Article

Time and well-being, an institutional, comparative perspective: Is it time to explore the idea of a time policy?

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Abstract

This article explores the relationship between time and well-being as a social policy question. Although the research on time and well-being is extensive, few have dealt with them together from a comparative institutional perspective. Based on data from the third European Quality of Life Survey (EQLS) of 2012, regarding 34 mostly European countries, in different welfare regimes, we explore two issues: (1) What are the effects of welfare regimes on the uses of time and subjective well-being? and (2) What are the effects of different uses of time on subjective well-being? We find that the institutional structure – the welfare regime – affects the way people use their time. Furthermore, the findings documented that uses of time have a direct effect on well-being when controlling for individual level as well as country-level variables. These findings may have important implications for policymaking.

Introduction

Changing contemporary societies call for new developments in social policy. Social, demographic, economic as well as political pressures introduce new risks for social policy (Bonoli, 2007; Ferragina et al., 2015). While different social policies are being implemented to improve people's lives, we believe that by paying more attention to the uses of time, policymakers could improve the well-being of individuals and societies.

Time is the most critical resource we have, and the ways we use our time affect our well-being (Alpman et al., 2018; Gershuny, 2011; Gregory, 2015; Juster et al., 1981; Kahneman et al., 2004,

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2010; Zuzanek and Zuzanek, 2015). Ryan and Deci (2001) define well-being as 'optimal psychological functioning and experience' (p. 142). We are interested in subjective well-being, which includes people's subjective evaluations of their lives, their satisfaction with them, and their degree of happiness that is reflected in the presence of more positive feelings and fewer negative feelings (Helliwell et al., 2015; Kahneman and Krueger, 2006; Krueger, 2009; Layard, 2011; Ryan and Deci, 2001).

The literature on well-being and the uses of time, as two separate subjects, is extensive, but the exploration of both of them together is less prominent. Although different people enjoy different uses of time, current studies, at the individual level, provide increasing evidence that connects the effects of different uses of time with well-being (Kahneman and Krueger, 2006; Krueger, 2009). Therefore, the macro-level effect of the use of time on well-being is intriguing, especially from a comparative policy perspective. However, studies exploring this issue are scarce.

How we use our time affects our surroundings and our families, friends, co-workers, and society. In turn, the ways we use our time are shaped or at least modified by various institutions such as the state, the marketplace, our culture and families in which we live (Haller et al., 2013). For example, while the welfare state safeguards certain needs of individuals regardless of their situation in the marketplace (Deeming and Hayes, 2012; Esping-Andersen, 1990, 2006), it imposes limitations on, and provides opportunities for the ways we use our time. Therefore, it is interesting to explore the effects of the welfare state's institutions on our use of time and our well-being. Furthermore, if we control for the welfare state and individual characteristics, does the use of time affect well-being? If we can unravel this riddle, we might be able to design more beneficial policies.

In this article, we take a first step in this direction and explore the connection between the use of time and well-being in different countries. To accomplish this goal, we first introduce our theoretical model concerning the influence of institutions on our uses of time and their effect on our well-being. Then, we present evidence using empirical data from 34 mostly European countries. The findings reveal that the institutional context of the welfare state matters in different ways in different regimes and that the uses of time have a direct effect on our well-being.

Literature review

The importance of time and its effect on well-being

Scholars from various fields have investigated a wide range of implications of different uses of time. Economists look at models that explain the substitution effects of different uses of time (Aguiar et al., 2013; Becker, 1965), sociologists mostly explore trends among different groups (Bryson, 2007; Folbre and Bittman, 2004; Gershuny and Sullivan, 2003; Kan et al., 2011; Wajcman, 2015) and psychologists investigate the instantaneous utility of time uses (Kahneman et al., 2004, 2010). However, we are interested in the uses of time as a resource that might help create better social policies.

In the last decades, there has been broad agreement about the importance of well-being as the end result of policy (Diener and Seligman, 2004; Kahneman and Krueger, 2006; Layard, 2011; OECD, 2015; Stiglitz et al., 2009). Many studies explore the factors that promote well-being such as education, gender, work status, religion, social relations and the country's GDP (Diener and Seligman, 2004; Easterlin, 2013; Helliwell et al., 2015; Layard, 2011). However, only a few studies have dealt with the uses of time and well-being together from an institutional perspective.

This is not a trivial matter (Alpman et al., 2018; Gershuny, 2011; Zuzanek and Zuzanek, 2015), partly because of the different ways in which researchers measure well-being as well as uses of time. Researchers look at five different kinds of time: (1) work time, that is, time spent on gainful employment; (2) unpaid work like cleaning and cooking, devoted to maintaining the home; (3) child care, that is, time spent with children in activities such as playing with them and helping with their homework; (4) leisure time including activities such as meeting friends, reading and watching TV; and (5) personal care including activities that involve taking care of oneself such as visiting the doctor, playing sports, sleeping and personal grooming (Folbre and Bittman, 2004; Hagqvist et al., 2019;
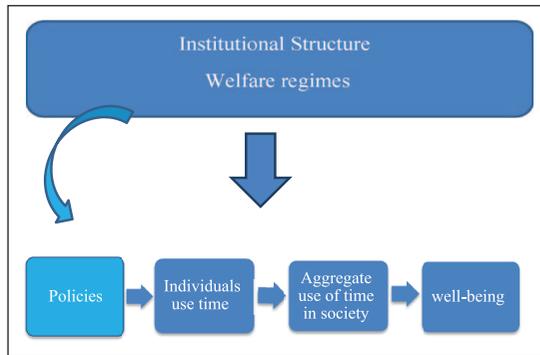
Figure 1. A conceptual model for the effect of time policy on well-being.

OECD, 2016; Sayer, 2005). We focus on three general categories: work time; care time, defined as the time devoted to doing things for others including maintaining the home, child care and elder care; and personal time, meaning time devoted to personal activities and recreation.

Studies have provided evidence regarding the effect of the uses of time on well-being. Hilbrecht's (2009) research with Canadian parents demonstrates that leisure time is important for well-being. People in different countries rate leisure activities such as meeting with friends, dining at restaurants and playing sports very highly, whereas they rank unpaid work lower and time spent commuting to work as the worse. Watching TV and paid work rank somewhere in the high-middle levels (Gershuny, 2011; Kahneman and Krueger, 2006; Kahneman et al., 2010; Zuzanek and Zuzanek, 2015). While free time due to unemployment harms one's well-being, free time resulting from the choice to work part-time contributes to a higher level of well-being (Zuzanek and Hilbrecht, 2019).

