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Gender Role Attitudes in Luxembourg Between 1999 and 2008¹

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Abstract

This paper uses European Values Study (EVS) data from 1999 and 2008 to examine the evolution of gender role attitudes in Luxembourg. The paper focuses on three aspects of the attitudinal changes. First, it analyses whether the gender role beliefs measured by three scores (childcare, homemaking and economic aspects) have changed during the past decade. Second, it examines whether these changes have equally touched men and women of different age categories. Third, it analysis whether the gender gap in attitudes towards gender roles diminishes over time. The outcomes of the analysis reveal that during the past ten years Luxembourg's residents have become significantly less traditional regarding gender role attitudes, mainly when it comes to attitudes towards the consequences of female employment on children and the economic aspects of the gender roles. Young women are the strongest supporters of the more egalitarian division of labour between the sexes, while young men lag behind their female counterparts. This gender gap appears to persist especially in case of attitudes towards homemaking.

Keywords: attitudes, gender roles, sex gap, EVS

JEL classification codes: D63; Z13

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1. Introduction

The traditional division of labour between the genders, where men function as breadwinners and women as homemakers and carers, emerged during the industrialization of the second half of the 19th century and prevailed as a dominant form of gender contract till the middle of the 20th century. In the 1960s, this traditional model was challenged by female emancipation, the increasing human capital of women, the declining role of the traditional marriage and parenthood, the ageing process, a constantly increasing share of the service sector in national economies and, consequently, growing female participation in the labour market (Pfau-Effinger, 2004; Esping-Andersen, 2002; Kalmijn, 2003; Valentova, 2006).

Industrialized countries differ with respect to the pace of the listed changes. One of the countries with the most dramatically changing landscape in female labour market participation is Luxembourg. According to Eurostat (2011), the female employment growth rate in Luxembourg (on average 5.5%) has been one of the highest in the EU27 countries during the period 1999–2008, together with Spain, Cyprus and Italy. This drastic change in behaviour raises questions as to how this resonates in people's beliefs and attitudes. As sex and age are the most powerful predictors of attitudes towards gender roles (Berridge et al., 2009), it is important to examine whether men and women of different age categories are equally affected. The paper aims to explore three aspects of attitudinal change regarding gender roles. First, it analyses how the gender role beliefs, evolved during the last decade, were characterized by a drastic increase in female labour-market participation. Second, whether men and women in different age categories, and consequently different life course stages, exhibit significantly different attitudes towards the issue. Third, whether differences in gender ideology among men and women of different age categories have diminished or increased during the past ten years. As Luxembourg is an immigrant country with a relatively high yearly inflow of immigrants and a total increase in the foreign population of 6% between 1999 and 2008 (from 37% in 1999 to 43% in 2008, according to STATEC (2009), we look at how the newcomers contribute to these changes.

In the literature on changes in gender role attitudes, very little concern is dedicated to the interaction of time period, sex and age effects. To our knowledge, this paper is one of the first efforts in analysing whether the time period influences attitudes towards gender roles with the same intensity across men and women of different age categories, that is, whether some categories of respondents of a certain age change their attitudes over time significantly more than others. Additionally, the paper provides information on the situation in Luxembourg, a country that has been under-researched with respect to the division of labour between the genders and gender role attitudes.

The paper is structured as follows. The first section conceptualizes gender roles and attitudes towards them in industrialized countries, including Luxembourg. The second section provides information on the data, used variables and methodology. The third section presents the outcome of the empirical analyses. The final section summarizes the main findings of the paper.

2. Attitudes Towards Gender Roles

Lopata Znaniecka (1994) defines social roles, including gender roles, as a set of patterned, mutually independent social relations between a social person and a social circle, involving negotiated duties and obligations, rights and privileges. Social roles are internalized during the socialization process during which individuals construct their gender identity. This identity is carried through life's course and affects/influences different relationships.

The literature (Gornick & Meyers, 2003; Lopata Znaniecka, 2006; Van Donge, 2009) suggests that due to industrialization and profound economic and social reorganization at the end of the 19th century, men and women assumed more separated roles where men were considered as breadwinners and women as homemakers. This particular division of tasks and life domains between men and women has been labelled as the 'traditional male breadwinner and female homemaker model' (Gornick & Meyers, 2003). This model was dominant in most Western countries in the period 1930–70 and in subsequent decades it has tended to shift towards the dual-earner model.

However, the pace and the extent of the changes in gender roles vary significantly from country to country, depending heavily on a country's welfare state, labour market and gender regime settings (Hantrais & Letablier, 1996; Sainsbury, 1996; Esping-Andersen, 2002; Pfau-Effinger, 2004). According to some authors (Goodin et al., 1999; Van Dongen, 2009), Luxembourg may be classified as a corporatist country where the male-breadwinner model still plays a relatively important role, similarly in Austria, Belgium, France and Germany. In these countries, multiple efforts have been made during the past decades to increase female labour market participation and to introduce provisions for family–work reconciliation. Despite this, they are still lagging behind more gender equilibrated systems, for example those of the Nordic countries. However, it needs to be repeated here that Luxembourg progresses rapidly with respect to the engagement of women in the labour market (see the aforementioned female employment growth during the past ten years). These labour market changes have been accompanied by policy efforts to facilitate the reconciliation of paid labour and family life, specifically by introducing a statutory parental leave scheme and family leave in 1999 and a childcare voucher system in 2009 (Valentova 2011).

Ruble and Martin (1998) suggest that attitudes towards gender roles reflect beliefs that there are particular social roles for which men and women are best suited; Deaux and LaFrance (1998) similarly define gender role attitudes as people's views of the social roles performed by men and women. Braun et al. (2004) states that gender role attitudes cover beliefs concerning various aspects of everyday activities, for example: global division of labour between men and women regarding paid and unpaid/domestic work, involvement and functioning in politics or issues related to sexuality. The author, however, points out that division of labour between men and women is primordial to understanding gender roles and covers three main issues: the consequences of female employment on family life (education of children, relationship with partner), economic consequences of female employment (financial independence of women, contribution of both partners to the household budget), and general gender ideology (what men and women in general should/should not do). Berridge et al. (2009) distinguish two types of views about gender roles: on the one hand the traditional/non-egalitarian view and on the other the non-traditional/egalitarian. The former type supports the above described male-

breadwinner model while the latter demonstrates the symmetrical image of gender roles calling more for the dual-earner and dual-carer model.

