. *Journal of European Social Policy*, 14(2):107, 2004.

A. Vitali, F.C. Billari, A. Prskawetz, and M.R. Testa. Preference theory and low fertility: A comparative perspective. *European Journal of Population/Revue européenne de Démographie*, 25(4):413–438, 2009.

A. First Appendix

Table A.1.: Descriptives by country: women aged 20-59, pensioners and students excluded ($N = 15041$).

			Personal attitude			Cohabiting	Children	Education		Age		Country attitude	
Country	*N*	Employment	Home-centered	Adaptive	Work-centered			*M*	*SD*	*M*	*SD*	*M*	*SD*
Austria	733	74.1%	11.3%	80.0%	8.8%	72.2%	31.7%	12.37	2.82	41.46	9.26	2.74	1.13
Belgium	575	63.8%	12.1%	70.9%	17.0%	69.4%	33.4%	13.05	3.97	40.34	10.99	3.07	1.25
Switzerland	739	74.2%	11.4%	83.7%	4.9%	63.1%	38.3%	10.95	3.40	40.59	10.26	2.41	0.99
Czech Republic	867	70.2%	14.7%	77.4%	8.0%	65.6%	34.5%	12.62	2.21	40.20	10.55	2.51	1.10
Germany	854	68.4%	7.1%	82.1%	10.8%	72.8%	33.1%	13.44	3.00	41.20	9.85	2.83	1.01
Denmark	452	84.7%	2.2%	74.9%	22.8%	77.2%	40.3%	14.33	3.17	42.33	10.28	3.57	1.08
Estonia	626	80.7%	10.2%	86.3%	3.4%	66.9%	35.5%	13.55	2.91	40.82	10.71	2.49	0.95
Spain	529	62.6%	11.5%	81.0%	7.5%	66.5%	29.7%	12.28	5.28	39.04	10.45	2.66	1.12
Finland	584	83.0%	4.1%	79.2%	16.6%	72.6%	34.4%	14.32	3.53	42.06	10.63	3.33	1.09
France	588	76.2%	18.2%	66.8%	15.0%	70.5%	42.2%	12.80	3.73	40.72	10.49	2.68	1.29
United Kingdom	618	66.0%	8.8%	85.2%	6.0%	58.4%	47.0%	12.66	2.99	39.49	10.43	2.73	1.04
Greece	753	48.2%	10.1%	78.6%	11.3%	75.2%	32.8%	11.43	4.11	39.61	10.10	2.81	1.16
Hungary	480	69.4%	21.3%	73.7%	5.1%	68.1%	31.0%	12.00	2.99	40.58	10.92	2.36	1.12
Ireland	823	64.0%	5.9%	87.4%	6.7%	67.3%	39.1%	13.31	3.15	41.41	10.68	2.78	1.05
Iceland	195	86.2%	3.2%	86.3%	10.5%	73.8%	50.0%	14.31	3.79	40.02	11.36	3.23	1.02
Luxembourg	483	63.1%	18.2%	76.0%	5.8%	75.6%	40.8%	11.81	4.43	40.40	10.18	2.49	1.08
Netherlands	695	68.8%	3.2%	84.2%	12.7%	70.6%	35.5%	12.86	3.45	42.56	10.07	3.14	1.15
Norway	563	82.1%	2.9%	80.4%	16.8%	76.0%	39.1%	14.04	3.41	41.80	10.31	3.28	1.05
Poland	498	67.3%	14.1%	82.7%	3.3%	77.5%	42.0%	12.94	2.94	37.60	10.30	2.49	1.03
Portugal	662	65.0%	11.9%	84.0%	4.1%	68.9%	37.2%	8.72	4.60	39.89	10.65	2.36	0.94
Sweden	561	82.4%	0.7%	83.7%	15.6%	74.0%	33.8%	13.21	3.08	42.09	11.06	3.40	0.99
Slovenia	364	79.4%	7.0%	88.3%	4.7%	74.4%	35.3%	12.12	3.21	39.40	9.77	2.86	1.04
Slovakia	440	66.1%	4.7%	90.7%	4.7%	70.9%	39.0%	12.37	2.81	37.48	10.27	2.86	0.98
Turkey	729	13.4%	22.8%	74.6%	2.6%	78.9%	52.8%	5.70	4.03	36.03	10.48	2.18	1.05
Ukraine	630	67.6%	26.8%	69.3%	3.9%	66.7%	35.1%	12.92	2.42	39.74	10.34	2.10	1.01