Studies also show that assessments of the enjoyment of various activities change over time. Zuzanek and Zuzanek (2015) found that in the 1970s, people ranked their enjoyment of child care higher and their enjoyment of paid work lower. In 1998 and 2005, both activities were ranked lower. Spending too much time on activities such as sleeping and personal care, and even time spent on free time, can be less enjoyable (Gershuny, 2011). Csikszentmihalyi and Hunter (2003) show that, among high school

students, investing time in activities that had value for them, such as studying, made them happier even if at specific points in time, the feeling connected to the activity was not so positive. Other studies show that more autonomy regarding the use of our time makes us happier (Aaker et al., 2011; Goodin, 2010; Goodin et al., 2008; Zuzanek and Zuzanek, 2015).

Kahneman and others created the *national time accounts* method to measure well-being as a function of instantaneous utility. They asked participants to express their positive and negative feelings about different time episodes to create a U-index that reflects people's feelings about different uses of time (Kahneman and Krueger, 2006; Kahneman et al., 2004, 2010; Krueger, 2009). The importance of their work notwithstanding, it is difficult to use when comparing nations, and it fails to capture the general satisfaction with life that is not reflected in moment-to-moment experiences (Helliwell, 2008; Loewenstein, 2009). Furthermore, it does not account for the institutional context that affects choices about the use of time.

Institutions, welfare regimes, the use of time and well-being

Institutions affect individuals' preferences (North, 1990; Sened, 1997), but only a few have explored the connection between institutions, uses of time and well-being (see Gershuny, 2011; Haller et al., 2013). Figure 1 illustrates our theoretical claim that institutional structures affect policy design and ultimately how people use their time (Arts and Gelissen, 2002; Esping-Andersen, 1990; Ferrera, 1996; Korpi and Palme, 1998). In turn, our use of time affects our well-being.

In this article, we use two typologies of welfare regimes to explore the effects of institutional arrangements on the uses of time and well-being. The first, which we refer to as categorization 1, is Esping-Andersen's typology of welfare regimes. Although it was subject to some criticism (Ferragina et al., 2015), it is still widely used (see Buhr and Stoy, 2015; Haller et al., 2013; Pankratz, 2009). Esping-Andersen's (1990, 2006) typology reflects diverse institutional state structures. In the liberal regime, the institutional structure of the marketplace plays a prominent role.

In the social-democratic regime, government institutions play a more active role. For example, in such regimes, the state's institutions provide direct child care. In the corporatist regime, the state structure is responsible for preserving the social structure. Thus, it provides a safety net for citizens in cases of illness, disability, and unemployment.

The second typology, which we refer to as categorization 2, is that of Ferragina and Seeleib-Kaiser (2011). Based on a meta-analysis, they place countries on a continuum ranging from purely social-democratic countries to largely liberal ones.

Furthermore, we also used Ferrera (1996) and Gal's (2010) notion of the Southern European regime or the Mediterranean welfare state, in countries such as Spain, Italy and Portugal. This institutional regime contains elements such as universal healthcare and patronage mechanisms that benefit certain segments of the population. Finally, the Eastern European institutional regime is characterized by low levels of trust, limited social programmes, limited life expectancy, high rates of unemployment, and infant mortality, and high rates of female participation in the work force (Eikemo et al., 2008; Fenger, 2007). Countries transitioning direct or indirect control of the Soviet Union are still developing their welfare states. Therefore, based on Fenger (2007), we treat them as a distinct group referred to as 'other' (see Appendix 1).

While family policies affect uses of time, their main focus is on reconciliation between unpaid and paid work, and integrating people, especially women, into the workforce (Lewis et al., 2008a). Recently, more voices have criticized these policies as minimizing the essence of citizenship. The main claim is that the rights of citizens and the contributions they make to society can and should be based on broader criteria than their paid employment (Gorz, 1999; Gregory, 2015; Patrick, 2012; Van Parijs, 2004). Table 1 summarizes the literature that looks at the variety of differences between these regimes, their family policies and the effects they have on how their citizens use their time. Most European countries have tried to individualize their family policies to provide more choices for men and women. However, they have been less concerned with how such policies affect the choice between different uses of time and well-being. Therefore, a comparative exploration of the connection between uses of time and well-being is still warranted.

Welfare regimes and well-being. Deeming and Hayes (2012) found that people who live in liberal and conservative regimes have twice the odds of being less happy than people living in social-democratic regimes. While the differences between corporatist and social-democratic regimes are significant, differences between social-democratic and liberal regimes are not (Deeming and Hayes, 2012). Samuel and Hadjar (2016) found that people in social-democratic regimes report higher subjective well-being. These studies connect the high level of subjective well-being in social-democratic regimes to the ability of individuals to fulfil their needs and reduce inequality, while minimizing the effect of status on well-being (Deeming and Hayes, 2012; Easterlin, 2013; Samuel and Hadjar, 2016). Thus, researchers have investigated the effect of welfare regimes on well-being, but have not made the connection between uses of time and well-being.

One exception is the work of Gershuny (2011), who created an enjoyment utility index for measuring well-being based on assessments of the level of enjoyment from different activities among individuals in Britain and the United States. He then used this index with data from the diaries of individuals from 15 countries in four welfare regimes regarding their uses of time. He found that men and women in the liberal regime reported a similar decline in enjoyment level from the mid-1970s to the early 2000s. Conservative countries displayed contradictory trends. In the Nordic regime, there was some decline in utility, except for Sweden, but among Nordic women, there was a slight increase. There was a dramatic decline in utility for men and women in Italy and Spain, both of which belong to the Southern European welfare regime (pp. 38–40).

Based on the literature, we suggest the following three hypotheses:

H1: Different welfare regimes will have different effects on uses of time and people's well-being.

H2: The uses of time will have a direct effect on well-being.

H3: Different uses of time will have different effects on well-being.

Method

Data and measurements

Comparative data that include measurements of the uses of time and well-being are scarce. We tested our model using data from the Third European Quality of Life Survey (EQLS) of 2012. This survey is unique in including several questions regarding the uses of time as well as questions regarding well-being in 34 countries, 27 European and 7 non-European: Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Germany, Denmark, Estonia, Greece, Spain, Finland, France, Hungary, Ireland, Italy, Lithuania, Luxembourg, Latvia, Malta, the Netherlands, Poland, Portugal, Romania, Sweden, Slovenia, Slovakia, the United Kingdom, Turkey, Croatia, FYR of Macedonia, Kosovo, Serbia, Montenegro, and Iceland.

