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MACRO LEVEL DETERMINANTS OF CHILDLESSNESS IN OECD COUNTRIES AND PUBLIC POLICIES INFLUENCE

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1.INTRODUCTION

The period spanning the second half of the 1990s is characterised by a considerable change in the demographic aspect of the countries' populations, albeit with appreciable differences between one country and another. A decrease in the number of marriages, an increase in divorces and cohabitations, but above all a sharp drop in the number of births caused by a reduction in the total fertility rates were registered in most developed countries. These changes were linked to deep cultural and value changes that affected developed countries in that period. A theory to explain the phenomenon observed was developed consequently: The “second demographic transition theory”.

The choice of parenthood in a new social, cultural and economic context become therefore less and less normatively prescribed, but become only one choice among many others, in conflict with other sources of fulfilment. It has become a choice that parents evaluate very carefully, in a context of growing economic uncertainty, evaluating the growing costs and the reducing benefits.

For the above reasons, childlessness is widespread now and it has become a sort of characteristic of modern society. We define *permanent childlessness* the percentage of women who, at the end of their reproductive lives, have never given birth to any children. There are many reasons behind the childless boom: starting from the end of 20th century and still nowadays, social, economic and cultural values evolved and the consequence is the absence or delay of motherhood. One of the main factors that contribute to increase the infertility rate is the radical change in the process of family formation: marriage, despite being a well-established institution, especially in some southern regions of Europe, has increasingly been superseded by different forms of union, the main one being cohabitation, centred on an individual choice, generally non-institutionalised and with a greater tendency to dissolve. However, in more developed countries, the number of births to unmarried parents is increasing. The transition to adulthood of young people is longer and longer, both because there is a stronger investment in higher education than in the past, both for the uncertainty in the labour market that delay the process of emancipation from the family of origin.

In addition to changes in lifestyles, there is another element to be taken into consideration, which concerns the last few decades, namely a veritable Gender Revolution from the female women's point of view: there is a weakening of traditional conventions concerning the role of women, who historically was specialised in domestic work and childcare. Fertility tends to decline when women enter the labor market in large numbers, but begins to increase again as society moves towards gender equality and men make their part in the household production.

My thesis aims at studying and understanding the social, demographic and economic macro determinants of childlessness in the OECD countries and analysing public policies related to these factors, in order to select the ones which prove to be associated to low levels of childlessness. This study is focused on the OECD (Organization of Economic Cooperation and Development) countries. The OECD is an organization whose aim is to promote policy centred on achieving a higher and permanent economic growth, low unemployment rate and high living standards in member states, with maintaining financial stability at the same time (Murkowski,2021). At present, there are 36 member-states in the OECD: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland, the United Kingdom, Hungary, Latvia, Lithuania, Poland, Slovakia, the United States, Israel, Mexico, Turkey, Chile. The majority of those countries are economically developed ones, which, according to the theory of the Demographic Transition, at the same time display quite homogenous levels of demographic, social and economic development, but also a certain degree of variability in the prevalence of childlessness.

This study is structured as follows. In the first chapter we will consider all the main factors related to infertility and childlessness, some of which are cited above, according to the prevalent literature's findings. In the second chapter I will relate those factors, represented by specific indexes, to Total Fertility Rate (TFR) and childlessness levels using some updated datasets in order to quantify if and to what extent they are correlated. In the last chapter I will put in correlation the TFR and childlessness levels with some family policies in order to see the influence of the latters on the formers, and then draw conclusions on the possible strategies to contrast these phenomena. I will use annual data reaching the year 2020, since there is no available comparable data since that year.

2. INFERTILITY IN THE OECD COUNTRIES AND ITS DETERMINANTS

2.1 Overview of OECD countries

In order to give an overview of the OECD countries I referred to some literature. In particular Murkowski (2021) states that this group of countries is very homogeneous from an economic point of view, representing the majority of high developed countries, but from a demographic side there are also interesting differences. We can distinguish three groups or clusters of countries, each with similar demographic indicators that are strictly connected to the demographic development. Murkowski conducted a cluster analysis in his work taking in consideration variables such as total fertility rate, women's mean age at first childbirth, extramarital births, the number of married couples, the number of divorces, infant mortality rate, children's poverty rate and neonates' mortality rate.

The first cluster found is the most numerous and represents the countries with the highest level of development both from an economic and demographic side. These countries are: France, Germany, Great Britain, Ireland, Italy, Spain, Greece, Scandinavian countries, New Zeland, Canada, Korea and Japan. The states of this cluster have in common the following features: the lowest ratio of children's poverty, infant and neonate death rate. At the same time the same countries have different women's fertility rates. In this regard we can outline further groups within the same cluster: a first sub-group is composed by Southern Europe countries (Italy, Greece, Portugal and Spain) and Far East countries (Japan and South Korea) which have an average of women's total fertility rate of 1.3-1.4; a second sub-group is made up of countries of Western and Northern Europe (France, Germany, Great Britain, Ireland and Sweden), New Zeland and Australia where the women's fertility rate is much higher, an average of 1.8-1.9. Other characteristics common to the entire cluster are the highest extramarital birth rate and a small number of marriages registered for 1000 people.

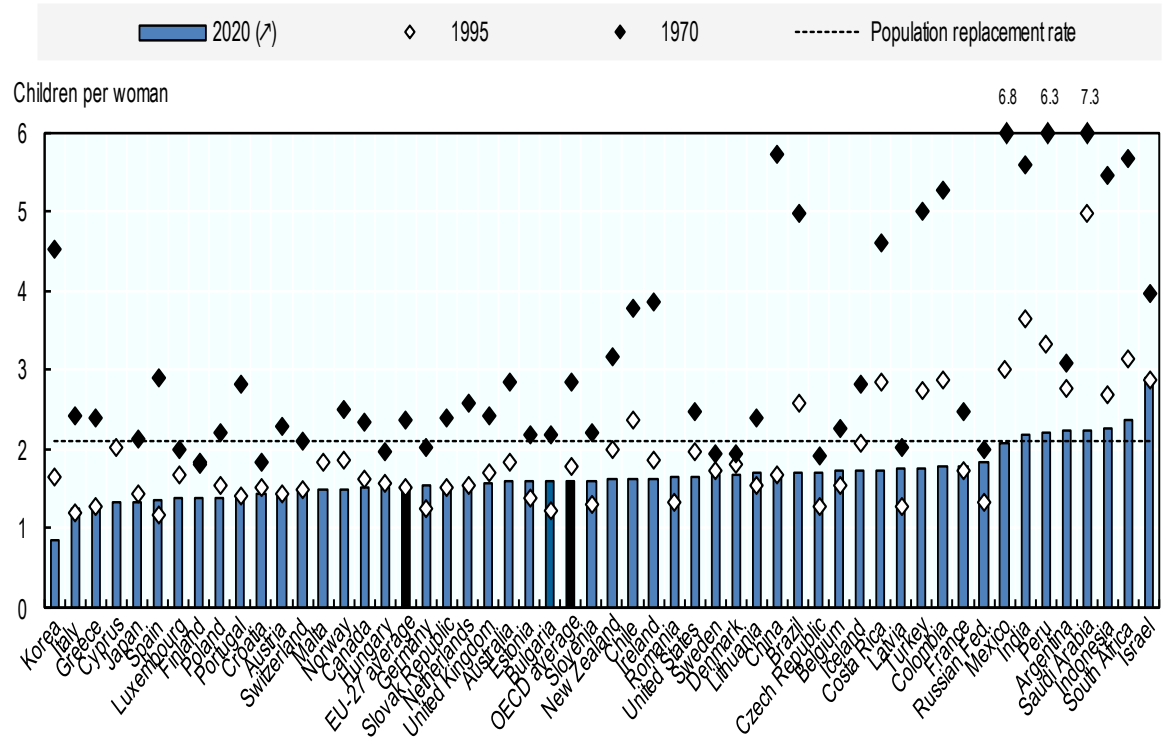
The second cluster is made up of Eastern and Central Europe countries (Hungary, Latvia, Poland and Slovakia) and USA. With respect to the other clusters, this group of countries has the lowest value of lifespan on average and in comparison to the first cluster only, it has higher infant and neonate mortality rates. Furthermore, we can notice in this group a controversial situation where the countries have a quite low fertility rate (1.55 children per woman) opposed to the highest marriage and divorce rates. On the other side, the countries

of this cluster show an extramarital birth rate and an average age of women at childbirth lower than those of the first cluster. The main feature of this cluster is the migration phenomenon, above all in Central and Eastern Europe countries, which has caused a big drop in the workforce supply and as a consequence it has boosted the population ageing process. That is one of the main reasons why those countries have a lower income level with respect to the countries of the first cluster, which will probably take them to become old before becoming rich. Despite of this economic and social gap between the two clusters, it is expected that the demographic situation of the second cluster will follow the same path of the first cluster, which has already occurred in states like Czech Republic and Estonia.

The third and last cluster is represented only by four states: Mexico, Turkey, Chile and Israel. They all have a quite high fertility rate. The countries of this cluster display the lowest mean age of women at first childbirth, the lowest divorce rate and the highest marriage rate. Those data explain why, in these countries, families are much bigger than in the other clusters, with an average household size of 3.58 persons. In this group we see also the highest children poverty rate. Among OECD countries Mexico and Turkey are the only countries still in a developing phase, considering indexes such as gross domestic product per capita and Human Development Index (HDI), with respect to the other countries which are considered as developed. Israel represents a peculiar case because it is a developed country according to its economic performances but it shows demographic characteristics typical of developing countries: a high fertility rate and a young population structure. In fact, Israel is the only state among the developed countries that has a fertility rate above the level of generation replacement, with a TFR of 3.1 compared to 1.7 of the other developed countries. This happens despite the fact that in many European countries with low birth rates there is more support from the government policies towards childbearing in comparison to Israel. That is why in Israel there is a pro-natalist attitude embedded in the culture of the people, also derived from historical episodes (replacing the Jews killed during the Holocaust).

In the figure 1, we can see a chart of the evolution of Total Fertility Rate in the OECD countries. Three years are taken into consideration: 1970, 1995 and the most recent one is 2020, so we can better understand the fertility trend in each country. In table 1, instead, we can see the total fertility rates for every country and specifically the OECD average, which shows a continuous decreasing trend from 1970 until 2020.

Figure 1: Total fertility rate, 1970, 1995 and 2020. Average number of children born per woman by countries.



Source: OECD

The level of childlessness among women is associated with fertility indicators, where the trend is often, but not always, in line with that of total fertility of OECD countries. Scholars confirm that the increase in the childlessness rate and the decrease in the nuptiality rate were the cause of the decline in fertility, which occurred during the demographic transition encompassing the late 19th and early 20th century (Rowland, 2007; Sobotka, 2017).

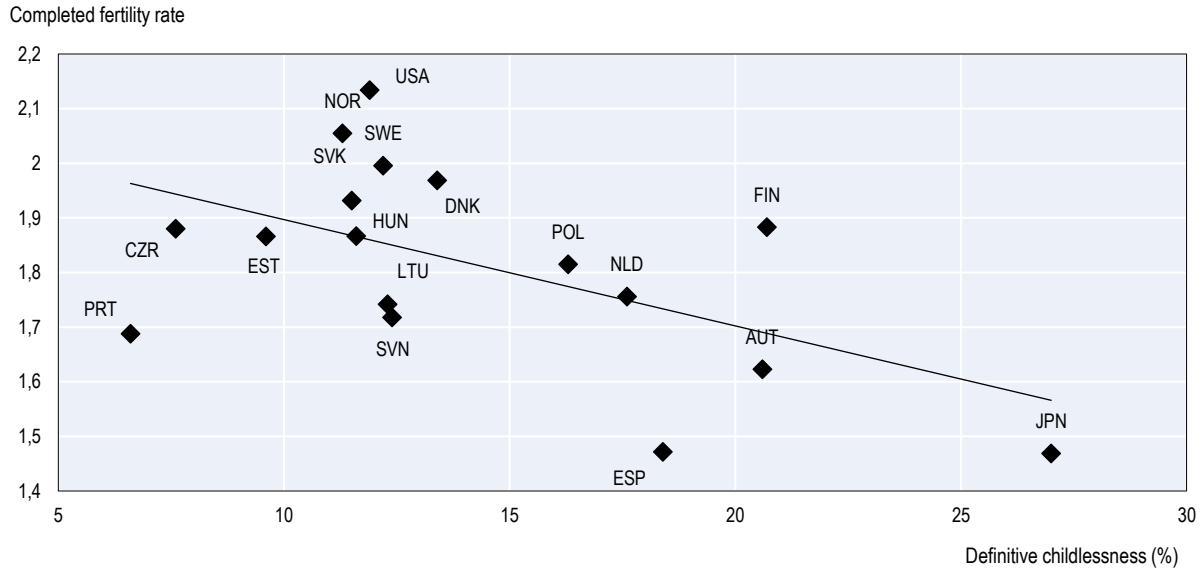
The childlessness rate of younger generations increases due to other factors, primarily changes in social, economic and cultural values. This phenomenon affects many developed countries, including Italy, where the rate of childlessness is rapidly increasing (Tanturri and Mencarini, 2008). Two theoretical approaches are used in order to analyse the childlessness and fertility changes over the years: the Second Demographic Transition Theory and the New

Home Economics; in both approaches the importance of individual choices and intentions concerning the family is highlighted, but the former focuses on the costs (direct and opportunity costs) and benefit of children, while the latter emphasises the value change that leads individuals to look for their personal fulfilment rather than to family pursuits.

Childlessness has been commonly assessed through comparisons with parenthood, mainly focusing on socio-economic conditions and individual preferences of childless people versus parents. More importance was therefore given to private matters and very little investigation on macro factors as social institutions and norms that are mentioned in fertility literature as important.

Moreover, it has often been stated, over the years and across countries, that the factors and mechanisms influencing women's decision to have few children (low fertility) or no children at all (childlessness) are the same, despite the two trends have a negative correlation (Brini, 2020). This is confirmed in the figure 2, where we can observe the negative correlation across OECD countries between fertility rate and childlessness for the cohort of women born in 1970. Indeed, following Brini (2020) results we can say that it is true only in part: in fact, the determinants of childlessness seem to be very similar to those related to low fertility found in the literature, but there are some differences in the family policies influencing the two phenomena. We will see better this last aspect in the last chapter.