2.2 Changes in gender role attitudes

Attitudes towards gender roles in industrialized countries are changing dramatically and becoming, in general, less traditional, meaning that people tend to support less a traditional division of labour between men and women (Kalmijn, 2003; Fortin, 2005; Berridge et al., 2009). This is in line with the evolution at the behavioural level described in the previous section. Attitude changes may be a cause or a consequence of changing patterns of female labour market participation. Thus, there is association between these two phenomena; however, it is not possible to clearly identify a causal relationship between them.

The pace of this de-traditionalization of gender role attitudes varies across countries (Kalmijn, 2003; Crompton & Harris, 1999; Crompton et al., 2005; Sjoberg, 2004; Scott et al., 1998). These differences might be partially due to so called institutional determinism (Inglehart et al., 1998) or institutional nationalism (Forma & Kangas, 1999). These theories suggest that people tend to perceive existing institutions as a reference point, that is, as something that is considered to be normal. They have a tendency to take them for granted and interpret their world in the light of these institutions. People perceive the institutions they are familiar with as better than those that are alien to them. Thus, in countries with institutions that promote the traditional male-breadwinner model, people might be more likely to adapt positive attitudes towards this traditional division of labour between men and women.

It also needs to be considered that not all aspects of gender role attitudes are equally susceptible to change. For example, Fortin (2005) points out that attitudes regarding homemaking are formed in youth and are related to religious beliefs and are more persistent over time than anti-egalitarian attitudes. Anderson and Johnson (2002) and Sjoberg (2010) point in a similar direction and show that attitudes towards gender roles in some life domains (for example, gender equality in the labour market, employment and financial independence) become more egalitarian over time, while

perception of homemaking tends to remain rather traditional, especially when it comes to motherhood and partnership. This ambivalence is due to conflicting expectations and social norms predominant in different life domains. In concrete terms, people tend to express more traditional attitudes when they are asked about gender roles in the domestic/informal life domains than when they refer to public/formal spheres of life, such as, for example, the labour market.

2.3 Determinants of changes in gender role attitudes

Kalmijn (2003) summarizes the factors behind the shift from traditional to more gender equilibrated attitudes and groups them in two main categories: the cultural, including mainly secularization and individualization (Kalmijn, 2003), and economic, mainly related to the expansion of the service sector that led to the increase in demand for female workers and, consequently, to the higher participation of women in the labour market. However, in this paper we focus mainly on basic socio-demographic characteristics such as age, sex and time period.

When it comes to individual predictors of gender role attitudes and their changes, Berridge et al. (2009) provide evidence that sex and age are the most powerful determinants. With regard to gender, the vast majority of studies (Knudsen & Waerness, 2001; Sjoberg, 2004; Alwin et al., 1992; Treas & Widmer, 2000; Crompton et al., 2005; Berridge et al., 2009) report that women are less likely than men to exhibit traditional attitudes towards gender roles. The emancipation of women and the evolution in their attitudes has not been followed by adequate changes in men's attitudes. Thus, men and women do not contribute equally to the attitudinal shift towards the more gender equilibrated division of labour (Braun et al., 1994; Lewis & Astrom, 1992; Berridge et al., 2009). One possible explanation for the persistence of the traditional gender role view among men is, according to Riley (2003), that the support of the stereotypical male-breadwinner model is primarily one of producing the masculine identity, as paid employment is one of the main sources of masculine identity available to men.

With respect to age, it was found that younger respondents have a less traditional perception of the division of labour between men and women than older ones (Knudsen

& Wearnes, 2001; Sjoberg, 2004; Alwin et al., 1992; Treas & Widmer, 2000; Berridge et al., 2009; Vespa, 2009). However, while interpreting the effect of age on attitudes one should keep in mind that there are three possible approaches in the game: time period, cohort and life-course effects. A period perspective is built around the argument that attitudes are formed under certain historical settings (i.e. in a particular historical context). Given this, people might demonstrate different attitudes during different time periods as a reaction to the changing context. A cohort approach assumes that individuals who were born in the same period and were exposed to similar context changes will exhibit similar attitudes, distinctive from those of individuals of different generations (Philipov, 2008). The life-course approach claims that attitudes depend, among other things, on the particular life stage and life experiences with which a person is confronted. The relation between age and gender role attitudes is not linear and depends significantly on experiences throughout life's course (Vespa, 2009). Experiences, such as marriage and parenthood, are important sources of attitudinal changes (ibidem). From this can be deduced that there are reproductive periods in an individual's life, when attitudes shift due to exposure to new settings and roles. The patterns described above, where women, mainly younger ones, tend to adopt a less traditional stance towards gender roles and, thus, can be considered to be the real vehicles of attitudinal shift, has also been confirmed in Luxembourg using the European Values Study (EVS) data from 1999 (Valentova 2008).

When speaking about Luxembourg and changes in gender role attitudes, it should not be forgotten that the country has a long immigration history, with one of the highest inflows of immigrants in the OECD countries (OECD 2001). The proportion of foreign-born residents increased by approximately 6% between 1999 and 2008 (STATEC 2009). The newcomers came mainly from Portugal (about 30%), France (18%), Belgium (17%), Germany (8%), Eastern and Central Europe (8%) and other EU15 countries (6%). They are predominantly of productive age. Valentova (2011a) claims that, according to the outcomes of cluster analysis based on the EVS data from 2008 from the EU27 countries, Luxembourg residents demonstrate gender role attitudes closest to those of the inhabitants of France. A relative proximity has been also observed among Luxembourg and some of the continental and southern European countries (Germany, Belgium and

Spain) and some eastern European countries (Slovenia, Slovak Republic, Bulgaria and Hungary). Compared to these countries, Portugal shows less proximity to Luxembourg, yet its proximity is still greater than, for example, the Nordic and Anglo-Saxon countries. Having put the above pieces of information together, it can be deduced that more than half of the immigrants coming to Luxembourg since 1999 have exhibited similar gender role attitudes.