The data were obtained from face-to-face surveys in people's homes and in their national language. The survey is based on a random sample in each country that includes residents aged 18 or older. The total number of interviews was 43,636 (EQLS, 2012). Table 2 provides details about the survey. As the table indicates, the average age was 49.52. There were more women (57%) than men (43%). Finally, 60 percent of the respondents were married or in a couple relationship.

The dependent variable

Measurements of our dependent variable – subjective well-being – are becoming more sophisticated and multifaceted (Diener et al., 2009; Helliwell et al., 2015; Pavot, 2018). Questions measuring well-being refer to hedonistic aspects that reflect happiness and joy, and eudemonic aspects that refer to fulfilment and satisfaction. The two aspects correlate (Helliwell et al., 2015; Vanhoutte, 2013). Some measure these factors using one item, while others utilize indices constructed of many items (Diener and Seligman,

2004; European Social Survey, 2015; Helliwell et al., 2015; Huppert and So, 2013; Pavot, 2018).

Due to the nature of this study, which is unique in including a large number of countries, we employ two measurements of well-being. The first, called Well-Being Index 2, is a simple average of two questions about well-being representing hedonistic and eudemonic aspects (Helliwell et al., 2015; Vanhoutte, 2013): 'All things considered, how satisfied would you say you are with your life these days?' (1 – very dissatisfied to 10 – very satisfied) and 'Taking all things together on a scale of 1–10, how happy would you say you are?' (1 – very unhappy to 10 – very happy). Cronbach's alpha was 0.788.

The second measurement, which we call Well-Being Index 13, contains 13 questions that other indices have used to measure well-being (e.g. European Social Survey, 2015; Pavot, 2018). Given the different scales, we adapted the responses to z-scores. Well-Being Index 13 contains the two questions in Well-Being Index 2. It also has three questions that refer to attitudes towards daily functioning: 'I am optimistic about the future'; 'I generally feel that what I do in life is worthwhile' and 'I feel I am free to decide how to live my life'. The respondents were asked to indicate the degree to which they agreed or disagreed with these statements on a scale ranging from 1, meaning strongly agree, to 5, meaning strongly disagree (reversed scored). In addition, there are five questions dealing with positive feelings: 'Which is closest to how you have been feeling over the last 2 weeks?': 'I have felt cheerful and in good spirits'; 'I have felt calm and relaxed'; 'I have felt active and vigorous'; 'I woke up feeling fresh and rested' and 'My daily life has been filled with things that interest me'. The respondents were asked to indicate to what degree they agreed or disagreed with these statements on a scale ranging from 1, meaning all of the time, to 6, meaning at no time (reversed scored). Finally, there are three questions dealing with negative feelings: 'Which is closest to how you have been feeling over the last 2 weeks': 'I have felt particularly tense'; 'I have felt lonely' and 'I have felt downhearted and depressed'. Respondents were asked to indicate their agreement or disagreement on the same 6-point scale. Cronbach's alpha of the 13 items was 0.88.

Table 1. Welfare regimes, main features, family policies and possible effect on uses of time.

Welfare regime	Main features	Family policy (examples)	Effect on time uses – some indications	Countries (examples)
Social-democratic (SD)	Inclusive and generous social benefits; 'work and welfare'; high percentage of women in the workforce (Arts and Gelissen, 2002; Esping-Andersen, 1990; Van der Veen and Groot, 2006)	Extensive child care; long maternity leave; dual-earner support including individualization; tax benefits to parents, and flexibility in work hours (c.f. part-time in the Netherlands) in some countries like Belgium more general family support (Korpi, 2000; Korpi et al., 2013; Lewis et al., 2008a, 2008b)	Tend to be more bored and rushed in their leisure time (Haller et al., 2013) Can substitute personal, care and work time, and have more discretionary time In general, have a high level of discretionary time, but diverse patterns emerge: Austria with less discretionary time and more dependent on paid work at one end and the Netherlands with a high level of discretionary time and low level of dependence on paid work at the other (Goodin, 2010; Van der Veen and Groot, 2006)	The Netherlands, Austria
Liberal (L)	Less government intervention, individual responsibility to obtain most needs in the market, taking care of the neediest populations (means test) – 'work, not welfare' (Arts and Gelissen, 2002; Esping-Andersen, 1990; Van der Veen and Groot, 2006)	Although progress in the development of supporting families, still focuses on those with low skills/income, less encompassing than SD or C (Fleckenstein and Seeleib-Kaiser, 2011) Britain has a more traditional perception of women as caregivers. A family policy based on market-oriented support, with long maternity leave (Korpi, 2000; Korpi et al., 2013; Lewis et al., 2008a, 2008b)	Tend to be more bored and rushed in their leisure time (Haller et al., 2013) Spend more time on work and less discretionary time (Ferragina et al., 2015; Gershuny, 2011; Goodin, 2010; Sullivan and Gershuny, 2001)	Britain, United States
Conservative (C)	Preserving the social structure of society, safety net in cases of illness, disability and unemployment, benefits connected to work 'welfare through work' (Arts and Gelissen, 2002; Esping-Andersen, 1990; Van der Veen and Groot, 2006)	Work regulations, such as 35 hours in France (Eurofound, 2018) and in France more equal perception of women as workers. (Korpi, 2000; Korpi et al., 2013; Lewis et al., 2008a, 2008b) A tradition of promoting unpaid work of women as a care giver, general family support, in recent years adaptation and progress moving from the traditional structure of the family – men as wage earners and women as care givers. (Fleckenstein and Seeleib-Kaiser, 2011; Korpi, 2000; Korpi et al., 2013; Lewis et al., 2008a, 2008b)	Tendencies towards personal and care time Tend to be less bored and rushed in their leisure time (Haller et al., 2013)	France, Germany
Eastern European (EE)	Based on communist tradition of full supply of services and goods by the state; experienced dramatic liberal reforms in the 90s. Still perceived as undergoing a change. Low level of trust, limited social programmes, high rate of unemployment and infant mortality, high level of female participation in the work force (Eikemo et al., 2008; Fenger, 2007)	A change in the dual-earner notion after liberalization reduced government support for services such as child support but still maintain high coverage (Pascall and Lewis, 2004)	Tend to be the most rushed in their leisure time (Haller et al., 2013) Women tend to spend a lot of time on paid and unpaid work and have little leisure time. Generally longer work hours and little part-time work (Pascall and Lewis, 2004)	Czech Republic, Poland
Southern – Mediterranean (S/M)	Some universal services such as healthcare, alongside patronage mechanisms for some segments of the population (Ferrera, 1996; Gal, 2010; Rhodes, 2014) Care comes mainly from family members (Bettio et al., 2006)	Portugal – fewer women in the work force. Greece, Italy, Spain depend on family members for care. Italy – more generous pensions than Greece and Spain (Bettio et al., 2006)	Italians do not have a lot of discretionary time, but they moderately depend on paid work (Van der Veen and Groot, 2006) Due to a high level of unemployment, Spaniards have more free time (Ahn et al., 2004)	Spain, Portugal