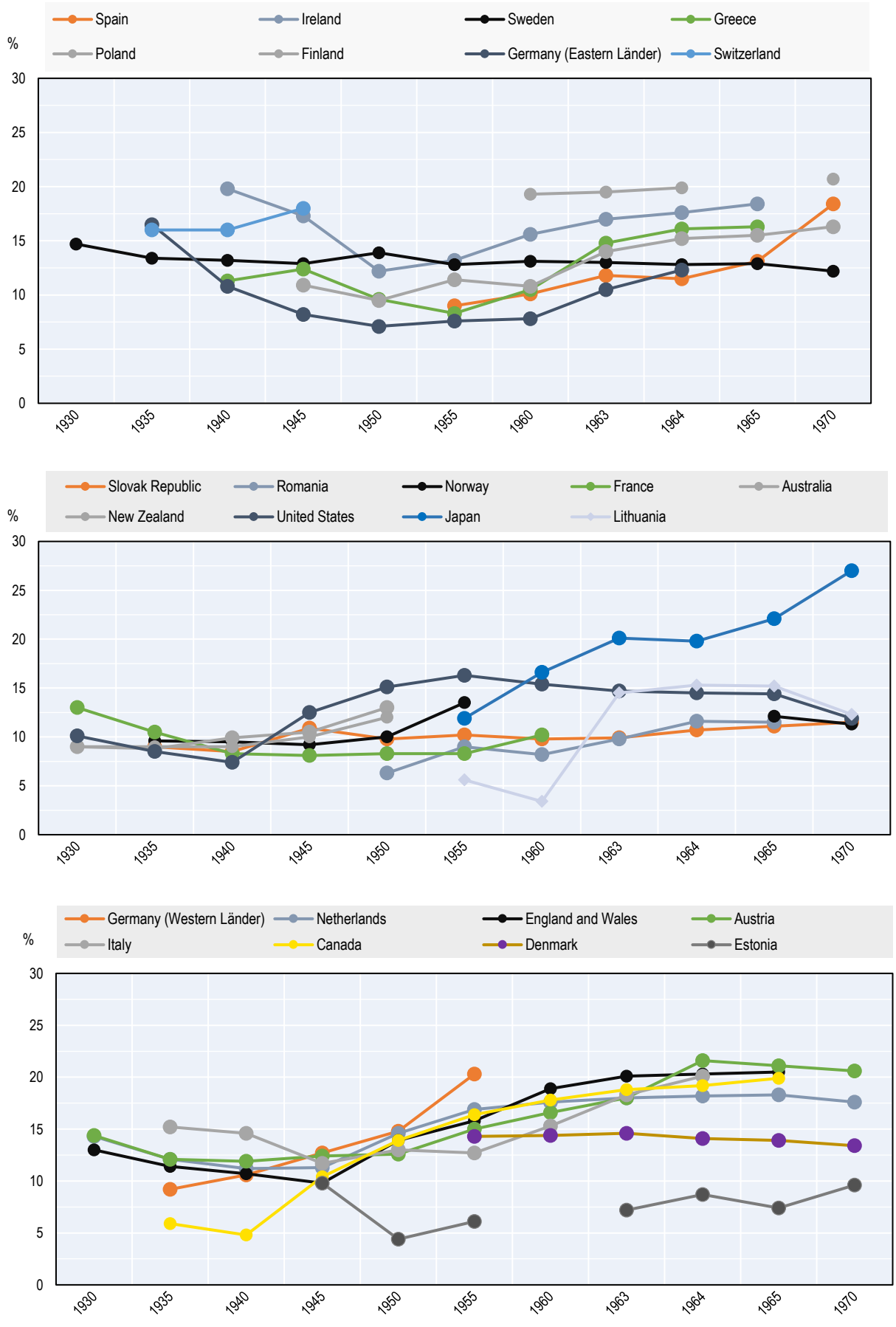
Figure 2: Definitive childlessness and completed fertility rates of women born in 1970

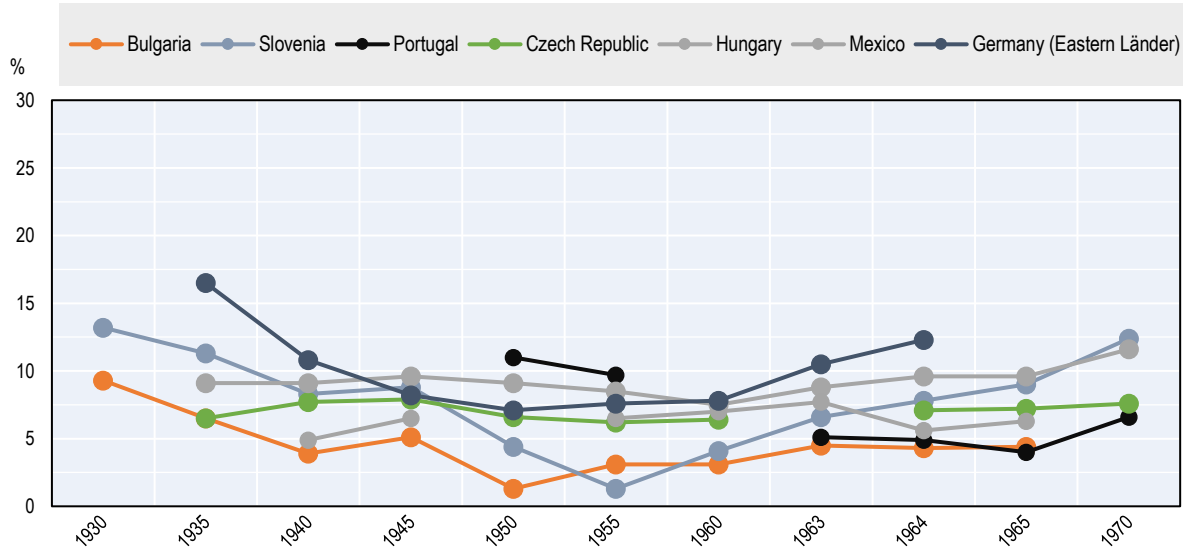


Source: OECD family database

In figure 3 we can see several charts to better display the childlessness trends in every OECD country over the years per cohort of women. Instead, in the table 2, we can see, as I was saying before, the difference in the childlessness prevalence between mid-1990s and 2010: it is easy to state that they have increased in almost every country except of Chile, Turkey, Slovenia, Luxembourg, Lithuania and Malta.

Figure 3: Definitive childlessness per women cohort





Source: OECD family database

2.2 Macro-level determinants

2.2.1 Female employment and balance between work and motherhood

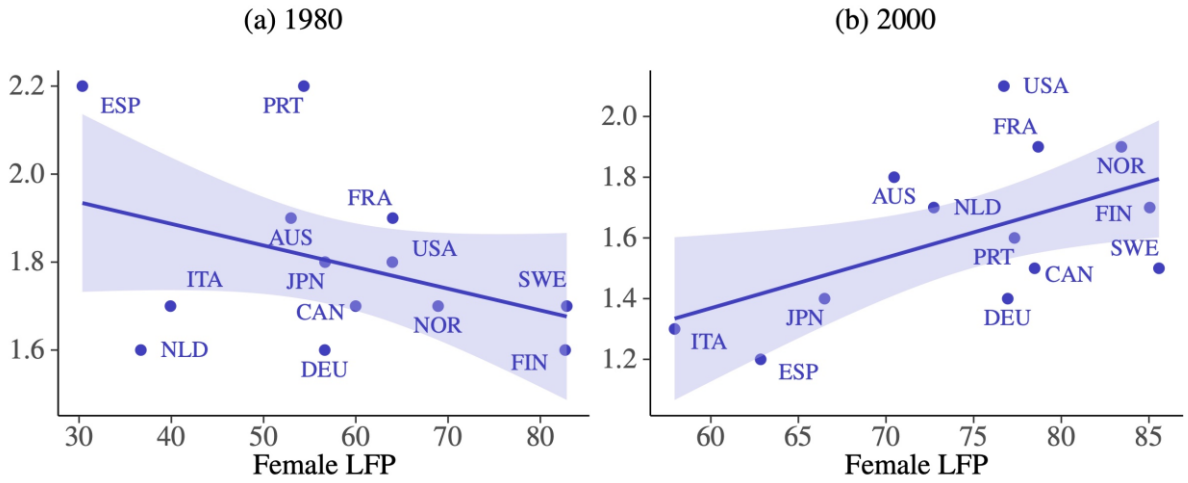
Economically speaking, the increasing presence of women in the labour market is expected to raise the opportunity cost of childbearing and thereby to reduce fertility (Becker 1981). If what we are saying is true, there should be a negative association between female employment and fertility. However, some researchers noticed that this relationship in OECD countries turned from negative to positive during the mid-1980s. In figure 4 below we can see that in 2000, in comparison to 1980, the negative association between fertility and female labour force has reversed into positive in OECD countries. “This change has prompted a debate about the relevance of the perceived conflict in women about choosing between work and childcare. Some researchers explain that the change in the association between female employment and fertility is attributable to the reduced incompatibility in women between the role of mother and worker, thereby increasing the availability of market childcare or childcare support, as well as increasing the wages of working women” (Oshio, 2019). Contrary to what those researchers have stated, Kögel (2004) does not find a positive relationship between female employment and fertility when using time-series data. He argues “the reversal in the sign of the cross-country correlation is most likely due to a combination of two elements: First, the presence of unmeasured country-specific factors and, second, country-heterogeneity in the magnitude of the negative time-series association

between fertility and female employment" (Kögel 2004). At this regard, Oshio (2019) in her work wanted to demonstrate that what Kogel says is not true. She assessed the time-series association between female employment and fertility in developed countries using data from 1970 to 2017 and she obtained two key findings. First, the more updated the data set used, the more probable it is that the time-series association will be positive between female employment and fertility, even after eliminating the heterogeneity specific to each country. These findings are different and even opposite to the results of Kögel (2004), who sustains that the time-series association between female employment and fertility remained negative. Oshio (2019) also tried in his work to give some reasons to what is behind this reversal association, stating that "We cannot exclude the possibility that higher female employment can make socio-institutional contexts more favourable for childbearing, leading to a positive association between FLFP and TFR" (Oshio, 2019). She refers to FLFP as the female labor force participation and to TFR as total fertility rate. In order to try to understand the new facts of fertility choice in today's developed countries, researchers had to consider new factors that go beyond the usual mechanisms analyzed by first-generation studies. "Recent research in economics, demography, and sociology that rises to this challenge has a common theme: the compatibility of women's career and family plans emerges as a key determinant of fertility behaviour" (Doepke, Hannusch, Kindermann, Tertilt, 2022). This is due to a change concerning women's new ambitions and lifestyles. In the past, on the contrary, due to numerous sacrifices, starting a career and family commitment were two elements that were mutually exclusive. Today, women in more developed countries aspire to have a family and at the same time to pursue a career; this coincides with the lifestyle that men have had in the past. This opportunity of work-life balance levels out a very common inequality that characterised previous generations between men and women, which for fertility research has a great value. This reconciliation, however, does not affect all countries; it is still considered a privilege of the countries with higher incomes, while in countries where this cultural change does not occur, women are still forced to privilege only one aspect. In those countries indeed they register either fewer births or fewer women in employment. There are four factors that make it easier to combine a career with a family: the family policies, an equal division of household production among partners, favourable values and flexibility in the work environment. An essential priority for balancing career and family is childcare supply, avoiding full-time parental engagement for women in order to give them the opportunity to continue their working careers. The most

relevant childcare supply is offered by kindergartens and infant schools, which can be either public or private. A complete childcare guaranteed throughout the all day and subsidised by the State would make easier for women to continue to work and to have larger families. Studies show that public spending on early childhood education is closely linked to both fertility rates and female employment in different countries. Countries with the lowest total fertility rates usually register also lower expenditure on early childhood education and care. There are also other governmental aids to balance the career-family axis, such as parental leaves, tax policies and the length of the school day.

Parental leave is thus more and more provided not only to mother but also to fathers, in opposition to the past. This system has a direct impact on fertility and parenting decisions, increasing the chances of expanding the family unit. It has recently been proven that couples are more likely to have another child only if both partners share this desire and if there is support from the father for childcare. In fact, research shows a strong correlation between men's contributions to childcare and housework and the total fertility rate. In countries with lower fertility rates, men contribute less to domestic and care activities. Other factors contributing to family and work balance are flexibility in the workplace, in case of sudden childcare needs, and labour market conditions. With the increase of unemployment and the uncertainty on the labour market, couples do not have the certainty of a steady career after the birth of a child and therefore could be postpone parenthood or even forgo it. In contrast, having a or another child is easier when there are desirable and flexible job opportunities.

Figure 4: Total fertility rates and women's labour-force participation across OECD countries



Data Source: OECD

In conclusion, we can reliably say that taking female employment and fertility alone, without any other factors influencing them, they have a negative correlation which is intrinsic in their nature. But the reality is "… female labour force participation represents only one dimension in a set of indicators determining cross-country differences in the economics of the family" (Engelhardt, Prskawetz, 2004). So, the positive relationship we have seen in the last years is caused by other factors, such as family policies, which have reversed the initial negative correlation (Evan, Vozarova, 2017; Engelhardt, Prskawetz, 2004).

2.2.2 Divorce, lack of partners and new union trends

It has always been considered that an increase in the divorce rate would negatively influence fertility (Van Bavel, Jansen, Wijckmans, 2012). This was certainly true several decades ago, during 60s, 70s and 80s, but starting from 1990 this negative association became positive. The inversion in the trend of the relationship between divorce and fertility is due to a greater change occurred in the culture of developed countries. Confirming the first trend in this association, data show that until 80s the highest fertility rates were verified in the most

religious, traditional and family-oriented countries. In addition, the same countries showed to have also low cohabitation and divorce rates, which was in line with their characteristics. Today this trend has changed drastically because of the spread of the phenomenon of cohabitation, which was much less common in the past. In fact, now the countries where the fertility rate is highest are those where also divorce and cohabitation is more spread (Prskawetz, Mamolo and Engelhardt, 2010). There may be different reasons behind this positive association between fertility and divorce. The first reason and also the most logic and obvious one could be that divorce fosters fertility rate, meaning that divorced people have on average more children than non divorced people (Van Bavel, Jansen, Wijckmans, 2012). Following this reasoning it would be rational to think that divorced people tend to have new relationships, without which several children could have not be born because of instability in the first relationship. Another explanation is that there may be other macro level factors which we don't know yet that make it possible to have high fertility rates and high divorce rates at the same time. Following Van Bavel, Jansen and Wijckmans (2012) actually the marriage is still the ideal ground for fertility since, on average, divorced people tend to have fewer children than non-divorced people. But here, an important role is played by repartnering, which could counterbalance this trend. In fact, the formation of a new union seems to be almost mandatory in order to have children. "Our analyses with the current partnership status taken into account show that people who do not engage in a second union indeed have fewer children than divorcees who do repartner" (Van Bavel, Jansen, Wijckmans, 2012). Moreover, also the type of repartnering matters because each type has different consequences: after divorce, it is shown that a remarriage union leads to have more children than non-marital unions. We can interpret this fact by analyzing the nature itself of the two unions: marriage is a stronger and more formal union and people who do not want to commit in a marriage often are not inclined to have children and to share parenthood with their partner; usually they want to enjoy life as a couple and they almost see a child as a problem. Another interesting fact that was found it is that men who are remarried tend to have more children than men who are married just once. In conclusion it seems that marriage is still fundamental for fertility, but some tendencies in the society are evolving and relationships are also changing.

Lack of a suitable partner is also considered as a major factor related to childlessness, since people do not feel comfortable and confident in having children if they do not have the right partner. Childbearing is being more and more considered as a difficult and not banal choice,

which is why the fragility of partnerships contribute to relinquished intentions. Partnership status still remains a prerogative to have children, despite of the evident fact that new union trends are bringing some changes on this side which may increase the overall childbearing (Miettinen, 2010).

2.2.3 Women's increasing education and later parenthood

In the most developed countries whose populations are highly educated, educational attainment is strongly linked to fertility timing, family size, union formation, family behaviours and partnership choices (Sobotka, Beaujouanan, VanBavel, 2017). Several studies confirm that in the last decades education has increased its importance among populations also as a status-defining characteristic (James et al., 2012). Recently rich countries with low fertility rates have been going through many relevant changes, and the opportunities, challenges and responses brought by these processes are strictly related to the educational field. In some of the OECD countries, such as Canada, Korea, Japan and United Kingdom, a big share of people is obtaining the tertiary-level education. This phenomenon leads to some consequences: "As young adults often spend their early to mid-twenties enrolled in education and economically inactive, they are postponing their transitions to employment, residential independence, union formation, and parenthood" (Sobotka, Beaujouanan, VanBavel, 2017). Many researchers have ascertained that educational expansion has been the most important factor postponing the family formation. Obviously, there are a lot of factors and forces that influence the relationship between education and fertility, which also differ by countries, regions, regimes and sub-populations. However, it is wrong thinking that this influence is unidirectional: since choices about education, partnership and childbearing are connected to each other, even partnership and childbearing preferences influence education developments. For instance, it is found that when women decide to have children they start to decrease investments in their education well before becoming mothers (Stange, 2011).