2.4 Hypotheses

Deducing from the above arguments concerning the time evolution of gender role attitudes, the effect of sex and the position in life's course (age), it can be hypothesized:

1. As in the majority of industrialized countries, gender role beliefs have evolved during past decades towards a more gender egalitarian direction (Fortin, 2005; Kalmijn, 2003), the same changes can be expected in Luxembourg, especially due to the significant increase in female labour participation.
 - 1.a The greatest changes are expected in the dimensions of gender role attitudes dealing directly with female employment and child care as the greatest behavioural changes were observed at this level.
 - 1.b Following Fortin's (2005) arguments, it can also be hypothesized that attitudes towards homemaking will be relatively time-invariant.
2. The changes in attitudes are not equally distributed between men and women of different ages. Younger women are more likely to adopt less conservative views regarding gender roles.
3. Due to the contextual adjustment processes where people adapt more liberal attitudes towards gender roles when the relative number of working women in their surroundings is increasing, it can be inferred that the differences between men and women, mainly of the youngest generation, will have narrowed over the last ten years.

3. Data and Methodology

The analyses are based on the EVS for Luxembourg. The data consists of two independent representative samples of individuals living in Luxembourg in 1999 and 2008. The cross-sectional nature of the data allows for trend analysis and across time comparisons of gender role attitudes. The pooled samples from 1999 and 2008 consisted of a representation of 2,354 residents of Luxembourg, who were 18 years old or over. The sample data have been weighted to represent the adult population of the country and to equalize the number of cases in the two analysed waves.

Due to the significant inflow of immigrants during the last decade the socio-demographic composition of the cohorts has changed, especially when it comes to nationality and gender (Fleury, 2010). This important change in the population structure over time is due to immigration having an impact on our methodological choices. Fleury (2010) points out that, for the above reasons, it is not possible to conduct a detailed cohort analysis in Luxembourg using the EVS data of 1999 and 2008. Given this, to answer the research questions, we will not use the age-period-cohort (APC) decomposition approach as proposed, for example, by Mason et al. 1973, Mason & Fienberg, 1985 or Yang et al. 2004 but we will estimate three sets of interactive ordinary least square (OLS) models, where three dimensions of gender role attitudes are dependent variables and the independent variables of interest are the time period (year of the realization of the EVS survey), men and women in different age categories (men and women in different stages of life's course) and the interactions between the categories of these variables. In all the regression models we controlled for a number of individual level characteristics that are known to influence gender role attitudes.

For each dependent variable we estimate a set of regression models. Model 1 estimates the effect of the composite variable of sex in different life course stages and time periods while all other variable are kept constant. In Model 2, we add a dummy variable indicating the period of the survey. Model 3 is enriched by interaction terms

between the period and the composite variable of sex and age to test for the moderating effect of the period.

Given the fact that Luxembourg is an immigration country, we checked whether the inflow of immigrants, who entered the country after 1999, affected the attitudes towards gender roles in the country. To realize this check two models are estimated for each dependent variable. Model 4 estimates the coefficients of the above specified Model 2 but only for the restricted sample of Luxembourg residents (i.e. all newcomers who settled in the country after 1999 are excluded). Model 5 is the replication of Model 3 on the restricted sample. If models excluding newcomers yield similar results to the models including the whole sample, the effect of immigration between 1999 and 2008 on the main findings can be excluded.

3.1 Dependent variables

As already mentioned in the theoretical part of the paper, gender roles can be operationalized in many different ways. However, a large part of the empirical evidence is based on the data that focus mainly on division of labour between men and women (especially on the division of paid labour-market labour and unpaid domestic labour)².

To create indicators of attitudes towards gender roles we use a battery of seven items from the 2008 EVS survey as this is the only recent data source covering this topic in Luxembourg that allows for comparisons over time. The items and distribution of the responses are described in Table 1 below.

² The most frequently used questions in Europe come from: the International Social Surveys Program (ISSP 1996, 2002), the Population Policy Acceptance Survey (PPAS 2001), the World Value Study (WVS), the European Value Study (EVS 1981, 1990, 1999 and 2008) and the European Social Survey (ESS 2004). Items measuring gender role attitudes overlap in the ISSP, PPAS and EVS surveys and are widely used even if the reliability of some of the items has been questioned by Braun et al. (1994), Braun (1998), Philipov (2008), Sjoborg (2010). Similar measures of gender role attitudes were used in some US surveys such as the General Social Survey or the National Longitudinal Survey of Youth (NSLSY).

Table 1: Distribution of answers to gender role questions

	Agree strongly	Agree	Disagree	Disagree strongly	Missing
V1 A working mother can establish just as warm and secure a relationship with her children as a mother who does not work	52.2	26.2	14.0	5.4	2.2
V2 A pre-school child is likely to suffer if his or her mother works	24.7	36.3	22.8	12.6	3.6
V3 A job is alright but what most women really want is a home and children	17.3	29.6	27.5	14.7	10.9
V4 Being a housewife is just as fulfilling as working for pay	26.3	30.2	21.9	11.5	10.1
V5 Having a job is the best way for a woman to be an independent person	51.8	30.5	9.9	3.7	4.1
V6 Both the husband and wife should contribute to household income	33.7	27.1	25.7	9.1	4.4
V7 In general, fathers are as well suited to look after their children as mothers	46.4	33.3	14.0	3.0	3.3

Source: EVS 1999 and 2008, CEPS/INSTEAD, N=2,354

The question: "People talk about the changing roles of men and women today. For each of the following statements I read out, can you tell me how much you agree with each. Please use the responses on this card"

Response categories were as follows: agree strongly (1), agree (2), disagree (3), disagree strongly (4). Before running the analysis, three of the items have been re-polarized, so that lower values indicate liberal/non-traditional attitudes towards gender roles. The missing values (including both no response and the 'do not know' category) have been replaced. When the percentage of missing values was smaller than 2.5% the missing values were replaced by the mode value of the variable. When the percentage exceeded this threshold optimal scaling was used to identify to which out of four points the missing values are the closest.³ The missing values were replaced by the most proximate value. The attempts to reduce the amount of information and create a sum score of gender role attitudes has been made by employing a principal component analysis (see Table 2).