Table 2. The independent variables used for the multi-level analysis based on data from the Third European Quality of Life Survey (EQLS, 2012).

The variable	Explanation and coding (%)	Mean value (SD)
Individual level	$N = 43,636$	
Age	By years (18–95 or older)	49.52 (18.10)
Age^2	The square value of age due to non-linear connection reported in some studies	2779.92 (1859.53)
Gender	Male = 0 (43%) Female = 1 (57%)	
Income (PPP)	Income in PPP Euros. Natural Log	7.14 (0.92)
Education (ISCED)	ISCED (0–6) 0 – no education completed/6 – tertiary education – advanced level (ISCED 6)	3.06 (1.36)
Marital status	0 – not living with partner (40%) 1 – married or couple (60%)	
Number of children	Number of children in household – numeric	0.49 (0.90)
Health status	'In general, would you say your health is . . . ' 1 – very good/5 – very bad (reversed)	3.70 (0.98)
Work time	'How many hours do you normally work per week in your main job?' (numeric)	40.42 (12.15)
Care and housework time	Total hours spent on all three areas: 1. Caring for your children, grandchildren: How many hours per week? 2. Cooking and/or housework: How many hours per week? 3. Caring for elderly or disabled relatives: How many hours per week? If the sum exceeded 168 hours a week, we referred to it as a missing value	26.45 (26.03)
Personal activities	Proxy for personal time, or tendencies towards leisure (frequency of activity) on a scale of 1 – every day, or almost every day to 5 – never (reversed) a. Attend religious services, apart from weddings, funerals or christenings b. Use the internet other than for work c. Take part in sports or physical exercise d. Participate in social activities of a club, society, or an association The variable is based on the mean of the four categories (a–d; reversed)	2.40 (0.89)
Country-level variables	$n = 34$	
GDP per capita	GDP per capita based on 2011 prices according to the EQLS (2012)	23,416.17 (10,148.73)
Welfare regimes	We classified the 34 countries into 6 welfare regimes: Social-democratic, Liberal, Conservative, Mediterranean, Eastern European and Other. Due to the various categorizations in the literature, to strengthen the findings we explored them in two welfare categorizations: welfare categorization 1 – refers to the identification of Esping-Andersen, 1990; welfare categorization 2 – refers to the identification of Ferragina and Seeleib-Kaiser, 2011, see Appendix 1 for the categorization of the different countries	

GDP: gross domestic product; ISCED: International Standard Classification of Education; PPP: purchasing power parity.

The independent variables

Table 2 lists the independent variables used in the multi-level analysis and the main features of the sample.

At the individual level, based on the literature, we controlled for age, and age squared, gender, income (natural log), education, number of children in the household, marital status and health. Various studies have established that these variables affect well-being (Ulloa et al., 2013). For example, in general, those who are married, have higher incomes, and are in good health enjoy high levels of well-being (Diener and Seligman, 2004; Helliwell et al., 2015), women a bit less than men (Pinquart and Sörensen, 2001).

Variables related to the use of time. In addition to personal characteristics, we also considered variables related to how people use their time, specifically, the amount of time they spend working (in weekly hours), the amount of time they spend on care and housework (the sum of weekly care hours for children and adults and housework[1]) and the amount of personal time. Given that the survey did not include direct questions that measured personal time, we used a proxy that reflected the amount of time spent on free-time activities (based on the frequency of the activities) such as on the computer (not for work), and involvement in social and religious activities (see Table 2).

At the country level, we used per capita GDP and the two categorizations of welfare regimes (see the Appendix 1).

Data analysis

In the first stage, to explore the differences between welfare regimes (based on the two categorizations) in their effect on well-being (the two indices) and uses of time, we utilized a one-way MANOVA. A MANOVA analysis was appropriate in this case of one categorical independent variable and several dependent variables (Finch, 2005).

In the second stage, we used a multi-level analysis to explore the effect of the different variables on well-being. Given that individuals are nested in countries, we examined a null model. The interclass correlation coefficient (ICC) was between 8 percent and 10 percent for the different models, which confirmed that multi-level modelling was warranted (Hox, 2010;

Stier and Mandel, 2009). We used the following model to explore the two indices of well-being:

$$
\begin{aligned}
Subjective\ well\text{-}being\ ij = {} & \beta 0j + \beta 1j(age) \\
& + \beta 2j(age^2) + \beta 3j(gender) \\
& + \beta 4j(income\_nl) + \beta 5j(education) \\
& + \beta 6j(marital\ status) \\
& + \beta 7j(number\ of\ children) \\
& + \beta 8j(health) + \beta 9j\ (work\ time) \\
& + \beta 10j\ (care\ time) \\
& + \beta 11j\ (personal\ activities) + eij
\end{aligned} \tag{1}
$$

The dependent variable is the individual's subjective well-being *i in country j*, *β0j* is the intercept, denoting the average relative contribution of the 11 independent variables – including the uses of time on subjective well-being – and *β–11* represents the vector of their coefficients. *eij* is the error term. We allowed the intercept *β0j* (well-being) to vary across countries, making it random.

$$
\begin{aligned}
\beta 0j = {} & \gamma 12 + \gamma 13(GDP) \\
& + \gamma 14\ (welfare\ regime\_cat.1/2) + \\
& + uj
\end{aligned} \tag{2}
$$

In equation (2), the *β* coefficient derived from equation (1) signifies the individual's well-being. In equation (2), the variation in the average level of the individual's subjective well-being across countries (variations in the intercept) is modelled as a function of macro-level variables: GDP per capita, and welfare regime using two models for the two categories. *γ12* denotes the intercept at the country level, *γ13–γ14* denotes the coefficients' vector, and *uj* is the error term at the country level. We also ran this model separately for men and women.