There could be several motivations behind the negative correlation between education and fertility. The first one is that highly educated people tend to value their autonomy more than lowly educated people (Merz, Liefbroer, 2017). This trend is due to the emphasis placed on the values of autonomy that characterise the curricula of higher education institutions. It is emphasised that the most educated people have been educated to value existing lifestyles

and to have a critical sense about them. It emerged that the need for autonomy is a characteristic that affects more educated individuals because they very often spend their time away from the family. With this analysis on self-reliance, it is argued that due to the experience of a good education, people give less importance to tradition, and thus to family life represented by previous generations, leading them to opt for a daily life without children or with a small number of them. The aspect of autonomy is more evident in younger people. It has been established that the greater value of individual independence is due to the processes of emancipation that have taken place in recent decades (Merz, Liefbroer, 2017).

A further aspect that affects more educated individuals is their dedication to the education of their children compared to less educated individuals. This reinforces the concept of quality/quantity trade-off, i.e. that parents have the opportunity to decide whether to invest in the number of children or on their educational quality. Despite the fact that the commitment has moved over time towards quality and not quantity throughout the population, it is found that educated people opt for quality, as opposed to those with less education. The consequence of this phenomenon is therefore that educated people are more likely to have fewer children, as opposed to those with less education (Merz, Liefbroer, 2017).

Becker's New Home Economics brings out a third aspect: the incompatibility argument suggests that individuals have problems balancing family and career for the reason of time incompatibility. In the opinion of many people, especially women, there are many limitations to educational ambitions and new job opportunities due to parenthood. Women with a high level of education who have good opportunities in employment are less inclined to motherhood, this is the result of a discordance between family and women's professional roles. With regard to this topic, differences can be noted for men: costs are lower than those of women with regard to parenting opportunities and the educational ambitions of men are usually not hindered by parenthood, especially in countries where the male breadwinner model is still firmly established. Thus, it is noticeable that especially highly educated individuals find it difficult to combine work and family, and the possible effect is the choice to have fewer children than less educated individuals. This aspect may be associated with gender. There is a further element of the study, also based on economic insights, in which, however, monetary limitations are emphasised over temporal ones. The affordability argument in fact depends on the consideration that enlarging the household family has an

important cost and that couples with a high income are more likely to afford to have children than individuals with lower incomes. Since income is closely linked to the level of education, it is therefore assumed that by increasing education there can be an increase in the number of children in families (Merz, Liefbroer, 2017).

Nicoletti and Tanturri (2008) found that in most countries higher levels of education have in general two different effects on the first birth event: a postponement of it and a reduction of its probability. There is a very strong correlation in every country between the timing at first birth and the age at the beginning of the work career. Women, on average, start to think becoming mothers only after 3-7 years from the moment they began their first work. There is a new tendency that has spread in the last decades: less and less women are willing to dedicate their lives to childcare in comparison to the past, because there are more and more women with high levels of education, dedicated to their career and not available to have children in the first years of their career. Moreover, there is one more finding: “Our results provide also empirical evidence for the existence of a biological age constraint for fertility. As expected, the probability to have a first child tends to increase with age until about 30 years old and then tends to decrease” (Nicoletti and Tanturri, 2008).

Bhrolcháin and Beaujouan (2012) in their studies, apart from confirming what we have said until this moment, they have also found another specification: they distinguish between educational enrolment, educational level and post-enrolment phase. In fact, it is found that the extension of the time to first birth with respect to the past is not caused only by the increasing number of educational enrolments but also by the higher level of education attained by women, since the most educated women tend to postpone the first childbearing than other women. This is explained by major opportunity-costs for more educated women: they have fewer incentives than others to leave the workplace to become mothers because they invested more time, all the time following the enrolment and necessary to attain the qualification, and money in their careers (Bhrolcháin and Beaujouan, 2012).

2.2.4 Gender inequality

In the last decades we have watched relevant improvement in the gender equality field, but despite of this there is still a consistent gap between male and female population, above all regarding the labour market. Researchers have found that in developed countries the different impact of parenthood on men and women plays the main role in the remaining gender inequality (Kleven and Landais, 2017). Taking as an example the Denmark case, it is stated that 80% of the gender inequality still in the running is represented by 'child sanctions', which are faced by women and not by men (Kleven et al., 2019).

Kleven and Landais (2017) argue that the most developed countries which have already passed through the Second Demographic Transition, have experienced some changes that are strictly linked to the development of the gender equality. Despite a substantial gender convergence over the last century, there have been some processes, such as an impressive technological progress and capital accumulation, that have emphasized these gender differences. Indeed, those two processes have required more mentally-intensive tasks than physically-intensive ones in the labour market, thus giving much more opportunities to women which have an advantage on this skill. As a consequence, female labour productivity has increased exponentially and in turn also opportunity cost to leave the job and raise a child has increased. This has induced women to have fewer children and to focus more on the labour market.

"Besides a greater division of roles within the couple, the perception of how fair the division of role is may be at least as important" (Brini, 2020). The author introduces an important distinction regarding the gender role models, that is the distinction between the dimensions of gender equality and gender equity. Gender equality refers to equality in results, such as equal access to education or to labour market participation, while gender equity relates to the perception. The second dimension means how the distribution of certain resources perceived as fair by male and female people, regardless of wether the access to those resources is effectively equal. It is stated that low fertility is the result of non-congruence between structural opportunities and the normative context, where the structural context does not support the norms about gender equality. In another sense, the normative context may not be equal for men and women in practice, but as long as it is perceived fair by both genders, it has no consequences in terms of childbearing behaviours. Previous studies tend to confirm this phenomenon: "in those societies where people express more egalitarian

attitudes towards the division of gender roles and where there is a fairer division of household work and childcare time, fertility rates, as well as fertility intentions, are generally higher" (Brini, 2020). On the contrary, lower fertility rates are shown in countries where gender egalitarian revolution has not evolved. As confirmation of this we can take the examples of Italy and Germany, where there are at the same time high rates of childlessness and low scores of gender equality indexes. However, we have also to consider that this is not the unique type of correlation among OECD countries, since it is shown that low levels of childlessness are associated not only to high gender equality countries, but also to countries with low gender equality (Sobotka, 2017). As we have seen for fertility also for childlessness it should be considered the possibility that it is caused by a gender inequality that persists despite the the revolution in women's role.

Nevertheless, Brini (2020) has conducted her studies analyzing some macro-level factors associated with childlessness and fertility. Specifically, she assessed the two phenomena separately, observing the influence of gender norms on how many children mothers have and on childlessness. This means that if the literature is right, institutional and normative contexts that support a more equal sharing of family responsibility will affect in the same way fertility and childlessness behaviours. Brini (2020) found, actually, that longer and of better quality parental leaves are significantly associated with a lower propensity to be a childless woman, whereas they are poorly significantly associated with having more or fewer children. "Where the opportunity for mothers and fathers to take parental leave is higher, and leaves are longer and of better quality, women more often become mothers, but their family size is the same as that of mothers living in contexts where parental leaves are lower" (Brini, 2020). She also put in relation gender norms on work with fertility and childlessness; it has emerged that in societies where more people think that men have more favourable rights than a woman in the labour market, women tend to build less numerous families and to be childless to a greater extent." It emerges therefore that when and where women are considered as equal to men in the labour market, the level of fertility is higher and the level of childlessness is lower, which is in line with our expectations" (Brini, 2020). In conclusion, we can say that fertility and childlessness are correlated to family-friendly institutions, even though they tend to be dependent on the actual level of gender equality reached in a society. Moreover, we can confirm that institutional and normative contexts influence both childlessness and fertility, even if sometimes not to the same extent.

2.2.5 Economic uncertainty and social trust

There is a great deal of research that examines the connection between uncertainty and fertility, a literature stimulated by international events, including the economic crisis that began in the second half of 2007 with its repercussions on fertility (Aassve, Le Moglie, Mencarini, 2020). Although there are no explicit statements and arguments on the subject, these studies support a very specific underlying reason: the moment of pregnancy implies a large investment that is irreversible; moreover, resources and family economic well-being have a very long duration and consequently, with a lack of certainty of the future, couples tend to postpone or give up this path. The criterion couples use to deal with this uncertainty depends entirely on their view of risk and their support network. Those who fear the consequences of these risks tend to delay the necessary investment in a pregnancy. In coping mechanisms, despite the ambiguity about fertility trends, the extended family is defined as a real resource from which people can derive good support when needed. A key piece concerning the concept of social capital concerns popular trust, which has received less interest in the demographic aspect, despite its importance in the coping mechanism in the face of uncertainty (Aassve, Le Moglie, Mencarini, 2020). A number of favourable outcomes are attributed to social trust, including a reduction in corruption, crime and delinquency, lower income inequality, better functioning of financial institutions, and incentives for economic growth. It is also positively associated with the quality of institutions and political participation. The key point is that this trust in society improves civic commitment and unity with the entire community, which generates greater security and other positive characteristics that help couples in the decision-making process of a hypothetical pregnancy. People's perception of uncertainty is very relevant to fertility and social trust serves to cope with uncertainty. An interesting study is to consider whether social trust is important for fertility in times of increasing uncertainty. Aassve, Le Moglie and Mencarini (2020) included in their studies a time period where the financial crisis of 2008 has an important impact, where for many nations it expanded into a more general economic crisis. Its onset was unexpected for most families, causing numerous economic difficulties and establishing a change in uncertainty.

Gozgor, Bilgin and Ranzagas (2021) tried in their studies to search for a relationship between economic uncertainty and fertility. In order to measure economic uncertainty, they used the World Uncertainty Index (WUI), which is an index based on reports focusing on economic

policy and international events in order to assess the level of uncertainty in the economic conditions of a country. The WUI is useful to valuate economic uncertainty because focuses on the wages and consumption, which are strictly linked to the economic situation of a country. They found a strong correlation between WUI and fertility in several countries, and more specifically an increase of WUI is linked to a decrease of fertility. This is in line with the theory that a precautionary behaviour of saving money negatively influence the fertility. In view of these considerations we can say that "Our results indicate that uncertainty is a potentially important determinant of fertility, enough so to reveal itself in macroeconomic correlations" (Gozgor, Bilgin, Ranzagas, 2021).

Moreover, researchers state that fertility also has a pro-cyclical tendency, reacting to the ups and downs of the business cycle (Sobotka, Skirbekk, Philipov, 2011). Usually, these cyclical ups and downs have a brief duration and a small entity, so they can be eliminated in order to analyze the very long-run trend. During periods of recession the decrease in fertility is associated to the childbearing postponement, which is even more accentuated for the first births (childlessness). GDP growth, as an indicator of the economic situation, has shown to be linked to fertility trends. "Our simple analyses have illustrated this relationship for low-fertility developed countries after 1980. Periods of economic recession or stagnation were frequently followed within one or two years by a decline in period fertility rates" (Sobotka, Skirbekk, Philipov, 2011). Nevertheless, measures of unemployment and consumer confidence seem to be more appropriate as indicators to represent the economic uncertainty of a country. Indeed, some evidences confirm that these two indicators are more relevant for fertility changes than GDP (Sobotka, Skirbekk, Philipov, 2011). The most important motivation behind the negative correlation between recession fertility is the increase in unemployment rate and job instability. In fact, this worsening of the labour market conditions causes in turn an increase in the childbearing cost-opportunity, especially for high-educated women. This is because they gauge riskier during recession to undertake a childbearing strategy. Overall, couples will obtain lower salaries and face fewer job opportunities, and their smaller budget will reduce the affordability of children.

However it seems that the Great Recession of 2008 is different with respect to the previous recessions for what concern the magnitude of countries involved and the duration. So, a separate study of this particular recession is needed. Literature states that a huge number of countries faced a substantial fertility decline between 2008 and 2013 (Comolli, 2017). At the

beginning of this century, despite a long run trend of fertility decline, fertility rates recuperated a bit. This means that there is a strong negative correlation between uncertain economic situations, or worse economic shocks, and fertility rates. Specifically, Comolli (2017) in her studies found that the unfavourable consequences on fertility rates are due to the worsening labour market structure that occurred during the Great Recession. The increase in unemployment rates, including total, youth and female unemployment during this crisis period, decreased total fertility rates in Western countries by an average of 0.05 births, generating a 3% drop since the start of the recession. It is considered that female unemployment is linked to a lower fertility and as already noted, that being in work is crucial for fertility, and women do not use the periods outside the labour market for motherhood. The difficulty is not in devising precise indicators of material economic conditions, but in designing indicators of economic insecurity and identifying their effect on fertility. Three uncertainty indicators have been established for the impact on fertility: political uncertainty, sovereign risk and consumer confidence, which is shown to be highly related to fertility for the household sentiment about their current and future financial condition (Comolli, 2017). During the Great Recession period, the average decline in the Consumer Confidence Index of the 32 countries surveyed resulted in a drop in the fertility rate of approximately 0.015 births per woman, widening the decline in TFR by a further 1 per cent since the start of the crisis period. The EPU index is used to include both political uncertainty, as perceived by experts and by measures of media coverage of economic uncertainty, which is usually a barometer of how individuals feel about the economic climate. It is shown that total fertility rate reacted in the same way and at same magnitude to sovereign debt risk as unemployment. Also, Comolli (2017) affirms a statistically significant negative correlation between EPU index and fertility in every country. “The largest negative consequences of the crisis for fertility rates are registered among very young women, 15–24 years old, while the response is milder for women older than 40” (Comolli, 2017). Older women indeed tend to renounce less easily to have children than younger women because of economic crisis, as they seem to be aware that they have no time to catch up postponed fertility.

3. INDICATORS AND REGRESSIONS BETWEEN CHILDLESSNESS AND THEIR DETERMINANTS

The main part of my thesis concerns the analyses of the regressions between childlessness and all the indicators seen before in order to see whether and to what extent there is a correlation. As indicator of childlessness I used the definitive childlessness in each country and it can only be assessed at the end of the reproductive period, which for women is usually between ages 45 and 49. As a consequence I rely data on women born in 1970 at the end of their reproductive life, so referring to year 2010 or the closest year available. For the other indicators I took data of the year 2010 in order to assess the same period and to have results as reliable as possible. The analysis concerns the OECD countries for which historical data about each indicator are available. Moreover, for each linear regression analyses I will indicate the regression coefficient and the p-value, or value of statistical significance. If the p-value is ≤ 0,001 the test is significant; if the 0,001 < p-value ≤ 0,01 the test is moderately significant; if the 0,01< p-value ≤ 0,05 the test is significant.

All the data used for the scatter plots graphs and the regression analysis that we will see in this chapter and in the next one are available in the corresponding table shown in appendix.