³ As the percentage of missing values was lower than 2.5% in the case of V1, the missing values were replaced by the mode, that is, value 1.

Replacement of the missing values of the remaining 6 items (percentage of missing values higher than 2.5%) was based on the outcomes of optimal scaling analyses. Missing values (coded as an extra category) were replaced by the value of the closest category as indicated in the optimal scaling plots (using 3 dimensions): in the case of variables V2, V3, V5, V6, V7 the missing values = 2 and, in the case of variable V4, the missing values = 3.

Table 2: Three dimensions of gender attitudes: contributing statements and their factor loadings

	Pooled sample			Wave 1999			Wave 2008			Women			Men		
	F1	F2	F3	F1	F2	F3	F1	F2	F3	F1	F2	F3	F1	F2	F3
V1 A working mother can establish just as warm and secure a relationship...	.169	.746	.067	.192	.716	.072	.162	.767	.040	.199	.715	.107	.103	.775	.037
V7 In general, fathers are as well suited to look after...	-	.717	.176	-	.738	.135	-	.694	.173	-.094	.754	.093	-.141	.667	.264
V6 Both the husband and wife should contribute...	-	.234	.751	-	.281	.742	-	.096	.760	-.089	.226	.778	-.072	.235	.733
V5 Having a job is the best way for a woman...	.085	-	.775	.029	-	.799	.161	.071	.743	.165	-.010	.761	.074	-	.766
V4 Being a housewife is just as fulfilling as working... (reversed scale)	.119	.011	.302	.090	.056	.333	.148	.259	.715	.122	.333	.778	.028	.249	.082
V2 A pre-school child is likely to suffer... (reversed scale)	.740	-.107	.570	.508	-.144	.587	.439	-.199	.590	.462	-.068	.502	.534	-.296	*
V3 A job is alright but what most women really want ...(reversed scale)	.572	.495	-.171	.799	.041	-.075	.784	.076	-.099	.801	.085	-.063	.775	.074	-.141
Scale Reliability – raw scores (Crombach Alpha) 1 concerning shaded items	0.55	.383	.419												

Source: EVS 2008, CEPS/INSTEAD, N=2,354

Note: Variance explained by 3 factor solution for pooled sample: 60.753%. The table shows the component matrix after Varimax rotation.

*In the case of male respondents the item V2 loads similarly on two factors (F1 and F2). As the factor loadings do not differ dramatically the structure of the invariant factors can be assumed.

The outcomes of the principal component analyses on the pooled data fully corroborate the previous findings based on the international pooled data published by Kalmijn (2003) and Philipov (2008) and partially corroborate the results presented by Braun et al. (2004), and Halman and Vloet (1994) and suggest that there are three factors consisting of the following items:

- *Factor 1 (F1-homemaking)*: being a housewife is equally satisfying as working for pay, pre-school children suffer if the mother works, what women really want is a home and children,

- *Factor 2 (F2-childcare)*: working mothers can have warm relations, fathers are just as suited to look after children as mothers,
- *Factor 3 (F3-economic)*: both partners should contribute to household income; a job is the best way for women to be independent.

The above structure was in general corroborated by Confirmatory Factor Analysis (CFA). The CFA analysis suggests modifying the model by adding correlation of error terms between items V1-V6, V2-V6 and V3-V5. This model fit diagnostics are as follows: Chi-Square = 71.305, DF = 7, P-Value = 0.00; CFI = 0.964, RMSEA = 0.065.

In the following step, we tested for a factor's structural invariance between different groups of Luxembourg residents (i.e. between respondents interviewed in 1999 and in 2008 and between men and women). To get a preliminary overview, principal component analysis was conducted for each subgroup and whether the above presented factor structure is the same across the groups was verified. The outcome of this analysis corroborates the existence of the same structure (see Table 2, columns 3–5). In a second step, we conducted a test of invariance assuming that the pattern of zero and non-zero loadings is the same across the groups (Brown, 2006) using group comparisons in CFA (GCCFA). The model fit diagnostics reveal that the structure is indeed invariant across time and between the sexes. Detailed outcomes of the GCCFA analysis are not presented in the paper but are available upon request⁴.

A sum score was calculated for each of the factors (as, for example, used in Vespa 2009). The lower the score, the more liberal (i.e. the more gender equilibrated) the stance the respondent adopts. The data from the pooled weighted sample reveal that, of all the analysed aspects of gender role attitudes, Luxembourg's residents exhibit the most traditional attitudes towards homemaking, that is, the score consisting of items capturing the essence of the male-breadwinner and female-carer model (mean equal to 2.72 on the scale 1–4). On the contrary, the most liberal beliefs were reported regarding the indicator

⁴ Group invariant structure (men, women): Chi-Square = 86.079, DF = 20, P-Value = 0.000, Chi-; CFI = 0.949, RMSEA = 0.055.
Group invariant structure (1999, 2008): Chi-Square = 101.452, DF = 24, P-Value = 0.000, CFI = 0.938, RMSEA = 0.054.

of attitudes towards childcare (i.e. composite variable covering relationships between parents and children, mean value equal to 1.72 on the scale 1–4).

3.2 Key independent variables

Given the objectives of the paper, the analysis focuses on the effect of three key variables: sex, age and period (year of the survey). Philipov (2008) argues that with cross-sectional data it is difficult to distinguish between cohort and period effect. Moreover, the cross-sectional nature of the data used does not allow accounting for life course changes in the gender role attitudes. Given this, the following analysis will be interpreted from the perspective of a particular age group but not from a cohort perspective. The age variables have been categorized as it is expected that the relationship between age and attitudes towards gender roles is not linear but that it rather depends on the stage of the life's course of the respondents. To minimize the problem of incomparable age categories in two waves of the EVS survey in Luxembourg reported by Fleury (2010), broader age groups were created: 18–34 years, 35–54 years and 55 years and over.