Results

Do different welfare regimes have a different effect on time uses and well-being?

Table 3 reports the results of the one-way MANOVA analysis and the average use of time and well-being

across the two categories of welfare regimes. The findings suggest that there are no dramatic differences between the two. In line with existing literature, according to both measurements of well-being, the highest level of well-being was in the social-democratic regime (Deeming and Hayes, 2012; Samuel and Hadjar, 2016). In the liberal, conservative and social-democratic regimes, people tended to work less than 40 hours a week. In the three other regimes – the Mediterranean, the Eastern European and the Other category – people tended to work between 41.5 and 42.6 hours a week. While the literature maintains that people in the liberal regime tend to work long hours (Goodin, 2010; Goodin et al., 2008; Sullivan and Gershuny, 2001), surprisingly, we found the lowest number of work hours in this regime. One explanation for this finding may be due to the large representation of women and couples in the overall sample as well as in the liberal regime.

The liberal regime scored the highest number of hours in care time and time devoted to housework, with a mean of 29.04 hours a week. This finding is expected as, despite some changes in family policies (Lewis et al., 2008b), in this regime there is less governmental support for care services and work–family policies (Arts and Gelissen, 2002; Esping-Andersen, 1990, 2006; Ferragina et al., 2015; Van der Veen and Groot, 2006). Normative perceptions of being a 'good mother' prompts women to spend more time caring for others, as they are still expected to shoulder most of the child care responsibility (Miller, 2012). In the middle were the social-democratic, conservative and Mediterranean regimes with around 22–23 hours a week. Finally, the Eastern European regime and the Other category had an average of 25–26 weekly hours of care time and time devoted to housework.

Looking at the second categorization of welfare regimes based on Ferragina and Seeleib-Kaiser (2011), we saw differences between groups regarding the hours devoted to housework and the care of others. The conservative and social-democratic regimes were similar in this regard, and the Eastern European, Mediterranean and the Other category exhibited a different pattern. The social-democratic and conservative regimes provide generous family support that reduces care time. In addition, in these regimes there are policies such as regulations in France that limit work hours (Eurofound, 2018; Korpi, 2000; Korpi et al., 2013; Lewis et al., 2008b). The high level of care time and housework in the Mediterranean regime reflects the strong reliance on family in this regime (Bettio et al., 2006; Ferrera, 1996; Rhodes, 2014). In addition, major reductions in government expenditures in these areas in the Eastern European and Other category due to liberalization reforms may also account for the high levels of care and housework time in these regimes (Fenger, 2007; Pascall and Lewis, 2004).

In the liberal, social-democratic and conservative regimes, people spent more time on personal activities such as sports and religious and social activities than those in the Eastern European, Mediterranean and Other categories. Studies have established that people in social-democratic and conservative regimes enjoy their leisure time more than those in other regimes (Haller et al., 2013; Kahneman et al., 2010). The changes in the liberalization policies in the Eastern European and the Other categories may reflect the need to spend more time on paid and unpaid work and less on leisure time, at least among women (Pascall and Lewis, 2004). Haller et al. (2013) report that in this regime people tend to be more rushed in their leisure time, which may be rooted in the historical emphasis on hard work as a value. Thus, our findings lend support to our hypothesis H1 that different welfare regimes have different effects on time uses and well-being.

Do the uses of time have a direct effect on well-being?

Another question we explored is the direct effect of uses of time on well-being. We used a multi-level model to control for the individual level variables and institutional context – the welfare regime (two typologies) and GDP per capita for the explanation of two measurements of well-being. Table 4 reports the results.

In accordance with the literature, the individual-level variables contributed to the explanation of well-being. Those with higher incomes, better health, and who were married reported greater well-being (Diener and Seligman, 2004; Helliwell, 2008; Helliwell et al., 2015; Layard, 2011). The level of

Table 3. Differences between welfare regimes based on a one-way MANOVA regarding variables for time uses and well-being.

	Work time		Care and housework time		Personal activity – frequency		Well-being (index 2)		Well-being (index 13)	
	M	SD	M	SD	M	SD	M	SD	M	SD
Welfare regime categorization 1										
Liberal	36.43[a,b,c,d,e]	13.41	29.04[a,b,c,d,e]	31.65	3.00[a,c,d,e]	0.75	7.61[b,c,d,e]	1.63	0.12[b,c,d]	0.56
Conservative	37.71[a,f,g,h,i]	10.31	21.56[a,h,i]	22.53	2.81[a,f,g,h,i]	0.71	7.68[f,g,h,i]	1.53	0.13[f,g,h,i]	0.54
Social-democratic	38.68[b,f,j,k,l]	11.64	22.30[b,k,l]	23.35	3.00[j,k,l]	0.68	8.07[b,j,k,l]	1.37	0.3[b,f,j,k,l]	0.49
Mediterranean	41.51[c,g,j,m]	13.61	22.99[c,m,n]	21.24	2.52[c,m,n,o]	0.82	7.32[c,m,n,o]	1.60	0.02[c,g,j,m]	0.58
Eastern European	42.00[d,h,k]	9.58	25.59[d,h,k,n]	25.25	2.65[d,h,k,n,o]	0.76	7.09[d,h,k,n]	1.66	0.01[d,h,k,o]	0.55
Other	42.65[e,i,l,m]	10.84	24.92[e,i,l,m,o]	24.39	2.42[e,i,l,o]	0.81	7.05[e,i,l]	1.76	0.07[i,l,m,o]	0.58
Partial eta²	0.036		0.008		0.076		0.051		0.035	
F (df)	128.75*** (5, 17,457)		28.12*** (5, 17,457)		286.35*** (5, 17,457)		187.64*** (5, 17,457)		125.60*** (5, 17,457)	
Welfare regime categorization 2										
Liberal	36.43[a,b,c,d,e]	0.29	29.04[a,b,c,d,e]	0.61	3.00[a,b,c,d,e]	0.02	7.61[b,c,d,e]	0.04	0.12[b,c,d,e]	0.01
Conservative	37.64[a,f,g,h,i]	0.16	21.4[a,g,h,i,l]	0.33	2.75[a,f,g,h,i]	0.01	7.57[f,g,h,i]	0.02	0.11[f,g,h,i]	0.01
Social-democratic	39.79[b,f,j,k,l]	0.25	21.76[b,j,k,l]	0.52	3.13[b,f,j,k,l]	0.02	8.29[b,f,j,k,l]	0.03	0.37[b,f,j,k,l]	0.01
Mediterranean	42.60[c,g,j]	0.24	24.77[c,g,j]	0.51	2.51[c,g,j,m,n]	0.02	7.38[c,g,j,m,n]	0.03	0.03[c,g,j]	0.01
Eastern European	42.00[d,h,k]	0.21	25.59[d,h,k]	0.45	2.65[d,h,k,n,o]	0.01	7.09[d,h,k,n]	0.03	0.01[d,h,k,o]	0.01
Other	42.65[e,i,l]	0.20	24.92[e,i,l]	0.42	2.42[e,i,l,m,o]	0.01	7.05[e,i,l,m]	0.03	0.07[i,l,o]	0.01
Partial eta²	0.041		0.009		0.082		0.055		0.036	
F (df)	150.98*** (5, 17,457)		33.27*** (5, 17,457)		313.16*** (5, 17,457)		204.23*** (5, 17,457)		129.21*** (5, 17,457)	