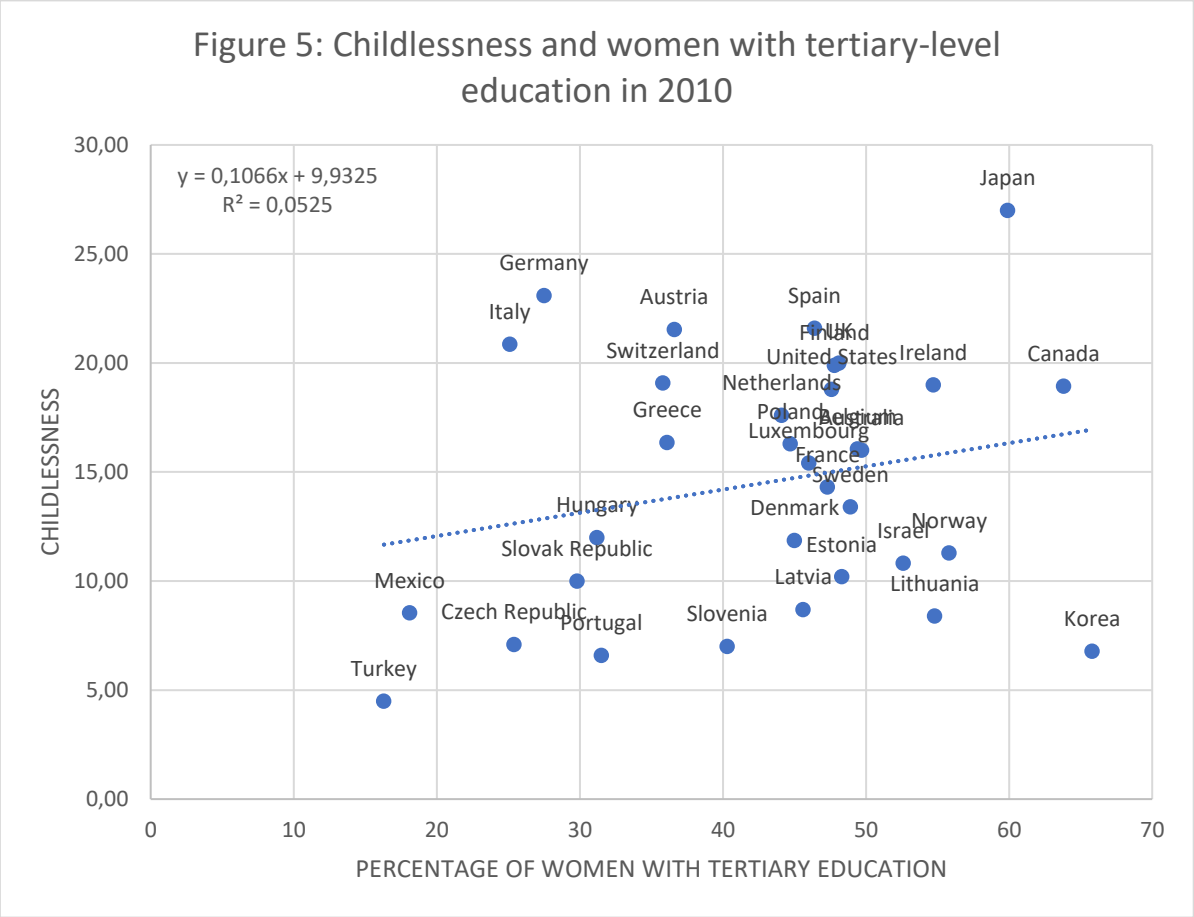
3.1 Regression with socio-economic indicators

In this section I will analyze some socio-cultural indicators possibly linked to childlessness, such as female level of education and female employment.

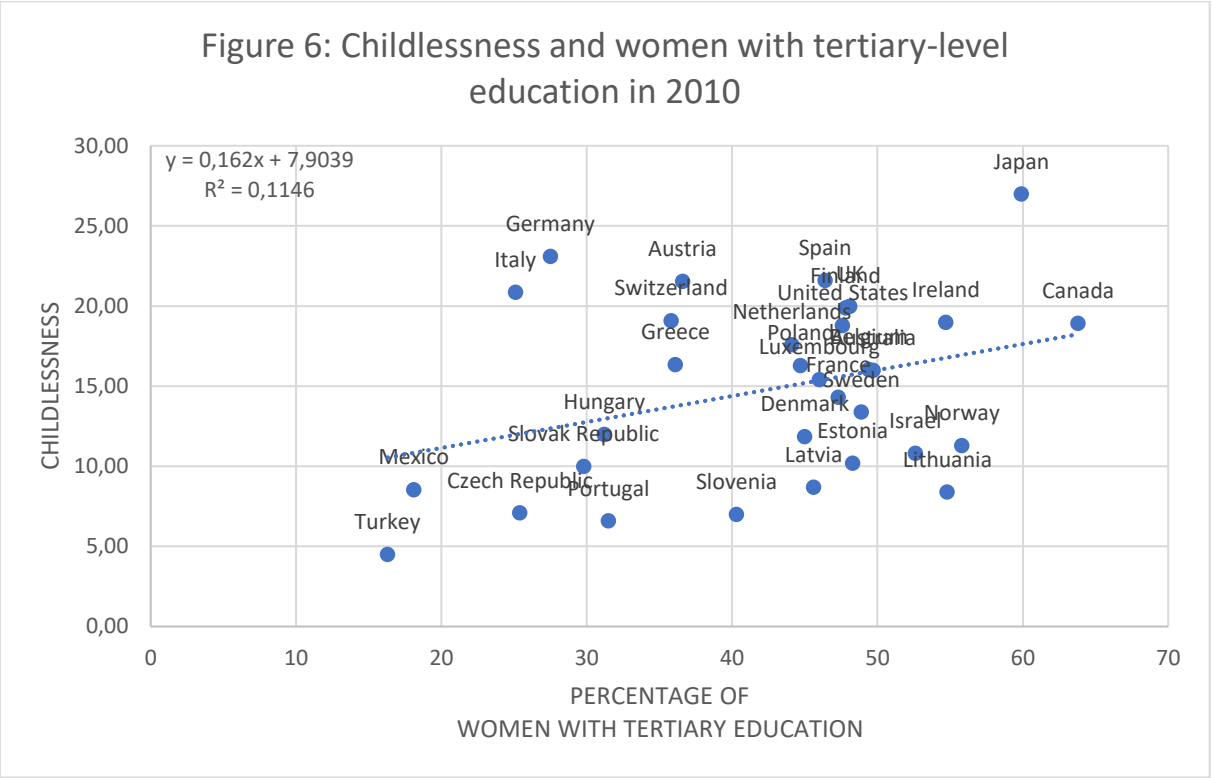
3.1.1 Women with tertiary education

Women with tertiary education are defined as those having completed the highest level of education. This includes both theoretical programmes leading to advanced research or high skill professions such as medicine and more vocational programmes leading to the labour market. The measure is the percentage of the total female population. As globalisation and technology continue to re-shape the needs of labour markets worldwide, the demand for individuals with a broader knowledge base and more specialised skills continues to rise. As a consequence of this phenomenon also the percentage of women with high level of education has been increasing more and more in the last years. So, I tried to see wether

there is a correlation between this trend and childlessness. As a result of my linear regression analysis there is no relation between childlessness and women with tertiary-level education, with a p-value=0,2 and regression coefficient=0,1 (Fig. 5).

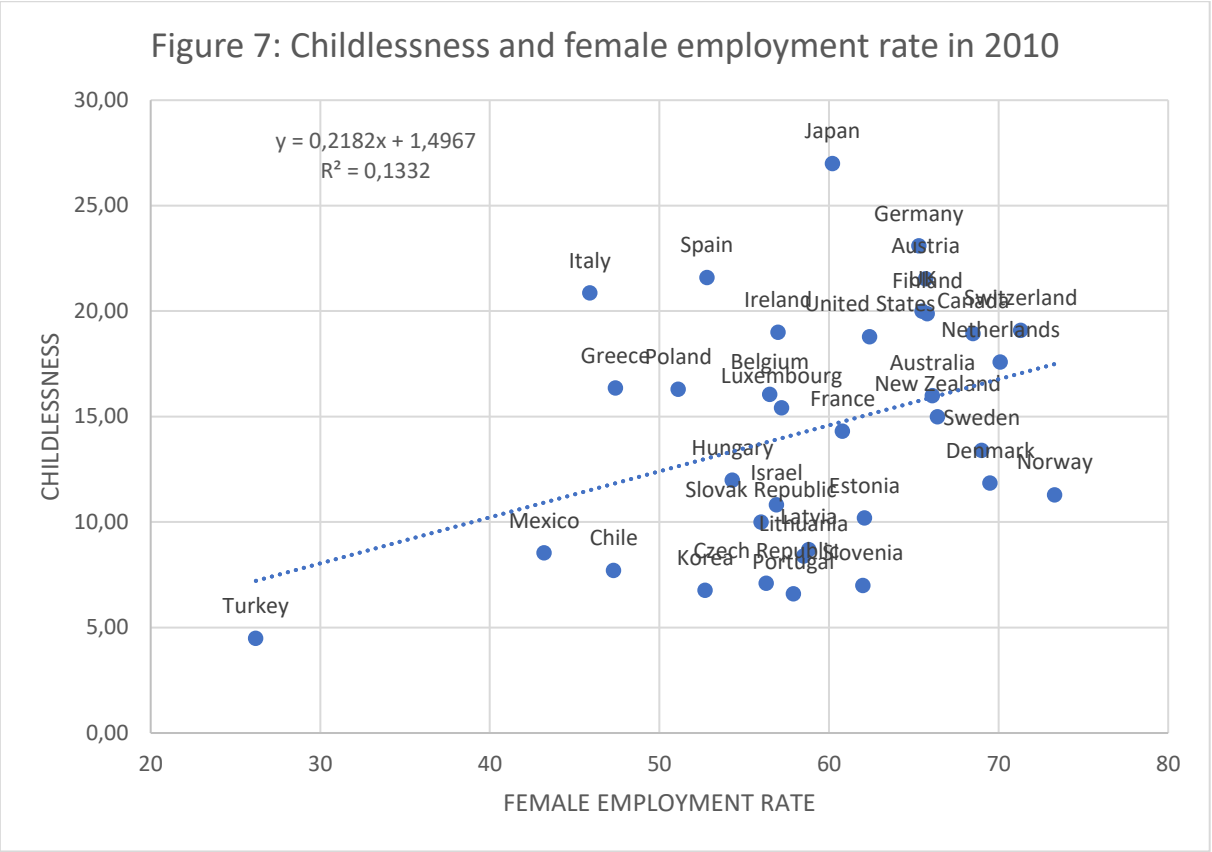


However, this regression analysis becomes significant as soon as I remove Korea from the group, which is an outlier (Fig. 6). In fact, the results show a p-value=0,05 and a regression coefficient=0,16, suggesting that there is a positive, even if weak, correlation between childlessness and women with tertiary education. This is in line with the prevalent literature, which states that the increase in female education is losing its power on childlessness in comparison to the past, but it is still significant.



3.1.2 Female employment rate

Female employment rates are defined as a measure of the extent to which female available labour resources (women available to work) are being used. They are calculated as the ratio of the employed women to the female working age population. In general employment rates are sensitive to the economic cycle, but in the longer term they are significantly affected by governments' higher education and income support policies and by policies that facilitate employment of women and disadvantaged groups. Employed people are those aged 15 or over who report that they have worked in gainful employment for at least one hour in the previous week or who had a job but were absent from work during the reference week. The working age population refers to women aged 15 to 64. Looking at the childlessness and female employment rate (fig. 7), the test shows a significant correlation between the two variables with a p-value=0,03 and a regression coefficient=0,22, which means that they are positively correlated. Therefore, we can say that, tendentially, when female employment rate increases, childlessness increases too. This confirms what literature says about this phenomenon.

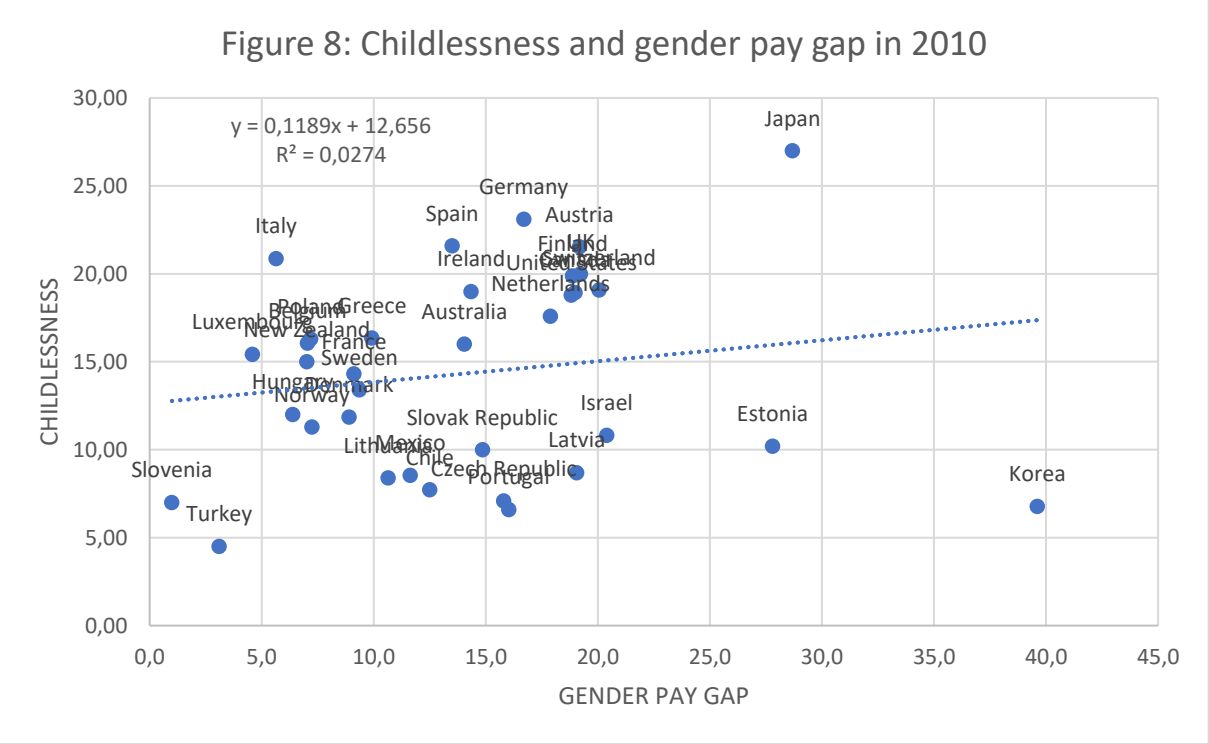


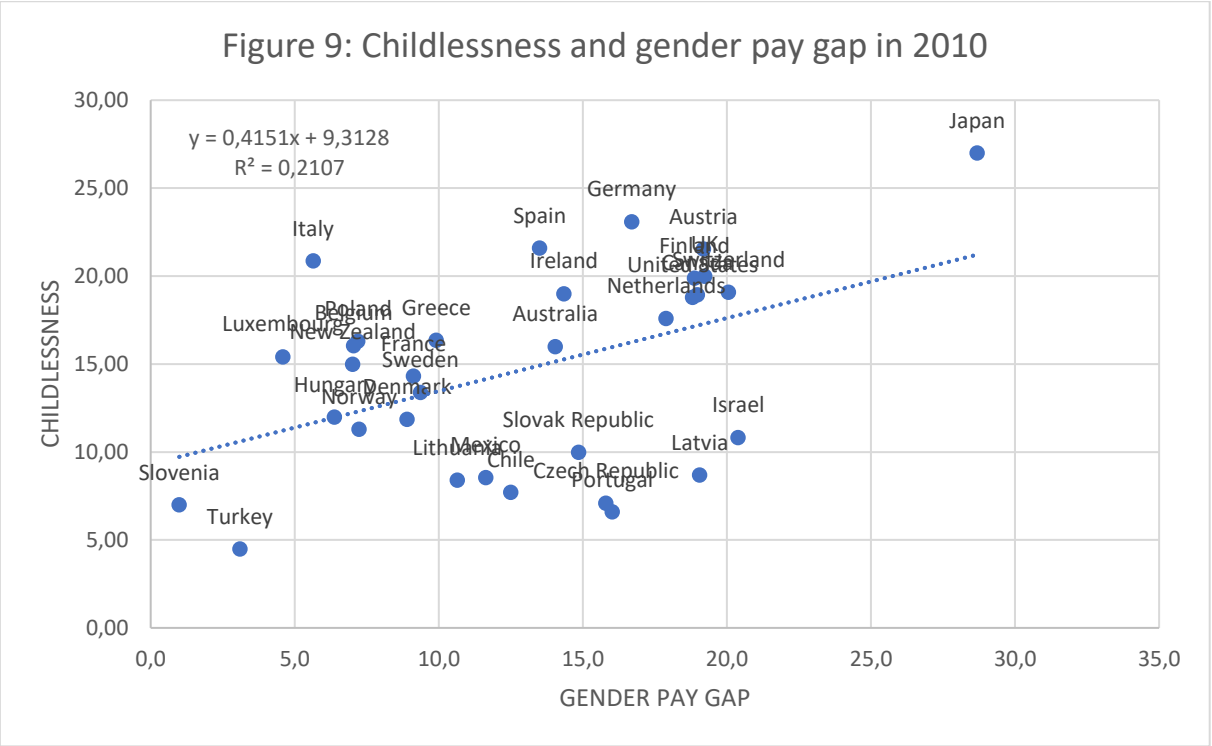
3.1.3 Gender pay gap

The gender pay gap in median earnings of full-time employees is defined as the difference between the median earnings of men and of women as a proportion of the median earnings of men. Gender pay gaps vary considerably across the OECD. The widest gender pay gaps are in the two East Asian OECD countries (Japan and Korea), plus Latvia, Estonia and Israel. The narrowest are found in a variety of OECD countries, including Western European countries (Belgium and Luxembourg), Nordic countries (Denmark and Norway), and Latin American countries (Colombia). In some of these countries (e.g. Colombia) small gender pay gaps are the result of 'selection effects', whereby for various reasons only more highly qualified female workers tend to remain in the formal labour force, inflating female median earnings. In some others – including Belgium, Denmark, and Norway – the narrow gap is driven more by a compressed wage structure and low levels of earnings inequality more generally. Gender pay gaps have fallen in most OECD countries. Since 2002 the gender gap in median earnings decreased in 29 of the 33 OECD countries for which full data are available. Decreases were largest in Austria, Greece, Iceland, and Luxembourg where the gap has fallen by more than 11 percentage points. However, some countries have seen increases: Hungary in particular has seen its pay gap increase by over three percentage points since 2002. Overall, the OECD average gender pay gap has fallen by 4.1 percentage points since 2002. Gender pay gaps tend

to be slightly wider among highly educated men and women than among their less educated counterparts, though several countries (e.g. Australia, Canada, Estonia, Greece, Israel, Latvia, Mexico, Switzerland, Türkiye and the United Kingdom) show wider gender pay gaps among low-skilled men and women.