To test the hypothesis that the main contributors to the overall attitudinal shift towards more gender egalitarian division of labour between men and women are young women, we established six gender-age comparison groups (men 18–34 years, women 18–34 years, women 35–54 years, men 35–54 years, men 55 years and over, and women 55 years and over). Dummy variables are used in the regression analysis comparing the gender role attitudes of the six gender-age groups, women aged 18–34 years is considered to be a reference category and left out of the model. This approach was inspired by Cassidy and Warren (1996) who interacted the sex and labour market statuses of women to examine how groups of men and women with different labour market statuses vary with respect to gender role attitudes. With this approach, it is possible to take into account both gender and age and directly compare men and women of different age categories. The period is measured by a dummy variable indicating year 2008 (reference year: 1999).

Table 3: Gender role attitudes depending on age, sex and wave. Mean values on a scale from 1 (liberal) to 4 (traditional)

Year	Age	Sex	Dimension of gender role attitudes								
			Child care			Homemaking			Economic		
			Sample	Newcome		Sample	Newcom		Sample	Newcome	
			without	rs		Comple	without	ers	without	without	rs
Complete	newcomers		te	newcomer		Complete	newcomer				
sample	sample	s	sample	s	sample	s	sample	s			
1999	18–34	Men	1.83**			2.69**			2.01		
		Women	1.64**			2.51**			1.91		
		Total	1.74			2.60			1.96		
	35–54	Men	1.86			2.81*			2.06		
		Women	1.76			2.66*			2.05		
		Total	1.80			2.72			2.05		
	55 and over	Men	2.03			3.04			2.07		
		Women	2.03			2.99			2.02		
		Total	2.03			3.02			2.04		
	Total	Men	1.91			2.84			2.04		
		Women	1.79			2.70			1.20		
		Total	1.85			2.77			2.02		
2008	18–34	Men	1.56	1.53	1.67	2.58**	2.58	2.55	1.78*	1.80	1.73
		Women	1.46	1.43	1.61	2.36**	2.36	2.37	1.65**	1.69	1.41
		Total	1.51	1.48	1.64	2.47	2.47	2.47	1.71	1.75	1.59
	35–54	Men	1.66	1.62	2.03	2.71***	2.71	2.70	1.85*	1.83	2.12
		Women	1.56	1.55	1.64	2.51***	2.52	2.44	1.69*	1.69	1.72
		Total	1.61	1.58	1.84	2.61	2.62	2.57	1.77	1.76	1.93
	55 and over	Men	1.76***	1.76	1.88	2.99*	2.99	2.61	1.80**	1.80	1.83
		Women	1.53***	1.53	1.60	2.82*	2.83	2.33	1.59**	1.58	1.70
		Total	1.65	1.65	1.78	2.91	2.92	2.51	1.69	1.69	1.78
	Total	Men	1.66	1.64	1.82	2.76	2.78	2.61	1.82	1.81	1.89
		Women	1.52	1.51	1.62	2.56	2.58	2.40	1.65	1.65	1.55
		Total	1.59	1.58	1.73	2.66	2.68	2.51	1.73	1.73	1.76

Source: EVS 1999 and 2008, CEPS/INSTEAD, N=2,354

Note: gender difference: ***=0.001 significance level; **=0.01 significance level; *=0.05 significance level.

The data presented in Table 3 indicate that Luxembourg residents exhibit the most traditional attitudes towards homemaking, that is, the score consisting of items capturing the essence of the male-breadwinner and female-carer model. On the contrary, the most liberal beliefs were reported regarding the indicator of attitudes towards childcare (i.e. composite variable covering relationships between parents and children). This corroborates Hypotheses 1a and 1b. When comparing attitudes of men and women, it can be concluded that, in 2008, men adopted a statistically significantly more traditional stance towards all three analysed scores than their female counterparts, compared to only childcare and homemaking in 1999. This is in line with our assumption presented in Hypothesis 2. Additional analysis proved that, at the binary level, there is a significant difference between attitudes in 1999 and in 2008. A decrease in traditional views on

gender roles is most notable in case of attitudes towards the consequences of female employment on the family and the attitudes towards the economic aspects of gender roles. The most moderate changes were observed with respect to homemaking.

To check for the possible effect of the newcomers, we conducted additional analysis on the 2008 data where residents who came to the country after 1999 are compared to the rest of the sample. The outcomes presented in Table 3 demonstrate that newcomers show very similar attitudes towards gender role attitudes. The differences are small, especially regarding the economic dimension of gender roles. On the other hand, they show slightly less liberal stances towards childcare aspects and slightly less traditional attitudes towards homemaking.

3.3 Control variables

To obtain a more precise estimates of the effect of the wave, gender and age categories on gender role attitudes, a set of control variables recommended by various studies (Knudsen & Wearnes, 2001; Sjoberg, 2004; Alwin et al., 1992; Treas & Widmer, 2000; Kangas & Rostgaard, 2007; Thornton et al., 1983; Berridge et al., 2009) is introduced to the regression models: number of children, educational attainment, composition of household, religion⁵, labour market status⁶, social class and nationality.⁷

⁵ Less religious people tend to show more egalitarian gender role attitudes (Knudsen & Waerness, 2001; Sjoberg, 2004; Alwin et al., 1992; Treas & Widmer, 2000).