Source: Researchers' analyses and adaptions based on the Third European Quality of Life Survey 2012.

[a] Statistically significant between the first and second group.
[b] Statistically significant between the first and third group.
[c] Statistically significant between the first and fourth group.
[d] Statistically significant between the first and fifth group.
[e] Statistically significant between the first and sixth group.
[f] Statistically significant between the second and third group.
[g] Statistically significant between the second and fourth group.
[h] Statistically significant between the second and fifth group.
[i] Statistically significant between the second and sixth group.
[j] Statistically significant between the third and fourth group.
[k] Statistically significant between the third and fifth group.
[l] Statistically significant between the third and sixth group.
[m] Statistically significant between the fourth and fifth group.
[n] Statistically significant between the fourth and sixth group.
[o] Statistically significant between the fifth and sixth group.
*** $p < 0.001$. † Statistically significant Wilks' Lambada $p < 0.05$.

Table 4. Multi-level models predicting well-being (standard errors) in 31[a] countries.

Categorization	Well-being (index 13)		Well-being (index 2)	
	Welfare regime Cat.1	Welfare regime Cat.2	Welfare regime Cat.1	Welfare regime Cat.2
Individual level variables				
Age	−0.019** (0.003)	−0.019** (0.003)	−0.066** (0.008)	−0.065** (0.008)
Age^2	0.000** (0.000)	0.000** (0.000)	0.001** (0.000)	0.001** (0.000)
Gender	−0.063** (0.009)	−0.063** (0.009)	0.036 (0.028)	0.036 (0.028)
Income (PPP) ln	0.065** (0.007)	0.065** (0.007)	0.253** (0.020)	0.252** (0.020)
Education (ISCED)	0.002 (0.004)	0.002 (0.004)	0.020 (0.012)	0.020 (0.012)
Marital status	0.085** (0.010)	0.085** (0.010)	0.404** (0.031)	0.404** (0.031)
Number of children in household	0.000 (0.006)	0.000 (0.006)	0.040* (0.017)	0.040* (0.017)
Health status	0.242** (0.006)	0.242** (0.006)	0.514** (0.017)	0.514** (0.017)
Work time	−0.001* (0.0004)	−0.001* (0.0004)	−0.004** (0.001)	−0.004** (0.001)
Care and housework time	0.000 (0.0002)	0.000 (0.0002)	0.001* (0.001)	0.001* (0.001)
Personal activities	0.070** (0.006)	0.070** (0.006)	0.163** (0.019)	0.163** (0.019)
Country-level variables				
Effects on intercept				
GDP per capita	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Welfare regime:[b]				
Liberal	−0.200* (0.087)	−0.236* (0.093)	−0.460 (0.240)	−0.648* (0.233)
Conservative	−0.137 (0.072)	−0.186* (0.069)	−0.224 (0.199)	−0.572* (0.173)
Mediterranean	−0.224* (0.068)	−0.233* (0.078)	−0.534* (0.189)	−0.614* (0.195)
Eastern European	−0.193* (0.072)	−0.213* (0.078)	−0.646* (0.200)	−0.760* (0.194)
Other	−0.122 (0.080)	−0.133 (0.084)	−0.576* (0.223)	−0.654* (0.211)
Intercept	−1.018** (0.125)	−1.024** (0.126)	4.466** (0.357)	4.470** (0.338)
R^2 individual level[c]	0.38	0.38	0.34	0.34
R^2 country level	0.70	0.70	0.77	0.77
N (n countries)	11,168 (31)	11,168 (31)	11,141 (31)	11,141 (31)

GDP: gross domestic product; ISCED: International Standard Classification of Education; PPP: purchasing power parity.
[a]Greece, Kosovo and Montenegro were excluded from the analysis due to missing data.
[b]The social-democratic regime is the comparison group.
[c]based on Hox (2010: 70–72).
*$p < 0.05$; **$p < 0.001$.

education did not affect well-being. While the number of children in the household did not affect the more multifaceted index of well-being (index 13), it did have an effect on the more general measurement of well-being (index 2). While being older correlated with a lower level of well-being, the connection between the two was not necessarily linear. The literature reports a U-shaped measure of greater well-being from around the age of 50, but the result is still debated (Ulloa et al., 2013). Gender affected well-being only in the more complex index of well-being. Women reported lower levels of well-being than

men. Exploring the models separately for men and women revealed that regarding the more general measurement of well-being (index 2), the number of children contributed positively to the well-being of men but was insignificant for women (see Table 5).

At the country level, the institutional structure had a significant effect on well-being. As expected, and in line with other studies (Deeming and Hayes, 2012; Samuel and Hadjar, 2016), in the social-democratic regime, the comparison group, people reported the highest level of well-being in both measurements. GDP per capita had no effect on well-being, as

suggested by some commentators (Easterlin, 2013). Using Esping-Andersen's typology, welfare regimes had a less significant impact on well-being than Ferragina and Seeleib-Kaiser's typology. The differences were particularly prominent with regard to the conservative and liberal regimes.