In figure 8 we can see the results of my regression analysis between childlessness and gender pay gap across OECD countries. Apparently, there is no correlation since the regression coefficient= 0,12 and p-value= 0,34, meaning that the test is not significant; but looking at figure 9 we can see that, not only there is a positive correlation, but it is also highly significant. This is because I conducted two analysis, the first with all the OECD countries, while in the second I excluded the outliers Korea and Estonia, both characterized by high levels of gender pay gap and low levels of childlessness. Here the regression coefficient= 0,41 and the p-value= 0,007.





3.1.4 Women's part-time employment rate

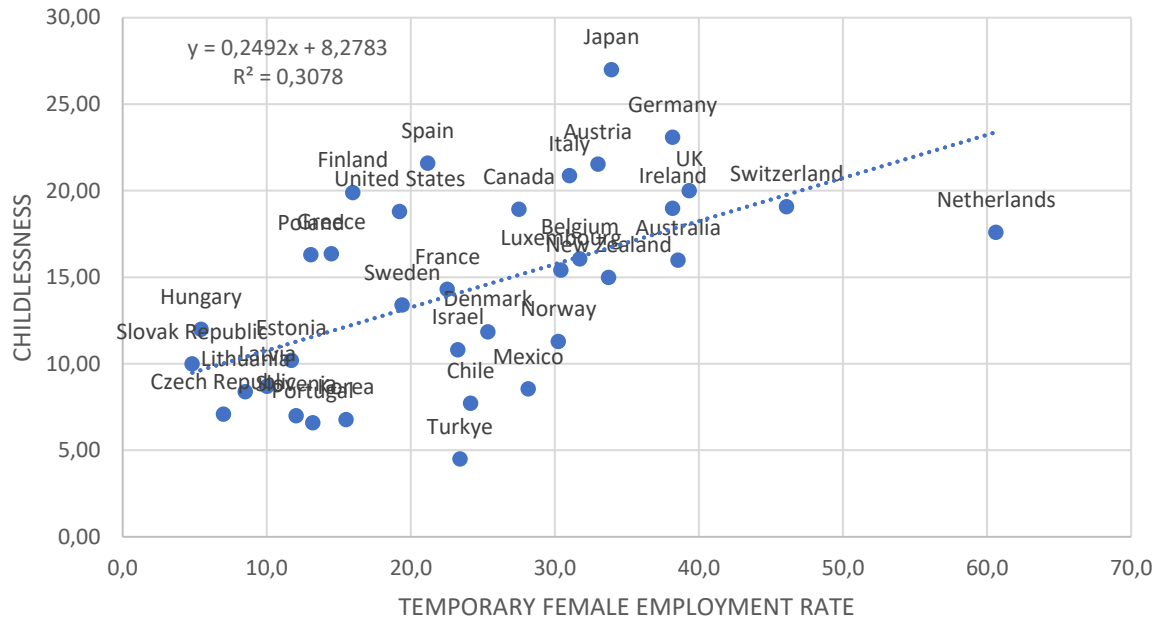
As an indicator of reduced time at work for women's we use the proportion of women who are part-time employment as a percentage of total employment. Part-time employment is defined as usual weekly working hours of less than 30 hours per week in the main job. Trends in part-time employment are mixed. More than half of all OECD countries have seen women's part-time employment rates fall since the mid-2000s, sometimes by as much as ten percentage points or more (e.g. Luxembourg and Poland). In others, however, women's part-time employment has increased. In Korea, women's part-time employment rate has increased by over 10 percentage points since 2005.

I used female part-time employment as a possible index of economic uncertainty, since it indicates a situation of instability and uncertainty about the economic condition of people in the future.

The results of my regression analysis provide a very interesting fact on the correlation between this variable and childlessness, since they are positively correlated with a regression coefficient of 0,25 and the test is also extremely significant, with a p-value= 0,0005 (Fig.10). This result is quite surprising as often the part-time employment option is chosen to facilitate work-life balance.

However, our results seem to suggest the opposite, at least at macro level, as the relationship is statistically robust and positive.

Figure 10: Childlessness and part-time female employment rate in 2010

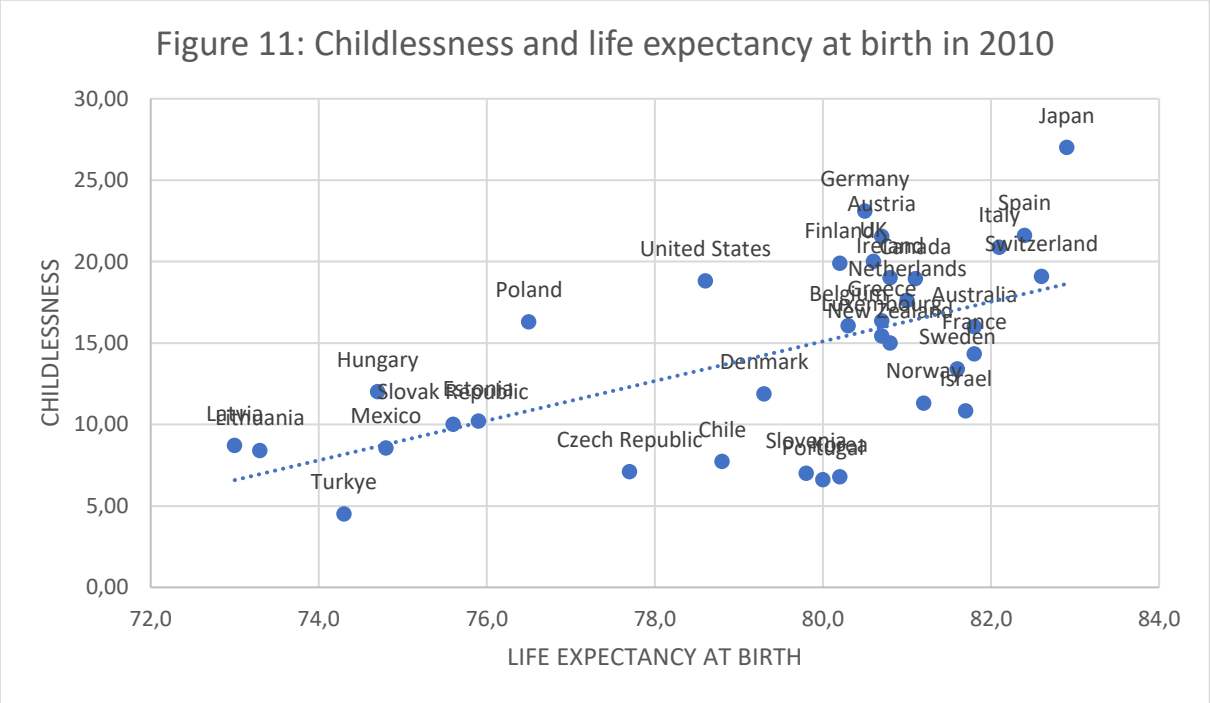


3.1.5 Life expectancy at birth

Life expectancy at birth is defined as the average number of years a new-born child would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout their life. OECD countries have made remarkable progress in increasing life expectancies at birth. The OECD average life expectancy for a new-born girl is 83.2 years, just over 13 years longer than the average for a girl born in 1960 (71 years). Similarly, the average life expectancy for a new-born boy is 77.9 years -- about 13 years longer than the average life expectancy for a boy born in 1960 (65 years). Girls tend to live longer than boys, but the size of the gender gap has varied across countries and over time. Today, a new-born girl could expect to live, on average across OECD countries, around 5.3 years longer than a new-born boy. This is equal to the gender gap in 1960 (5.3 years). However, the gender gap has changed over time. While the gap increased substantially during the 1960s, 1970s and 1980s (reaching a peak of 7.0 years in 1991), it has narrowed over the past 30 years. This "narrowing" pattern reflects in part a reduction in gender differences in risky behaviours such as

smoking and alcohol use. Female life expectancy at birth ranges from 78.0 years in Mexico to 87.7 years in Japan. Girls born in Australia, Finland, France, Korea, Spain and Switzerland could also expect to live particularly long lives (more than 85 years). For boys, life expectancy at birth ranged from a low of 70.1 years in Lithuania to a high of 81.7 years in Iceland. Cross-country differences in life expectancy, though still high, have declined over the past 50 or so years. This reduction is mainly due to important gains in life expectancy in countries like Korea and Turkey (21 and 24 years since 1970, respectively). Catch-up gains in these countries are partly explained by substantial declines in infant mortality rates.

The results of my linear regression analysis are surprising. In fact, we can say that there is a really strong positive correlation between childlessness and life expectancy at birth, with a p-value= 0,0001 (extremely significant) and a regression coefficient= 1,22. It means that where life expectancy is higher childlessness is higher too and viceversa.

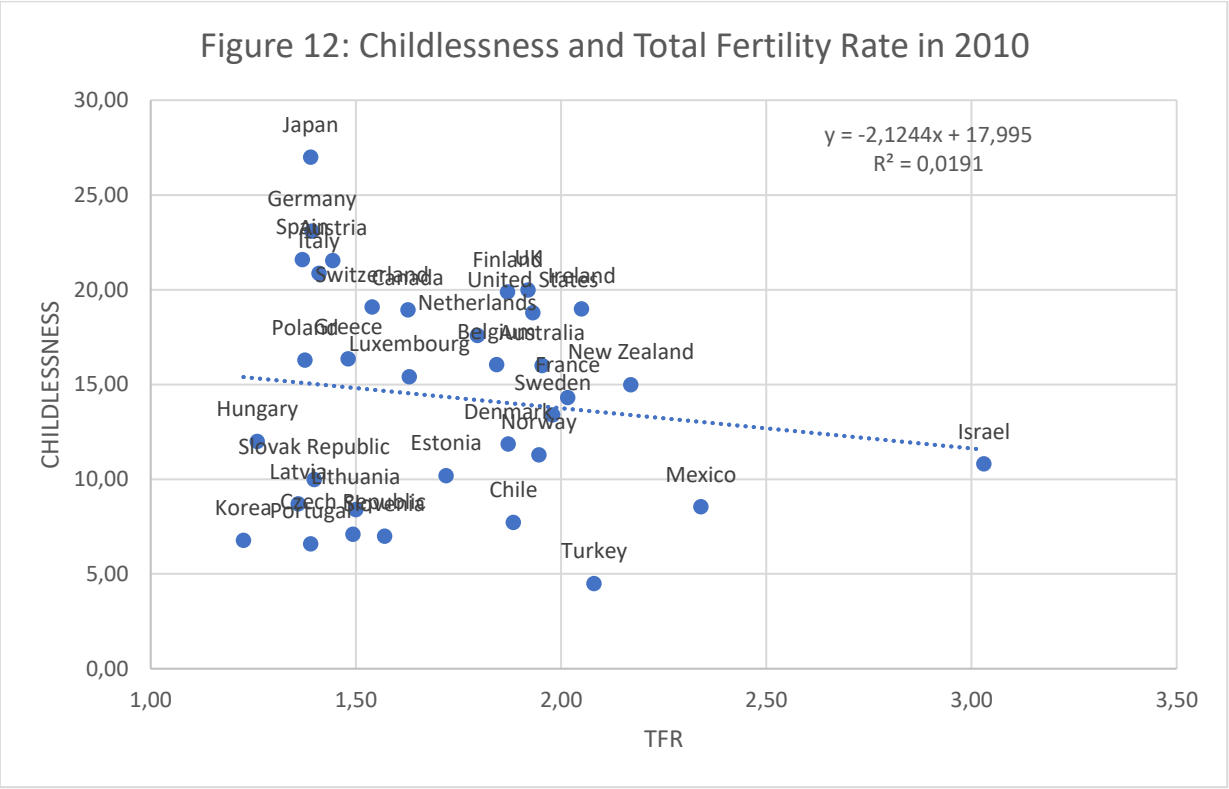


3.2 Regression with demographic indicators

Now we will see the correlation between childlessness and another type of indicators: demographic indicators. These concern what happens in the demography, such as fertility rate, marriage rate and divorce rate.

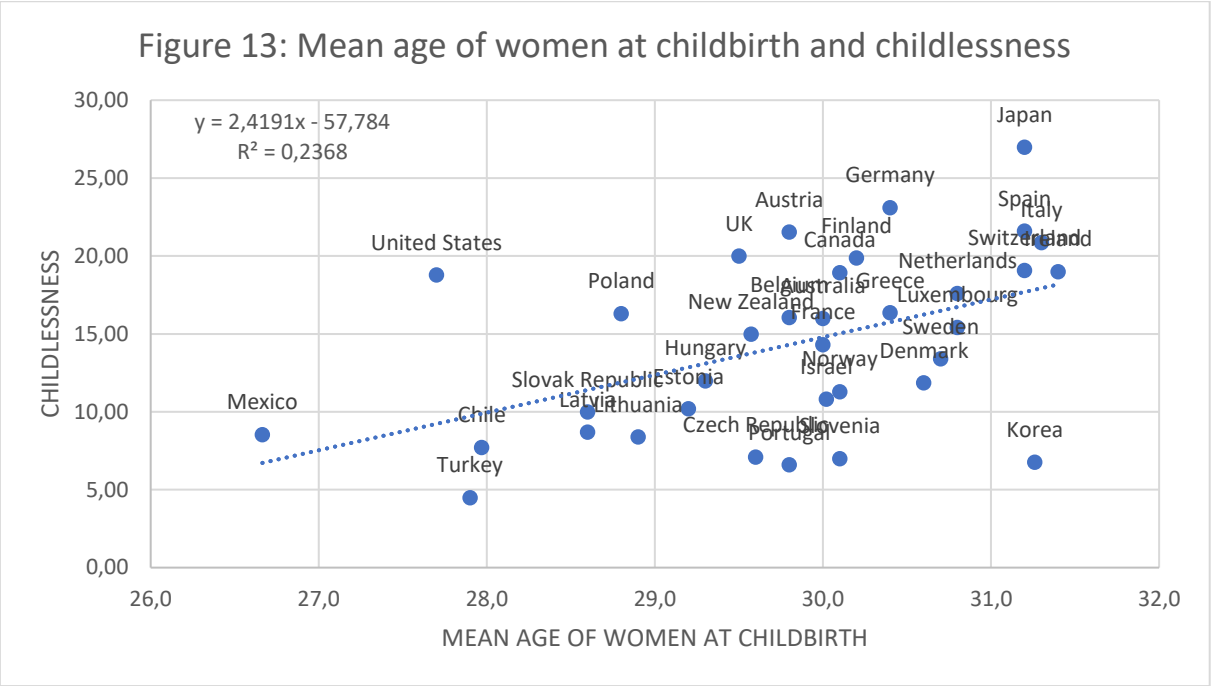
3.2.1 Total fertility rate

Total fertility rate is the average number of children born per woman over a lifetime assuming no female mortality during reproductive years. Assuming no migration and unchanging mortality rates, a TFR of 2.1 children per woman is generally sufficient to generate a stable size of the population within a given country. A TFR above or below this population replacement rate is likely to lead to population growth or population decline, respectively. Across almost all of the OECD countries, current fertility rates are well below those needed for population replacement. In most OECD countries, the total fertility rate sits at somewhere between 1.3 and 1.9 children per woman. Contrary to what prevalent literature states as reported in the first chapter, the results of the regression between childlessness and fertility show no correlation. Or better, they show a negative correlation but the test is not sufficiently significant since the p-value=0,43 and the regression coefficient= -2,12. Maybe because there are some characteristics that not every country considered here have; so, an analysis for more homogenous sub-groups could turn this correlation into significant, but I leave this more detailed work to the future research.