⁶ Given this, married women who work will show more liberal attitudes than those inactive in the labour market. Empirical findings (Kangas & Rostgaard, 2007; Thornton et al., 1983) confirm this assumption and show that labour market participation of respondents positively affects gender egalitarian attitudes. Several studies (Thornton et al., 1983; Crompton & Lyonette, 2005) claim that attitudes towards gender roles are also associated with the couple's labour market arrangements. Individuals living in couples that apply traditional division of labour between men and women (men work for pay and women are the main carers) demonstrate more traditional attitudes than couples where both partners work for pay. As a significant part of our sample does not have a steady partner and those who have are no longer active in the labour market, this control is not included in the analysis. Braun et al. (1994) and Crompton and Lyonette (2005) point out that the engagement of a respondent's mother in gainful work is associated with less traditional gender role attitudes. However, the EVS study does not contain this information for both years for the surveys; therefore it could not be included.

⁷ Although the EVS includes a variable measuring household income, it is not possible to adjust it by household size and household composition. Moreover, the income variable has a high level of missing cases (about 20%). The missing information regarding household income can be partially compensated by including a control variable measuring social class.

Table 4: Description of control variables

Variables	Categories	Mean	Std. Deviation
Age in years	65 an over	.1597	.3664
	55–64	.1418	.3489
	45–54	.1788	.3832
	35–44	.2181	.4130
	25–34	.1992	.3995
	18–24	.1025	.3034
Sex	man	.4976	.5001
Presence of children	yes	.6793	.4669
Household composition	Couple with children	.4290	.4950
	One person household	.1449	.3521
	Couple without children	.2611	.4393
	Single parent household	.0345	.1826
	Other	.1304	.3368
Religion	Catholic	.6797	.4667
	No religion	.2646	.4412
	Other non-catholic	.0557	.2294
Education	Primary	.2443	.4298
	Lower secondary	.1446	.3517
	Higher secondary	.3800	.4855
	Post-secondary	.2312	.4217
Social class	Upper class	.2483	.4321
	Upper middle class	.3080	.4618
	Lower middle class	.2032	.4025
	Lower class	.2405	.4275
Labour market status	Independents	.2237	.4168
	Private employee	.0529	.2239
	Civil servant	.1149	.3189
	Worker	.1633	.3697
	Unemployed	.0197	.1389
	Retired	.2019	.4015
	Housewife/househusband	.1538	.3609
	Students	.0699	.2551
Nationality	Luxembourger	.6453	.4785
	Portuguese	.1367	.3436
	EU15	.1854	.3887
	Non-EU15	.0327	.1778

Source: EVS 2008, CEPS/INSTEAD, N= 2,354

4. Analysis

In this part of the paper we present outcomes of a set of regression models for each dependent variable (dimension of gender role attitudes) separately. Table 5 presents the outcome of the analysis regarding the first aspect of attitudes towards gender role: childcare. The data reveal that all analysed categories show statistically significantly more traditional attitudes towards the childcare dimension of gender roles than the chosen reference category (women aged 18–34 years). The observed differences of the effect is, however, relatively small in magnitude in the case of men aged 18–34 years and women 35–54 years. This is consistent with Hypothesis 2. Model 2 also shows that Luxembourg residents demonstrated significantly more gender egalitarian attitudes than in 1999. This means that with respect to childcare recently they have tended to be more open to working mothers and the involvement of men in childcare, which corroborates the assumptions of Hypothesis 1.

The significant interaction term between the year of the survey and the variable standing for women aged 55 years and over indicates that the period moderates the effect of this category on the attitudes towards childcare. This age category of women has become significantly less traditional during the last decade. A possible explanation for this fact may be that many of the female post-war baby boomers entered this age category in 2008. Bonvalet and Ogg (2009) characterized post-war baby boomers as the generation which was affected by special socio-economic, political and ideological contexts and had a chance to experience and live new forms of life as couples based on more freedom and gender equality. In 1999, female post-war baby boomers belonged mainly to the category 35–54 years, whereas in 2008 most of them had already reached the age tranche 55 years and over. Thus, the above reported evolution in gender role attitudes could be affected by a generational change within this age category. These findings do not confirm Hypothesis 3 that the gender gap is closing.

Table 5: Regression of dimension 1 of gender attitudes: childcare on socio-demographic factors. (OLS regression, dependent variable on a scale 1–4)

	Sample of all residents			Newcomers excluded	
	Model 1 St. Beta	Model 2 St. Beta	Model 3 St. Beta	Model 4 St. Beta	Model 5 St. Beta
Child/ren	-.064*	-.055	-.051	-.056	-.053
One person household	.019	.017	.016	.011	.009
Couple without children	-.017	-.011	-.007	-.015	-.012
Single parent household	.006	.012	.011	.013	.010
Other household	.031	.039	.041	.036	.037
No religion	-.063**	-.068***	-.069***	-.070***	-.071***
Other catholic religion	.004	.006	.006	-.002	-.001
Lower secondary education	-.022	-.031	-.029	-.030	-.028
Higher secondary education	.037	.029	.029	.036	.036
Post-secondary education	.004	.059	.057	.060	.059
Higher middle class	.003	.064	.065	.068	.068
Lower middle class	.000	.023	.025	.030	.031
Lower class	.049	.079	.081	.087	.089
Active – private employee	-.009	-.015	-.014	-.017	-.016
Active – civil servant	.049*	.023	.027	.027	.031
Active – worker	-.006	.002	.000	.004	.002
Active – unemployed	.006	.014	.014	.008	.008
Inactive – retired	.035	.007	.005	.008	.007
Inactive – housewife	.113***	.087**	.086**	.085**	.085**
Inactive – student	-.003	-.014	-.013	-.013	-.012
Nationality Portuguese	.059*	.067**	.066**	.059*	.058*
Nationality EU-15	.055*	.051*	.051*	.042*	.042*
Nationality outside EU-15	.021	.029	.028	.014	.013
Men 18–34	.079**	.075**	.103**	.075**	.100**
Men 35–54	.136***	.142***	.148***	.137***	.147***
Women 35–54	.056	.066*	.068	.071*	.066
Men 55 and over	.200***	.212***	.234***	.221***	.236***
Women 55 and over	.094*	.116**	.195***	.126***	.199***
Wave 2008		-.198***	-.134*	-.206***	-.146**
Men 18–34* wave			-.041		-.039
Women 35–54* wave			-.008		.001
Men 35–54* wave			-.016		-.024
Women 55 and over* wave			-.120**		-.114**
Men 55and over* wave			-.039		-.032
R square	0.047	0.083	0.088	0.087	0.091
R square change	0.015***	0.036***	0.005***	0.039***	0.005*
N	2,354			2,241	

Source: EVS Luxembourg 1999 and 2008, CEPS/INSTEAD

Note: ***=0.001 significance level; **=0.01 significance level; *=0.05 significance level.