As Table 4 indicates, for all of the models, the uses of time affect well-being, except for time spent on caring for others and housework, in the more multifaceted index of well-being (13 items), all three uses of time had a direct effect on well-being. Work time had a negative effect on well-being. The general well-being index (index 2) indicated that an hour of work time reduced people's well-being by 0.24 points (0.004 × 60). As Table 5 indicates, in this index, the difference between men and women is that 1 hour of work time reduced 0.42 points (0.007 × 60) of women's well-being. However, work time had an insignificant effect on the well-being of men. Nevertheless, according to the results of index 13, work hours reduced the well-being of both men and women.

The frequency of personal activities, which proxied for personal time, suggests that spending more time on social activities such as sports and religious activities has a positive effect on well-being (see Table 4). Furthermore, this impact is more profound among women (see Table 5). Time spent in caring for others and housework was significant only in the general models (index 2). An hour of care and housework time contributed 0.06 points (0.001 × 60) to well-being. Again, it was relevant only for women.[2] An hour of care and housework added 0.12 more points (0.002 × 60) to their well-being, but was not significant in the case of men (see Table 5).

The findings lend support to our hypothesis H2, which posited that, after controlling for individual and macro-level variables, the uses of time would have a direct effect on well-being. The findings also support hypothesis H3 that different uses of time have different effects on well-being.

Discussion and conclusion

We can draw several conclusions from our results. First, *institutions matter*. We demonstrated that the institutional structure – the welfare regime – affects the way people use their time. While the literature has established that high quality social services

improve people's well-being (Easterlin, 2013) and that institutions affect how people use their time (Gershuny, 2011; Gershuny and Sullivan, 2003; Goodin, 2010), we focused on institutional effect on uses of time and well-being. In three of the regimes – the liberal, conservative and social-democratic – with less work time and less care and housework time (except in the liberal regime) and more personal activities, we observed a higher level of well-being. In the Mediterranean, Eastern European and Other category with high levels of work and care and housework hours, and less time spent on personal activities, we observed a lower level of well-being. These findings highlight the importance of institutions and the effect of their policies on people's preferences regarding the uses of time (Gershuny, 2011; Gershuny and Sullivan, 2003; Goodin, 2010).

Second, *uses of time matter*. The contribution and importance of our article is in providing initial evidence for the effect of uses of time on well-being even after controlling for individual and macro-level variables in a sample of more than 30 countries. We found that personal time, based on the frequency of personal activities, is meaningful for well-being. Furthermore, we documented the negative effect of work time, particularly for women. Care and housework time had a positive effect on women in the more general index of well-being (index 2) but not on men.

Policymakers develop social policies to promote people's well-being. Examples include universal healthcare, and family policies which have already been implemented in most European countries. Less attention is paid to the effect of time uses and policies that can improve people's well-being as a result of how their time is used. We believe that our findings may have interesting implications for such policies or at least for considering uses of time when creating social policies. Furthermore, we believe that such policies could be enacted without the need for significant additional fiscal resources.

Our findings do not exclude other venues of social policies but do open up new opportunities worth exploring. For example, based on the findings, and depending on the specific country, policymakers may seek to provide more personal time and less work time to give people time for personal activities (Hilbrecht, 2009). More leisure time might improve people's well-being, despite the fact that spending

Table 5. Multi-level models predicting well-being by gender (standard errors) in 31 countries.

Categorization	Well-being (index 13)				Well-being (index 2)			
	Welfare regime – Cat.1		Welfare regime – Cat.2		Welfare regime – Cat.1		Welfare regime – Cat.2	
	Men	Women	Men	Women	Men	Women	Men	Women
Individual level variables								
Age	−0.025** (0.004)	−0.014* (0.004)	−0.024** (0.004)	−0.014* (0.004)	−0.087** (0.012)	−0.045** (0.012)	−0.086** (0.012)	−0.045** (0.012)
Age²	0.000** (0.000)	0.000** (0.000)	0.000** (0.000)	0.000** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Income (PPP) Ln	0.089** (0.009)	0.043** (0.01)	0.089** (0.009)	0.043** (0.010)	0.295** (0.028)	0.219** (0.028)	0.293** (0.028)	0.218** (0.028)
Education (ISCED)	−0.003 (0.005)	0.007 (0.006)	−0.003 (0.005)	0.007 (0.006)	0.013 (0.016)	0.032 (0.017)	0.013 (0.016)	0.031 (0.017)
Marital status	0.086** (0.015)	0.088** (0.015)	0.086** (0.015)	0.088** (0.015)	0.437** (0.044)	0.380** (0.043)	0.436** (0.044)	0.380** (0.043)
Number of children in household	0.004 (0.007)	−0.006 (0.009)	0.004 (0.007)	−0.006 (0.009)	0.046* (0.023)	0.023 (0.025)	0.045* (0.023)	0.022 (0.025)
Health status	0.247** (0.008)	0.238** (0.008)	0.247** (0.008)	0.239** (0.008)	0.530** (0.024)	0.501** (0.024)	0.530** (0.024)	0.501** (0.024)
Work time	−0.001* (0.001)	−0.002* (0.001)	−0.001* (0.001)	−0.002* (0.001)	−0.003 (0.002)	−0.007* (0.002)	−0.003 (0.002)	−0.007** (0.002)
Care and housework time	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.001 (0.001)	0.002* (0.001)	0.001 (0.001)	0.002* (0.001)
Personal activities	0.058** (0.009)	0.083** (0.009)	0.058** (0.009)	0.082** (0.009)	0.134** (0.026)	0.191** (0.028)	0.134** (0.026)	0.189** (0.028)
Country-level variables								
Effects on intercept								
GDP per capita	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Welfare regime:[a]								
Liberal	−0.188* (0.09)	−0.223* (0.091)	−0.208* (0.100)	−0.273* (0.095)	−0.451 (0.230)	−0.498 (0.27)	−0.560* (0.241)	−0.762* (0.249)
Conservative	−0.152 (0.075)	−0.125 (0.075)	−0.165* (0.074)	−0.208* (0.071)	−0.300 (0.19)	−0.156 (0.223)	−0.489* (0.179)	−0.655* (0.185)
Mediterranean	−0.211* (0.071)	−0.245* (0.072)	−0.208* (0.084)	−0.262* (0.081)	−0.529* (0.183)	−0.563* (0.214)	−0.534* (0.204)	−0.712* (0.212)
Eastern European	−0.210* (0.076)	−0.181* (0.076)	−0.218* (0.084)	−0.209* (0.08)	−0.690* (0.194)	−0.587* (0.226)	−0.742* (0.203)	−0.761* (0.209)
Other	−0.129 (0.084)	−0.116 (0.085)	−0.132 (0.091)	−0.133 (0.086)	−0.649* (0.216)	−0.485 (0.252)	−0.672* (0.220)	−0.615* (0.227)
Intercept	−1.072** (0.147)	−1.018** (0.152)	−1.082** (0.150)	−1.021** (0.150)	4.596** (0.412)	4.333** (0.447)	4.560** (0.410)	4.382** (0.420)
R² individual level[b]	0.38	0.38	0.38	0.38	0.34	0.34	0.34	0.34
R² country level	0.63	0.70	0.63	0.70	0.78	0.73	0.78	0.80
N (n countries)	5317 (31)	5851 (31)	5317 (31)	5851 (31)	5305 (31)	5837 (31)	5304 (31)	5837 (31)