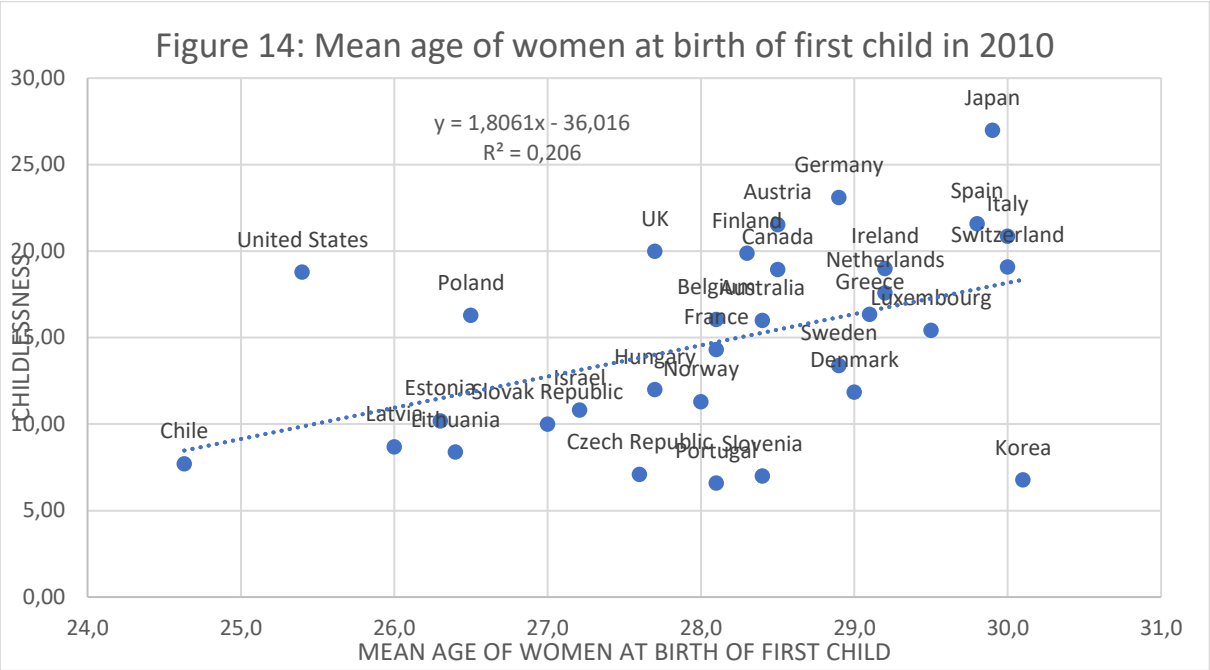


3.2.2 Mean age of women at childbirth and at birth of first child

This indicator contains information on the mean age of mothers at childbirth. It is computed as the simple mean average age in years of women at childbirth. In most OECD countries, the average age at which women give birth stands at about 30. We can see that Mexico has the lowest mean age and one of the lowest levels of childlessness at the same time. On the other side Japan has the highest level of childlessness and also one of the highest levels of mean age at childbirth for women, followed by Italy, Spain and Switzerland. The results of the regression I conducted confirm what expected from the prevalent literature: there is a positive correlation between the childlessness and mean age of women at childbirth, with a regression coefficient=2,42 and the test is also highly significant, with a p-value=0,003.



Considering another but correlated variable, the mean age of women at birth of first child, again we have the confirmation of a strong correlation between childlessness and the age of entry into motherhood (Fig. 14). The regression analysis shows a positive correlation with a regression coefficient= 1,8 and a highly significant test with a p-value= 0,009. Again, Japan, Italy and Spain are the nations with the highest values in both childlessness and mean age of women at birth of first child. While, the lowest values belong no more to Mexico, because data were not available for 2010, but to another Latin American countries, that is Chile.



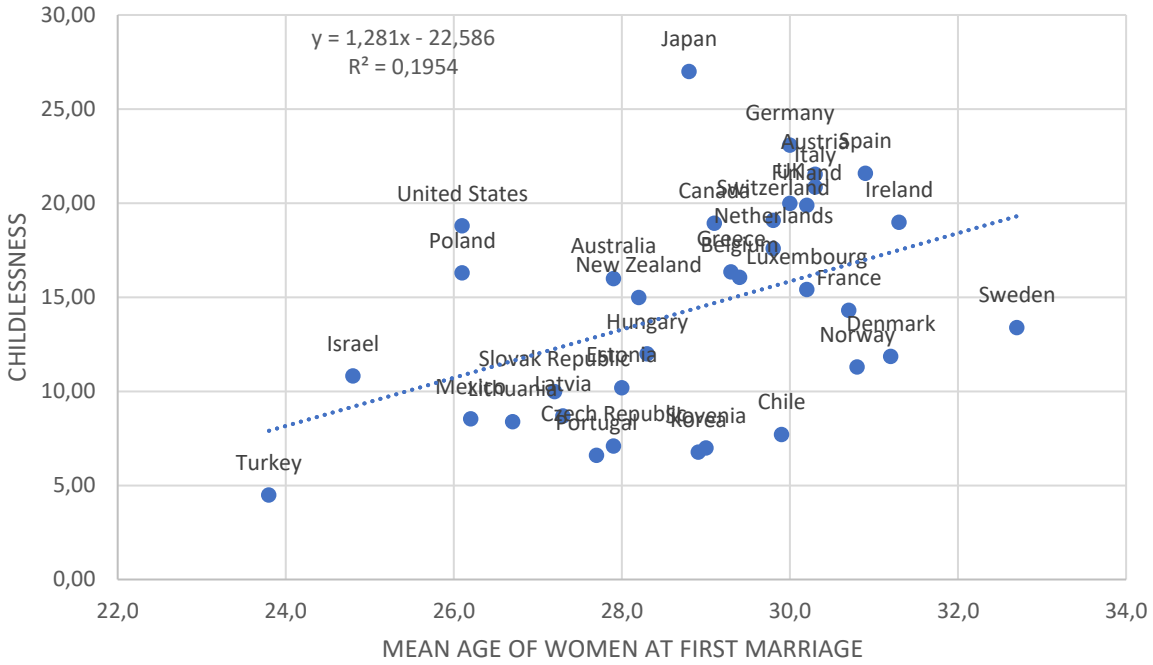
3.2.3 Mean age of women at first marriage

The mean age of women at first marriage is defined as the mean age in years of women marrying persons at the time of marriage. Despite common historical trends, there remain notable differences across countries in the ages of women at first marriage. The mean age of women at first marriage is very high in the Mediterranean and Nordic countries, for example, especially in Spain and Sweden, where the mean age is almost 35 years old. In Israel and in Turkey, by contrast, the average age at first marriage for women is about 25.

At the start of the 1990s, in most OECD countries, the mean age of women at first marriage stood at somewhere between 22 and 27, and the mean age of men at first marriage between 24 and 30. By 2020, these averages had increased for almost all OECD countries to somewhere between 27 and 33 for women and 29 and 35 for men. On average across OECD countries, the mean age at which women first get married is now 30.7, and the mean age for men 33.1. Differences between countries point to a variety of transition paths towards the formation of long-term partnerships: cohabitation has become an important form of long-term partnership in, for example, the Nordic countries, postponing and frequently replacing marriage as the partnership standard.

Results from my regression analysis state that there is a positive correlation between childlessness and mean age of women at first marriage, with a regression coefficient= 1,28 and the test is also highly significant, with a p-value= 0,007.

Figure 15: Childlessness and mean age of women at first marriage



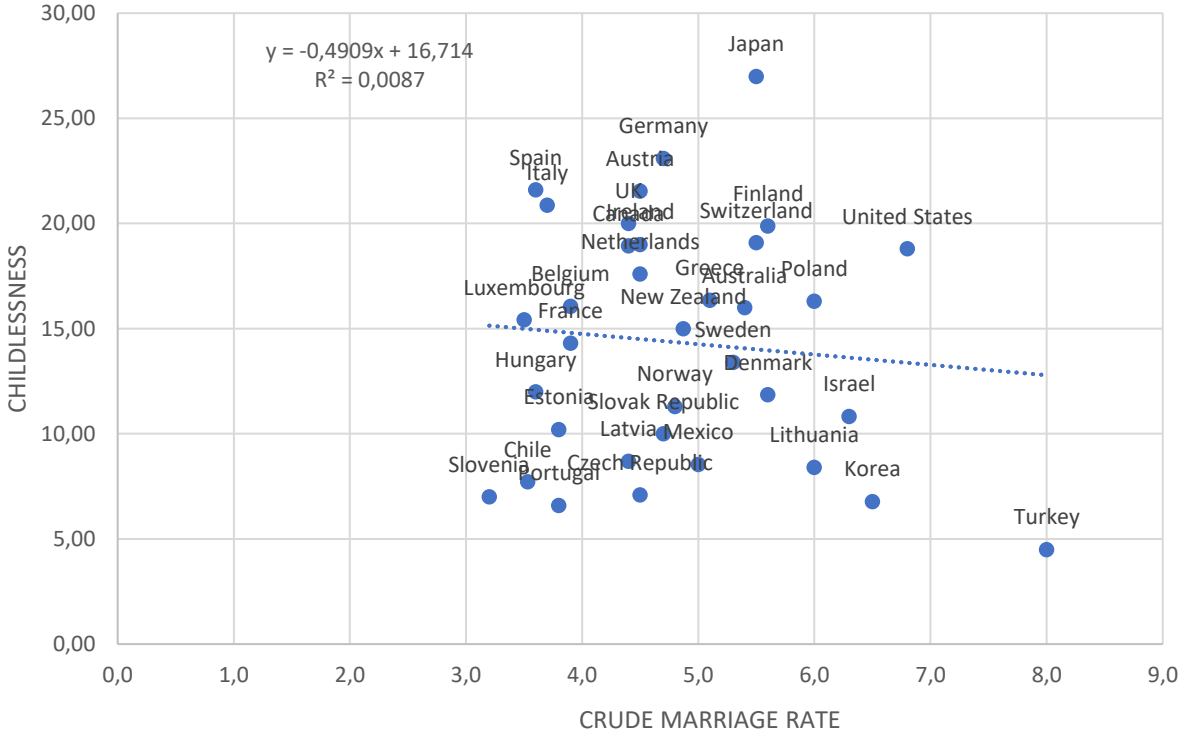
3.2.4 Crude marriage rate

The crude marriage rate (CMR) is defined as the number of marriages during a given year per 1000 people. Marriage rates differ considerably across OECD countries. In some countries (including Ireland, Italy, Portugal and Spain) crude marriage rates are very low, at fewer than 2 marriages per 1000 people. In others (such as Hungary, Latvia, Lithuania and Turkey), rates are almost three as high, at around 6 per 1000. In most OECD countries, the CMR is somewhere between 2.5 and 5 marriages per 1000, with the OECD average standing at 3.7. In almost all OECD countries, marriage rates have declined over the past few decades. In 1970, most OECD countries had CMRs of somewhere between 7 and 10 marriages per 1000 people. By 1995, in most OECD countries, CMRs had fallen to around 5 to 7 marriages per 1000 people, and in many countries they have continued to fall since. Across the OECD,

declining marriage rates have been accompanied by increases in the average age of those getting married.

Results from my regression analysis show that there is no correlation between childlessness and crude marriage rate (CMR), with a p-value= 0,59, differently from what seen in the precedent paragraph where the age of marriage influences childlessness. It possible that the intensity of nuptiality is losing its negative association with childlessness, as a growing proportion of individuals in partnership opts for a cohabitation, rather than a marriage.

Figure 16: Childlessness and crude marriage rate in 2010



3.2.5 Share of births outside the marriage

This indicator presents information on the proportion of births outside of marriage. Births outside of marriage are generally defined as births to mothers whose legal marital status at the time of the birth is other than married. This includes births to mothers who are single or who are cohabiting with a partner outside of marriage, births to mothers who are divorced or widowed, and births to mothers who are living with a partner in a common-law or de facto union. The share of births outside of marriage is calculated as the number of births to women whose legal marital status at the time of the birth is other than married divided by all births in the given year.

The proportion of children born outside of marriage has increased in almost all OECD countries in recent decades. In most OECD countries, the proportion of children born outside marriage has increased by at least 25 percentage points since 1970. On average across OECD countries, 42% of births occur outside of marriage, compared to the average of 7% in 1970. In 11 OECD countries (Belgium, Chile, Denmark, Estonia, France, Mexico, the Netherlands, Norway, Portugal, Slovenia, and Sweden) more than 50% of children are born outside of marriage, with rates particularly high in Mexico (70%) and Chile (75%). In four other OECD countries (Israel, Japan, Korea and Turkey), by contrast, less than 10% of children are born outside of marriage. In Japan, Korea and Turkey, the rate is as low as around 2-3%. In fact, for this variable I will show you two graphs, one with all the OECD countries and one with all the OECD countries except of Korea and Turkey. In the first one there is no correlation with childlessness, while in the second there is a negative and even strong correlation. This is because Korea and Turkey, being outliers, have so low values that can overturn the correlation from significant to not significant. Results from my first regression show a regression coefficient= -0,06 and p-value= 0,29. While in the second regression the regression coefficient is -0,15 and a highly significant test, with a p-value= 0,007.