Table 6 focuses on homemaking. With respect to the effect of the year of survey, it appears that in 2008 Luxembourg residents demonstrated significantly more gender egalitarian attitudes towards homemaking than nine years ago, even if the magnitude of the effect is rather small as we assumed in Hypotheses 1 and 1b.

The period does not seem to moderate the effect of the variable combining the sex and age categories. This implies that the attitudes of the analysed categories of respondents have not changed statistically significantly between 1999 and 2008. This implies that the gender gap is not closing with respect to homemaking. When comparing the effect of men and women of different age categories to that one of women aged 18–34, it can be observed that all age categories of men are significantly more conservative than the reference category of women. With respect to women, the data show that there is a significant difference in perception of homemaking between the youngest group of women and those 55 years and over. This finding is consistent with our assumptions.

Table 6: Regression of dimension 2 of gender attitudes: homemaking on socio-demographic factors (OLS regression, dependent variable on a scale 1–4)

	Sample of all residents			Newcomers excluded	
	Model 1 St. Beta	Model 2 St. Beta	Model 3 St. Beta	Model 4 St. Beta	Model 5 St. Beta
Child/ren	-.076**	-.073**	-.075**	-.071*	-.073*
One person household	-.008	-.008	-.009	-.003	-.005
Couple without children	-.067*	-.064*	-.065*	-.063*	-.064*
Single parent household	.015	.018	.019	.016	.017
Other household	-.050*	-.048	-.048	-.044	-.044
No religion	-.085***	-.086***	-.087***	-.087***	-.088***
Other catholic religion	-.017	-.016	-.016	-.022	-.022
Lower secondary education	-.055*	-.058*	-.057*	-.065*	-.064*
Higher secondary education	-.135***	-.138***	-.136***	-.145***	-.143***
Post-secondary education	-.181***	-.163***	-.166***	-.165***	-.168***
Higher middle class	.023	.043	.039	.042	.038
Lower middle class	.083*	.091*	.088*	.090*	.088*
Lower class	.076	.087	.083	.082	.078
Active – private employee	-.009	-.012	-.013	-.009	-.010
Active – civil servant	.000	-.008	-.009	-.005	-.005
Active – worker	.057*	.060*	.061*	.063*	.064*
Active – unemployed	-.014	-.011	-.012	-.006	-.006
Inactive – retired	.116***	.107**	.109**	.112**	.115**
Inactive – housewife	.142***	.133***	.133	.137***	.136***
Inactive – student	-.005	-.009	-.010	-.005	-.005
Nationality Portuguese	.020	.022	.023	.028	.028

Nationality EU-15	-.035	-.036	-.037	-.039	-.040*
Nationality outside EU-15	.036	.039	.039	.037	.036
Men 18–34	.104***	.103***	.112***	.100***	.109***
Men 35–54	.191***	.193***	.190***	.188***	.189***
Women 35–54	.045	.049	.053	.049	.053
Men 55 and over	.271***	.275***	.246***	.274***	.246***
Women 55 and over	.149***	.157***	.161***	.156***	.161***
Wave 2008		-.067***	-.073	-.066***	-.071
Men 18–34* wave			-.014		-.015
Women 35–54* wave			-.006		-.005
Men 35–54* wave			.006		.001
Women 55 and over* wave			-.006		-.005
Men 55 and over* wave			.042		.042
R square	0.173	0.177	0.178	0.175	0.176
R square change	0.029***	0.004***	0.001	0.004***	0.001
N	2,354			2,241	

Source: EVS Luxembourg 1999 and 2008, CEPS/INSTEAD

Note: ***=0.001 significance level; **=0.01 significance level; *=0.05 significance level.

Table 7 presents the outcome of the analysis regarding the last analysed aspect of the gender role attitudes – economic dimension. The significant and negative effect of the year of the survey indicates that in 2008 the Luxembourg residents exhibited less traditional beliefs with respect to the economic dimension of gender roles compared to 1999. Again, our Hypothesis 1a is confirmed.

Model 2 in Table 7 shows that there are no significant interactions between the period and the categories of the composite variable of sex and age. This implies that the effect of this composite variable is not moderated by the year of survey. However, when we exclude newcomers, it is possible to observe a similar effect as in the case of childcare, that is, that the attitudes of women aged 55 or more years have become significantly more gender egalitarian over time.

When looking at the differences between men and women of various ages, it appears that all age categories of men are statistically significantly more traditional than 18–34 year-old women. On the contrary, no significant differences were found among the three analysed age categories of women. This means that there is no difference in attitudes of women in the different stages of life's course towards this dimension of gender roles (i.e. the statements that both partners should contribute to household income and that a job is the best way for women to be independent).