GDP: gross domestic product; ISCED: International Standard Classification of Education; PPP: purchasing power parity.
Greece, Kosovo and Montenegro were excluded from the analysis due to missing data.
[a]The social-democratic regime is the comparison group.
[b]Based on Hox (2010: 70–72).
*p < 0.05; **p < 0.001.

too much time in any one area, even free time, can become unpleasant (Gershuny, 2011).

Policymakers often labour to increase engagement in the workforce, but working too much seems to reduce people's well-being, especially among women. While working has a positive effect on well-being in comparison to not working (Clark, 2010), it is important to explore the number of hours and its effect on well-being. Giving people more time to care for their children might also increase people's well-being, even if housework activities are less enjoyable (Gershuny, 2011; Zuzanek and Zuzanek, 2015). Adopting a broader view of people's contribution to society, beyond work, could benefit our societies (Gorz, 1999; Gregory, 2015; Patrick, 2012; Van Parijs, 2004).

Our theoretical claims and empirical findings can benefit from further research. Replicating our study with more data on the uses of time and in specific contexts in other countries will help validate our results. Our hope is that further exploring the connection between institutions, time uses, and well-being, will help policymakers focus on the importance of uses of time in a way that may help promote people's well-being.

Notes

1. We put care time and household work together in one category differentiated from the other two general categories: work time and personal time. We did not utilize the term unpaid work. Hence, we did not

position these activities as an antithesis to work time. It is hard to distinguish between the different activities (Bianchi et al., 2012; Budig and Folbre, 2004). For example, when children are older, but still live at home, parents may still take care of their meals and laundry but there is less involvement in their homework and other childcare activities. However, such activities still qualify as taking care of them.

2. In a separate analysis we conducted to explore just care time hours, which included caring for children and adults without housework, we found that when housework was removed from the analysis, care time made a positive contribution to men's well-being, whereas work time harmed their well-being.

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Appendix 1

Table 6. The two categorizations of the 34 countries by welfare state regimes.

			Cat 1 – includes Esping-Andersen's typology[a]	Cat 2 – includes Ferragina and Seeleib-Kaiser's typology[a]
1	AT	Austria	SD	C
2	BE	Belgium	SD	C
3	BG	Bulgaria	O	O
4	CZ	Czech Republic	EE	EE
5	CY	Cyprus	M	M

(Continued)

Table 6. (Continued)

			Cat 1 – includes Esping-Andersen's typology[a]	Cat 2 – includes Ferragina and Seeleib-Kaiser's typology[a]
6	DE	Germany	C	C
7	DK	Denmark	SD	SD
8	EE	Estonia	EE	EE
9	EL	Greece	M	M
10	ES	Spain	M	M
11	FI	Finland	C	SD
12	FR	France	C	C
13	HU	Hungary	EE	EE
14	IE	Ireland	L	L
15	IT	Italy	M	C
16	LT	Lithuania	O	O
17	LU	Luxembourg	C	C
18	LV	Latvia	O	O
19	MT	Malta	M	M
20	NL	Netherlands[b]	SD	C
21	PL	Poland	EE	EE
22	PT	Portugal	M	M
23	RO	Romania	O	O
24	SE	Sweden	SD	SD
25	SI	Slovenia	EE	EE
26	SK	Slovakia	EE	EE
27	UK	United Kingdom	L	L
28	TR	Turkey	M	M
29	HR	Croatia	O	O
30	MK	Former Yugoslav Republic of Macedonia	O	O
31	KO	Kosovo	O	O
32	RS	Serbia	O	O
33	ME	Montenegro	O	O
34	IS	Iceland	SD	SD

[a]The first categorization refers to Esping-Andersen (1990). The second categorization refers to Ferragina and Seeleib-Kaiser (2011). The differences between the two are mainly with regard to the social-democratic and conservative regimes.
[b]The Netherlands is a unique case that is difficult to categorize (Van der Veen and Groot, 2006). Ferragina and Seeleib-Kaiser (2011) indicated that most studies include the Netherlands in the Christian-democratic regime).
L – Liberal – includes the United Kingdom and Ireland; the same in both categorizations. **C** – Conservative* – The first categorization includes France, Finland and Germany, based on Esping-Andersen (1990). Second categorization includes Austria, Belgium, Germany, France, Italy and the Netherlands** based on Ferragina and Seeleib-Kaiser (2011). Luxembourg included in both categorizations based on Eikemo et al. (2008) and Whelan and Maître (2010). **SD** – Social-democratic. First categorization includes Austria, Belgium, the Netherlands, Denmark, Norway and Sweden. The second categorization includes Denmark, Finland and Sweden. Iceland is included in this regime in both categorizations based on Whelan and Maître (2010). **M** – Mediterranean or Southern European includes Italy, Portugal, Spain, Turkey, Cyprus, Greece and Malta – based on Gal (2010) and Ferrera (1996). Most of the countries are the same in both categorizations except Italy, which is included in the conservative regime in the second categorization. **EE** – Eastern European included the Czech Republic, Estonia, Hungary, Poland, Slovakia, and Slovenia (based on Eikemo et al., 2008). The countries are the same in both categorizations. **O** – Refers to other countries that are not included in the earlier regimes. Most were former USSR countries. Their welfare regimes are in development or in transition (Fenger, 2007). Includes Bulgaria, Lithuania, Latvia, Romania, Croatia Former, Yugoslav the Republic of Macedonia, Kosovo, Serbia and Montenegro.
*Ferragina and Seeleib-Kaiser (2011) use the term Christian-democratic regime.
**we refer in the typologies only to the countries we have in our data.