B. Second Appendix

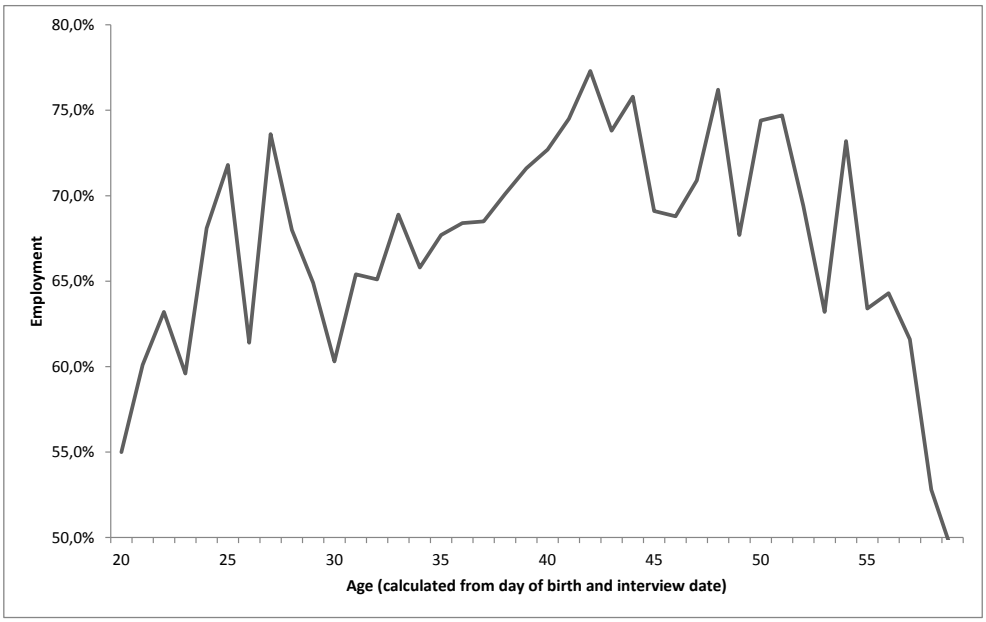

Figure B.1.: Employment by Age: women aged 20-59, excluding students and pensioners, weighted by design and population weights ($N = 12031$).

C. Third Appendix

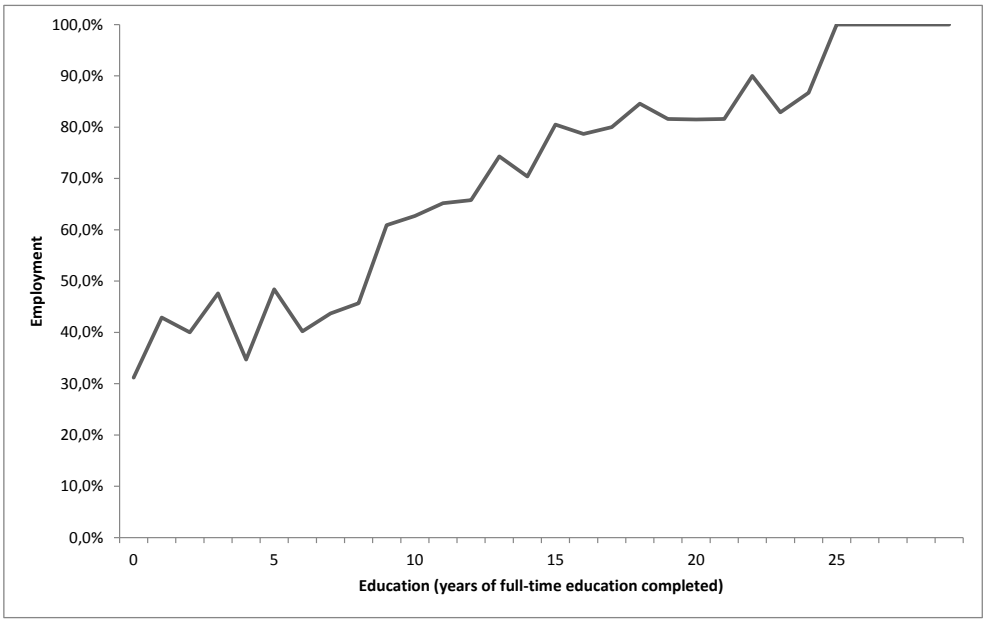

Figure C.1.: Employment by Education: women aged 20-59, excluding students and pensioners, weighted by design and population weights ($N = 12045$).