Figure 17: Childlessness and births outside marriage in 2010

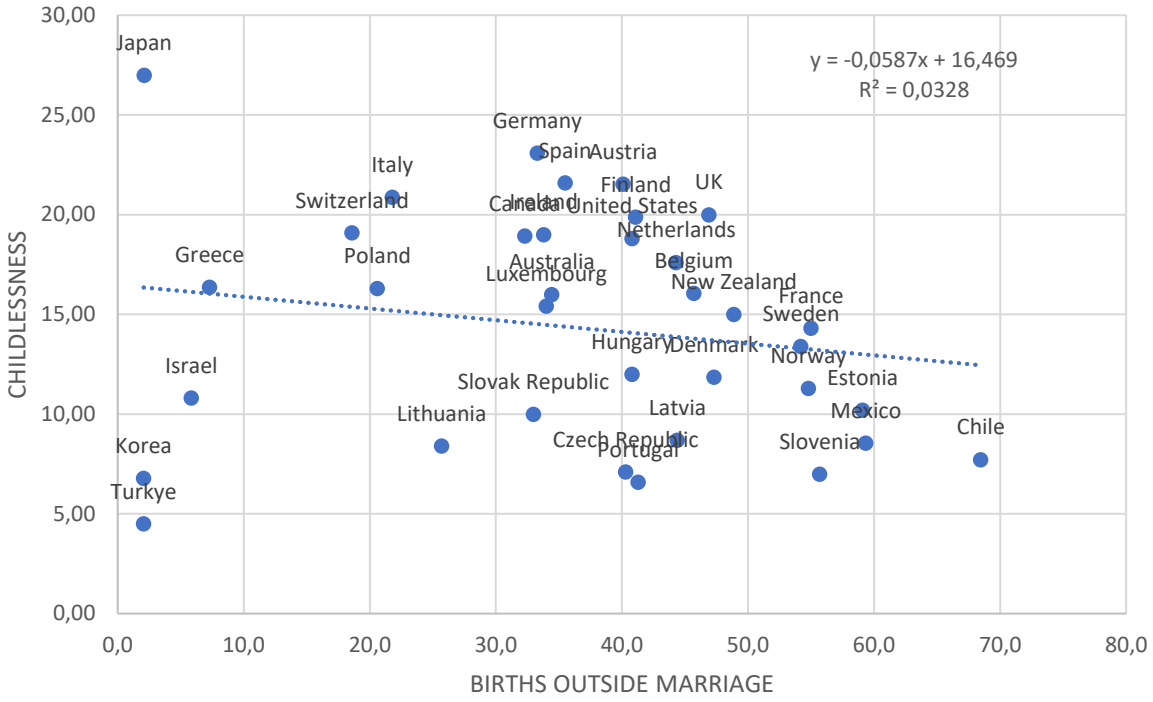
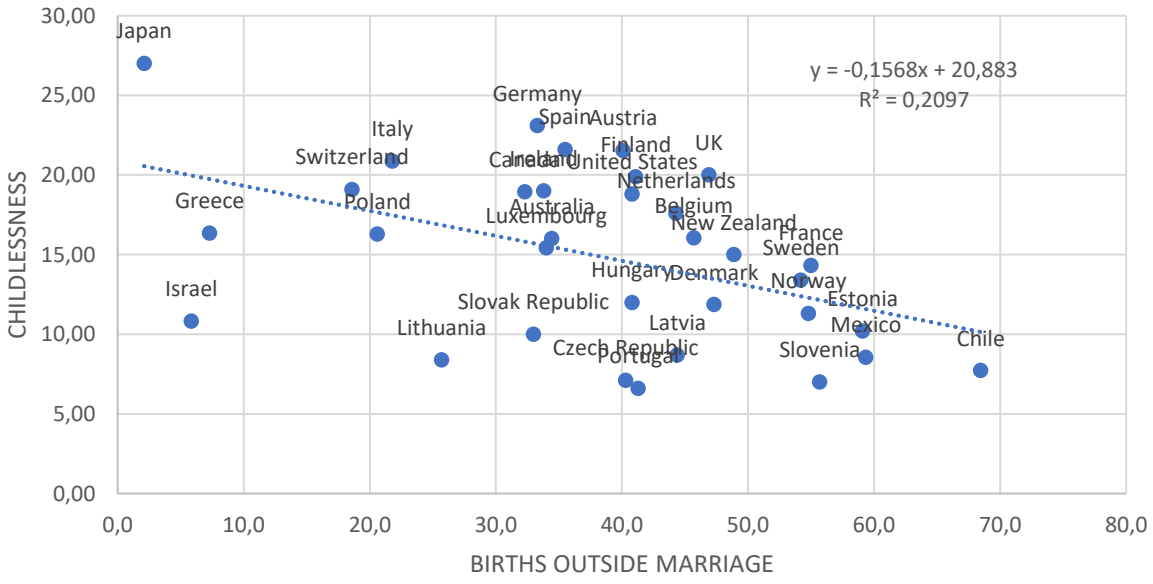


Figure 18: Childlessness and births outside marriage in 2010

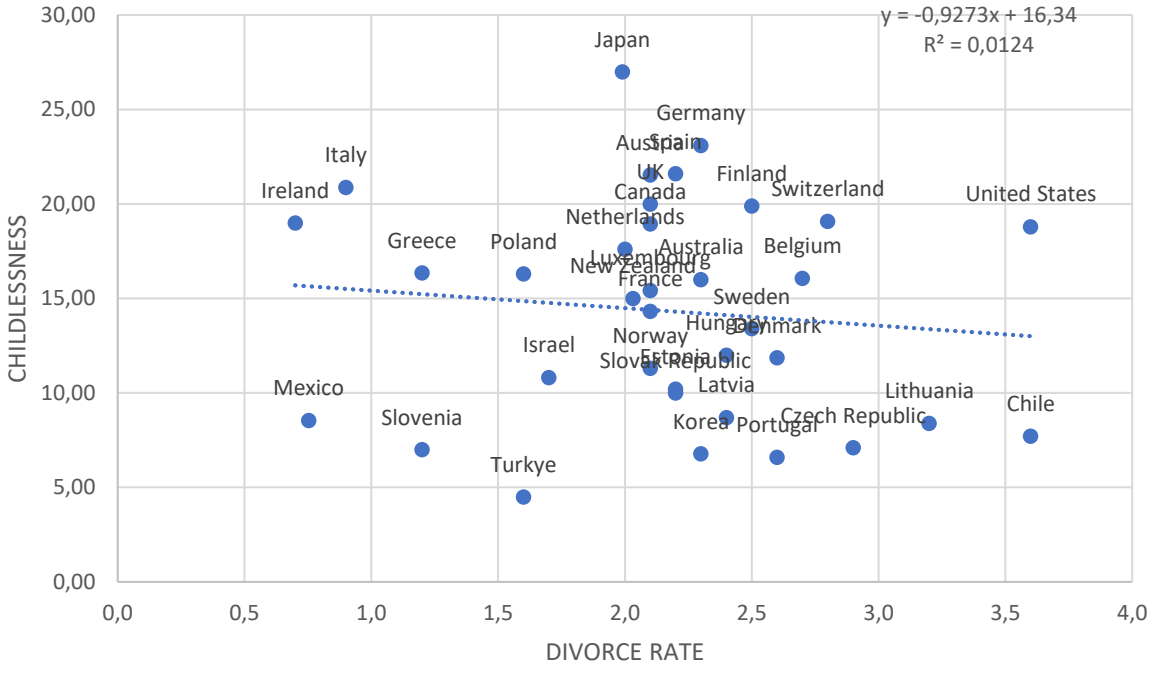


3.2.6 Divorce rate

The crude rate is defined as the number of divorces during a given year per 1000 people. In the past decades, declining rates of marriage have been accompanied by increases in rates of divorce. In comparison to 1970 for example, current divorce rates in most OECD countries are generally high. All except five OECD countries with available data (Estonia, Hungary, Latvia, Slovenia and the United States) have divorce rates that are higher now than they were in 1970, with many OECD countries (Belgium, Greece, Israel, Korea, Luxembourg, the Netherlands and Portugal) having seen their divorce rates more than double over the period.

However, as expected, divorce rate is not correlated with childlessness, in fact, my regression analysis shows that there is a regression coefficient= -0,92 and a not significant test, with a p-value= 0,52.

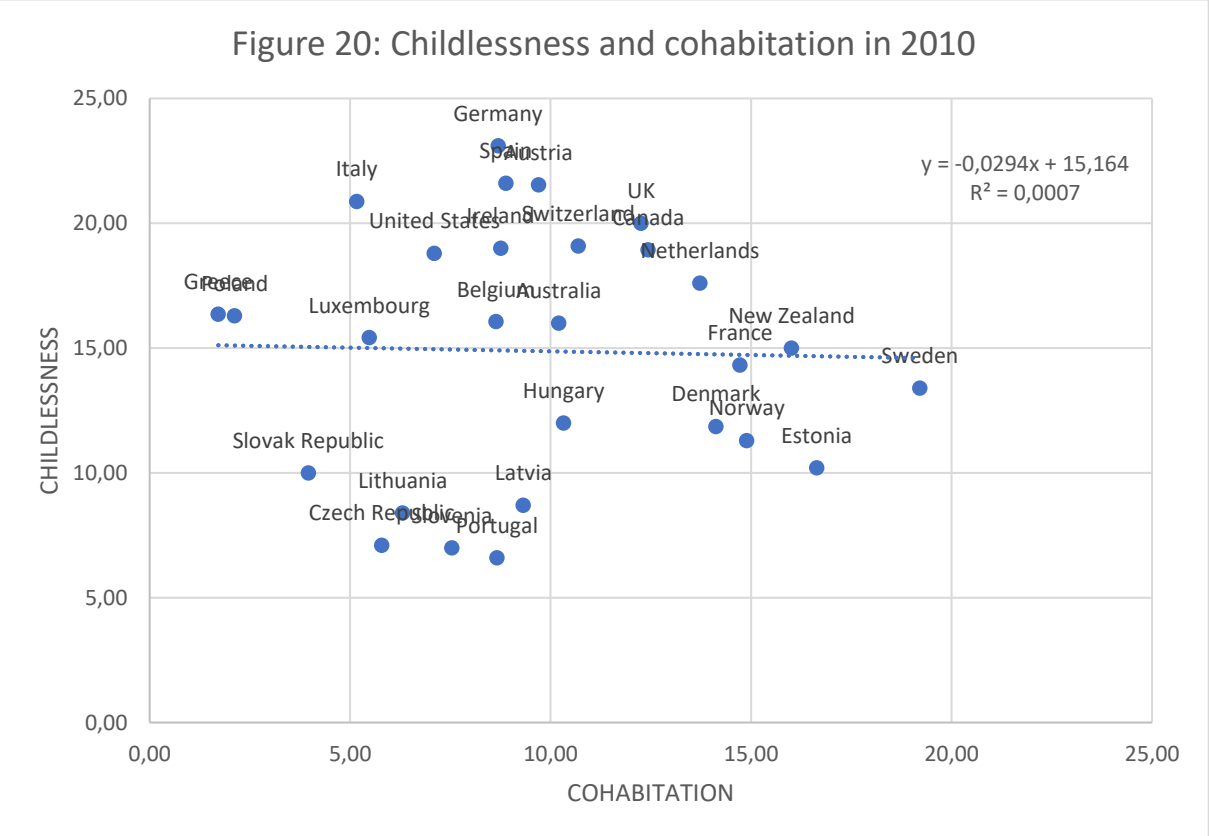
Figure 19: Childlessness and divorce rate in 2010



3.2.7 Cohabitation

Cohabitation refers to people living with a partner as a cohabiting couple, that is, people who are living with a partner in a consensual union but who are not legally married to the partner and are not in a registered partnership with the partner. On average across OECD countries around 60% of individuals aged 20 or older are living with partner. Most of them are married or in a civil or registered partnership, but a substantial proportion (almost 10%, on average across the OECD) are living as a part of a cohabiting couple. The proportion of people living in a cohabiting couple is largest at almost 20% in Sweden, but is also considerable (at around or above 15%) in Denmark, Estonia, France, New Zealand and Norway. Conversely, cohabiting is comparatively rare in several Southern and Eastern European OECD countries, particularly Poland and Greece where only around 2% of people aged 20 or older are living in a cohabiting couple.

However, I conducted the regression analysis between childlessness and cohabitation and no correlation was found. The regression coefficient is -0,03 and the p-value is 0,89, meaning that the test is not significant.



4. PUBLIC POLICIES AND INFLUENCE ON CHILDLESSNESS

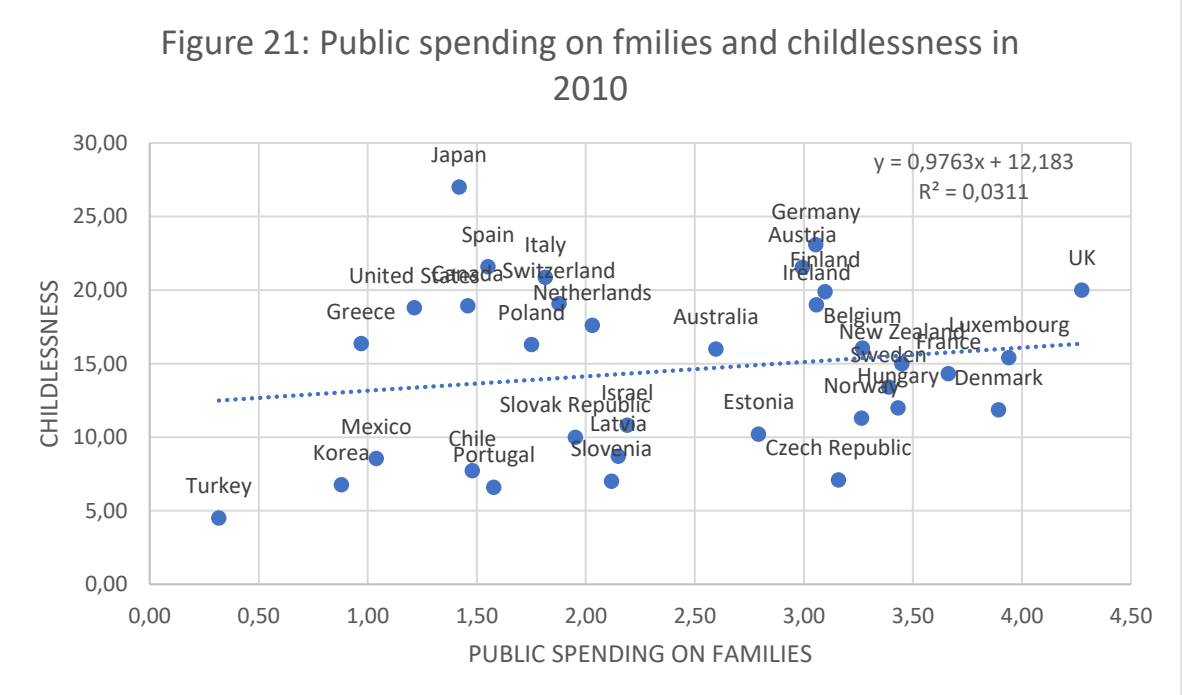
In this chapter we will analyze some public policies which could be correlated with childlessness. In this way we can then conclude if the phenomenon of childlessness is in some way controllable or influenceable through some public interventions, in order to try to limit this negative trend.

4.1 Public spending on families

Public spending on family benefits includes financial support that is exclusively for families and children. Spending recorded in other social policy areas such as health and housing may also assist families, but not exclusively, and is not included here.

OECD countries spend on average 2.34% of GDP on family benefits, with large variations across countries. While public spending on family benefits is close to 3.5% of GDP in Denmark, France, Hungary, and Sweden, it is much lower at below 1.5% of GDP in Korea, Mexico, Spain, Turkey and the United States.