Table 7: Regression of dimension 3 of gender attitudes: economic dimension on socio-demographic factors (OLS regression, dependent variable on a scale 1–4)

	Sample of all residents			Newcomers excluded	
	Model 1 St. Beta	Model 2 St. Beta	Model 3 St. Beta	Model 4 St. Beta	Model 5 St. Beta
Child/ren	.031	.039	.042	.041	.046
One person household	-.052	-.054	-.054*	-.061*	-.061*
Couple without children	-.085**	-.080**	-.077*	-.085**	-.082**
Single parent household	-.061**	-.055**	-.053**	-.056**	-.054**
Other household	-.031	-.023	-.021	-.028	-.026
No religion	.008	.004	.005	-.003	-.003
Other catholic religion	-.016	-.014	-.015	-.003	-.004
Lower secondary education	.022	.013	.014	.013	.014
Higher secondary education	.082**	.074*	.076*	.085**	.086*
Post-secondary education	-.038	.014	.012	.023	.023
Higher middle class	-.123**	-.066	-.064	-.062	-.060
Lower middle class	-.077	-.055	-.055	-.048	-.048
Lower class	-.052	-.024	-.024	-.017	-.017
Active – private employee	.018	.012	.014	.010	.012
Active – civil servant	.040	.016	.018	.019	.020
Active – worker	-.101***	-.094**	-.094**	-.096**	-.095**
Active – unemployed	.002	.008	.010	.011	.013
Inactive – retired	.000	-.027	-.028	-.026	-.027
Inactive – housewife	.157***	.132***	.129***	.138***	.135***
Inactive – student	.033	.023	.024	.023	.023
Nationality Portuguese	-.048*	-.041	-.040	-.045*	-.044
Nationality EU-15	-.027	-.031	-.030	-.041	-.039
Nationality outside EU-15	-.011	-.004	-.001	.006	.009
Men 18–34	.098***	.095***	.086*	.084**	.088*
Men 35–54	.124***	.130***	.113**	.111***	.113**
Women 35–54	.008	.017	.037	.005	.034
Men 55 and over	.118**	.130**	.140**	.125**	.143**
Women 55 and over	-.005	.015	.062	.009	.064
Wave 2008		-.186***	-.162**	-.187***	-.131*
Men 18–34* wave			.012		-.006
Women 35–54* wave			-.032		-.050
Men 35–54* wave			.021		-.012
Women 55 and over* wave			-.067		-.085*
Men 55and over* wave			-.016		-.034
R square	0.063	0.095	0.097	0.097	0.1000
R square change	0.018***	0.032***	0.003	0.032***	0.003
N	2,354			2,241	

Source: EVS Luxembourg 1999 and 2008, CEPS/INSTEAD

Note: ***=0.001 significance level; **=0.01 significance level; *=0.05 significance level.

5. Conclusions

The main aim of this paper was to contribute to the literature by analysing how the time period, sex and age affect attitudes towards gender roles in Luxembourg. The results of our analysis reveal that, when it comes to the childcare and homemaking dimensions of gender role attitudes, young and middle aged women are significantly less traditional than women aged 55 years and over and less traditional than men of all analysed age categories. Regarding the economic dimension of gender roles, no significant differences have been found among women of the analysed age categories. However, men of all age categories exhibit more traditional attitudes than the youngest female respondents. This even implies that women aged 18–54 exhibit very similar gender role beliefs (even if the youngest generation of women demonstrates slightly more egalitarian attitudes in terms of magnitude). With respect to changes of gender role attitudes over time, the EVS data show that attitudes have become significantly less traditional between 1999 and 2008, which conforms with our expectations. This tendency has been observed in all three dimensions of gender role attitudes. In terms of magnitude, the largest shift from traditional views was observed with respect to the consequences of female employment on children. This may signal that female employment is perceived as less incompatible with the role of mother than a decade ago. A slightly smaller drop in traditionalism was uncovered in the case of the economic dimension of the gender roles. This is compatible with the previously reported evidence that female employment goes hand in hand with the increasing economic independence of women. The smallest change in attitudes over time, yet still statistically significant, has been observed in the case of homemaking. This indicates that support for homemaking is time persistent compared to other aspects of gender role attitude. This is in line with findings from other European countries (Fortin, 2005) and it supports the hypothesis that when it comes to the private sphere (motherhood and the functioning of women in a household) both men and women tend to keep rather traditional attitudes (Anderson & Johnson, 2002). This seeming inconsistency in the evolution of gender role attitudes might also be explained by the so called ‘mother’s guilt’ (Fortin, 2005) which represents an inner conflict stemming from the ambition of women to reconcile family and work life efficiently. Another explanation could be supported by the findings of Sjoberg (2010) that point out that the ambivalence

in gender role attitudes might be caused by a temporal disjunction or cultural lag between the dramatic increase in women's human capital and labour market participation and the institutions that would allow family–work reconciliation.

It can also be concluded that the change in gender role attitudes in the period between 1999 and 2008 was comparable among men and women of different age categories with the exception of women aged 55 and over. Gender role beliefs of women in this age category were found to be significantly more egalitarian in 2008 than in 1999. This might be explained by the shift of post-war female baby boomers from the age category of 35–54 years to the age category of 55 years and over. The composition of this older category therefore changed and we can observe the effect of generational replacement.

As expected, young and middle aged Luxembourg women can be seen as the vehicles of change regarding gender role beliefs. Their male counterparts tend to show more traditional attitudes, especially with respect to homemaking and the economic dimension of gender role attitudes. This situation has not changed significantly during the last decade, which indicates that the gender gap in the perception of gender role is not closing. Given this, if gender equality is to be promoted, policy makers should pay special attention to the role of men in the family and the reconciliation of family life and work. Awareness of gender equality issues should be supported, especially in childhood and adolescence, which are the periods of life when gender role attitudes are, according to the literature (Anderson & Johnson, 2002; Fortin, 2005; Sjoberg, 2010), internalized.

In accordance with our hypotheses, the above findings hold even if foreigners, who have settled in the country between 1999 and 2008, are excluded from the analysis. This may be due to the fact that a relatively small number of these residents (they represented about 6% of the analysed sample) and/or a large part of these immigrants come from the countries that demonstrate gender role attitudes similar to those of Luxembourg residents.

One of the limitations of the study is the fact that the analysis is based only on the comparison of different age categories of men and women and does not allow for cohort analysis (due to the large effect of the incoming immigrant population). In a further study, this limit could be overcome by focusing only on native-born individuals where

the cohort effects on gender role attitudes can be observed or controlling for structural changes over time in the cohort characteristics.

It needs to be noted that the findings of this paper are related to a specific Luxembourg context and further research should show whether they are to be found in other European countries. Using international data that contain more cases would also allow analysis of women and men of a more detailed age categories to be conducted that would represent more precise stages of life.

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