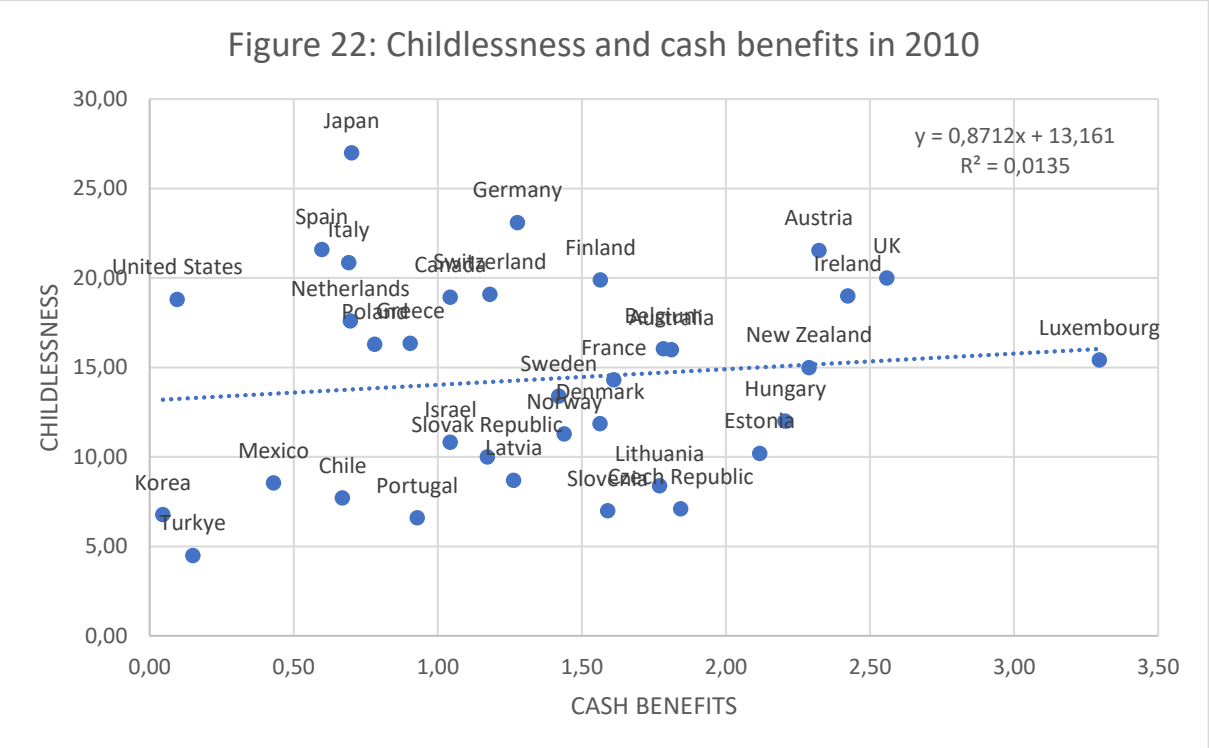
The linear regression between public spending on families and childlessness reveal no correlation between these two variables, since the p-value=0,31 and the regression coefficient= 0,97 (Fig.21).



4.2 Cash benefits

Family cash benefits are defined here as family-related transfers to families, often taking the form of child benefits, family allowances or family-related refundable/non-wastable tax credits. These benefits can be universal or means-tested (i.e. with eligibility and/or payment levels conditional on income and/or assets). Payment levels frequently vary with child age and family size. Some countries also provide benefits targeted at specific groups or for specific purposes based on family characteristics, child characteristics, and/or the parents' labour market situation. All the countries provide at least one type of family benefit, with a majority (30 countries) offering at least two or more. The next most common type of family cash benefits are benefits conditional on family characteristics. 21 OECD countries provide single parent benefits or equivalent. Nine countries (Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Norway, the Slovak Republic and Sweden) also offer some type of alimony advance, often (but not always) conditional on the absent parent not paying child support. Lastly, some OECD countries also offer family benefits conditional on the labour market situation of the parents, usually the form of a working family tax credit or a childcare allowance.

Results from my regression analysis between childlessness and cash benefits state that there is no correlation between them, confirming the general trend of the precedent paragraph where total public spending on families were considered (Fig. 22) Here the p-value=0,5 and the regression coefficient=0,87.



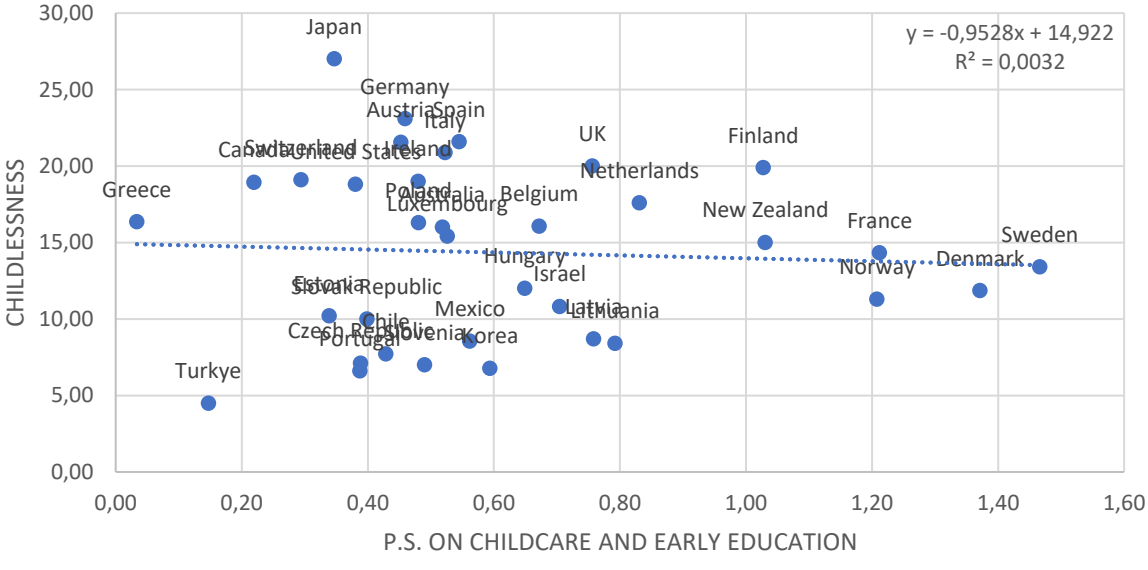
4.3 Public spending on childcare and early education

Public expenditure on early childhood education and care covers all public spending (in cash or in-kind) towards formal day-care services (e.g. crèches, day care centres, and family day care, generally aimed at children aged 0 to 2, inclusive) and pre-primary education services (including kindergartens and day-care centres which usually provide an educational content as well as traditional care for children aged from 3 to 5, inclusive). Public expenditure on early childhood education and care is presented here as a % of GDP.

OECD countries spend on average just over 0.7% of GDP on early childhood education and care, with large variations across countries. While public expenditure on early childhood education and care is higher than 1.0% of GDP in France and the Nordic countries – with total spending reaching as high as 1.6% in Sweden – it is less than 0.5% of GDP in the Czech Republic, Colombia, Ireland, Portugal, Turkey and the United States.

Also the public intervention has no determinant power on childless. In fact, the regression analysis between public spending on childcare and early education show no correlation, with a p-value=0,74 and a regression coefficient=-0,95.

Figure 23: Childlessness and public spending on childcare and early education in 2010



4.4 Lenght of parental and home care leave for mothers

Maternal leave is an employment-protected leave of absence for employed women directly around the time of childbirth. The ILO convention on maternity leave stipulates the period of leave should be at least 14 weeks. In most countries, beneficiaries may combine pre- with post-birth leave; in some countries, a short period of pre-birth leave is compulsory, as is a period following birth. Almost all OECD countries have public income support payments tied to maternity leave. Home care leaves are employment-protected leaves of absence that sometimes follow parental leave and that typically allow at least one parent to remain at home to provide care until the child is two or three years of age. Home care leaves are less common than the other type of leave and are offered only in a minority of OECD countries. They are also often unpaid. Where a benefit is available, home care leaves tend to be paid only at a low flat-rate. What we are considering here is the parental and home care leave available to mothers, that is the result of the union of the first two indicators. In fact, it covers all weeks of employment-protected parental and home care leave that can be used by the mother. This includes any weeks that are an individual entitlement or that are reserved for the mother, and those that are a sharable or family entitlement. It excludes any weeks of parental leave that are reserved for the exclusive use of the father.

As we can see in the first figure it seems to be no significant correlation between this indicator and childlessness. In fact, the p-value= 0,37 and regression coefficient= -0,02. But if we remove from this analysis Japan, Turkye and Finland, which present some abnormal characteristics with respect to OECD trend, we obtain a significant negative correlation. In the second figure we can notice the sharper regression line going from up to down, with a p-value=0,05 and a regression coefficient= -0,019.

Figure 24: Childlessness and maternal leave in 2010

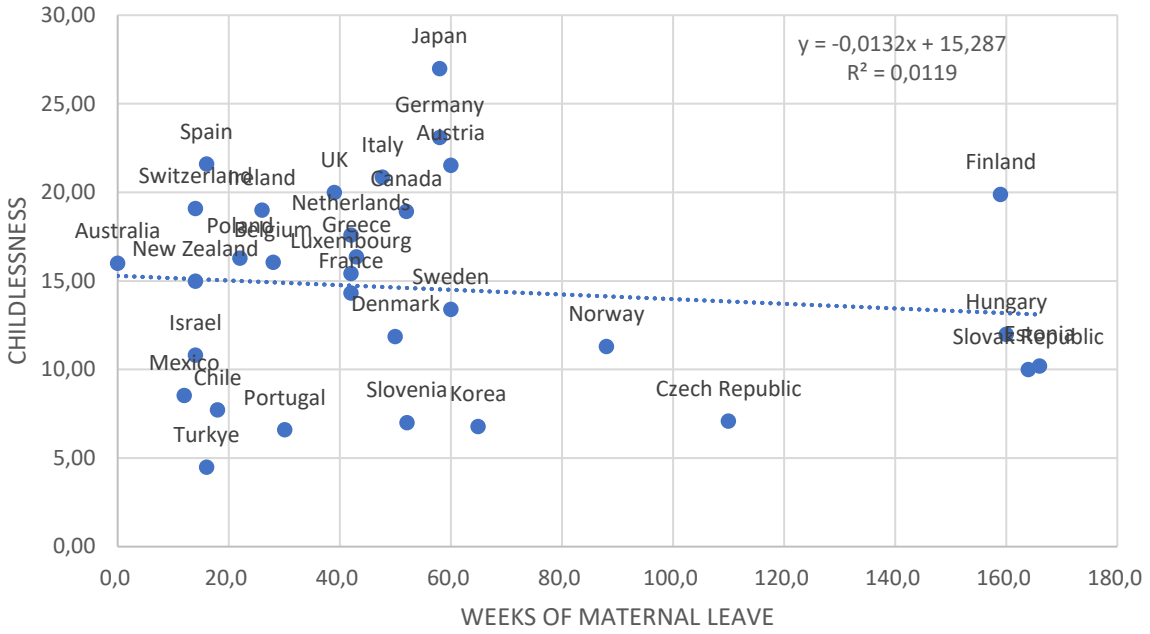
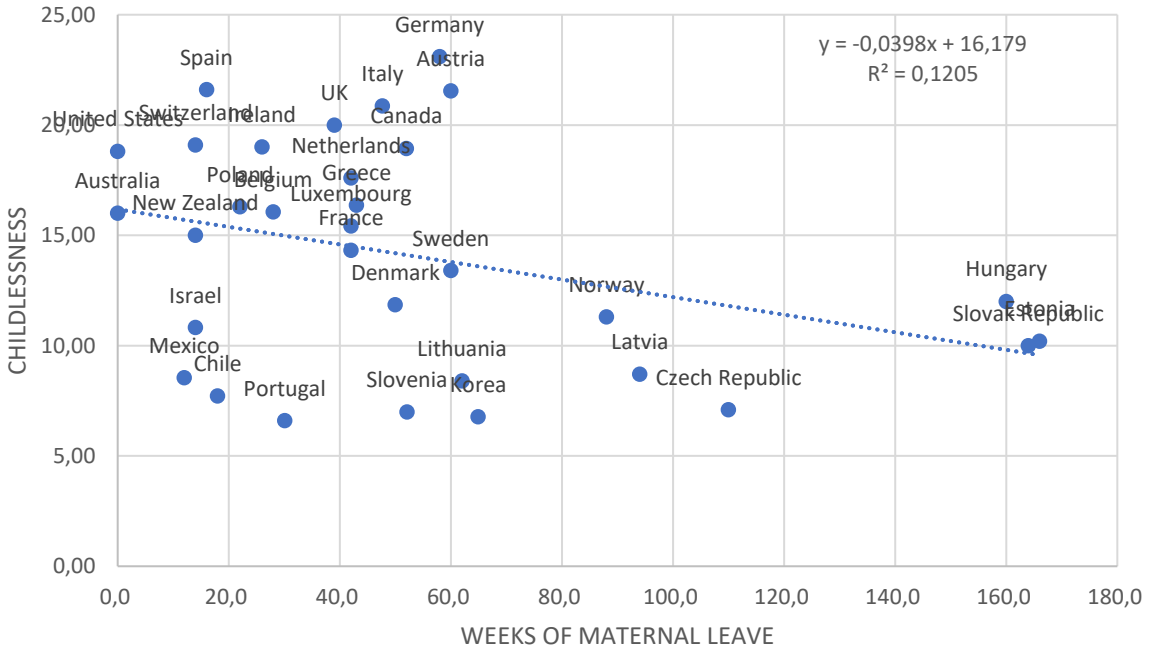


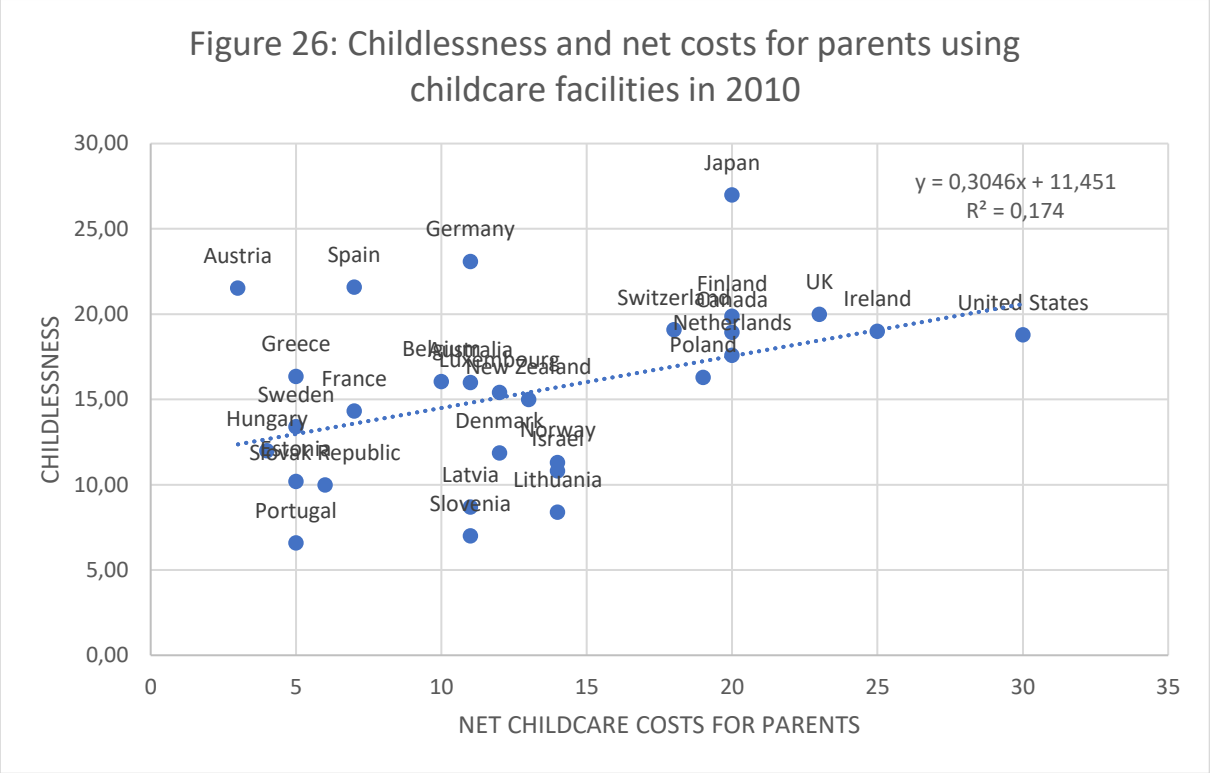
Figure 25: Childlessness and weeks of maternal leave in 2010



4.5 Net childcare costs for parents

This indicator measures the net costs paid by parents for full-time centre-based childcare, after any benefits designed to reduce the gross childcare fees. Childcare benefits can be received in the form of childcare allowances, tax concessions, fee rebates and increases in other benefit entitlements. It is found that the countries with the lowest costs to raise a child are the Eastern Europe countries (Latvia, Lithuania, Slovenia) and Portugal. While the highest costs are found in nations such as Japan, Germany, Spain and Austria.

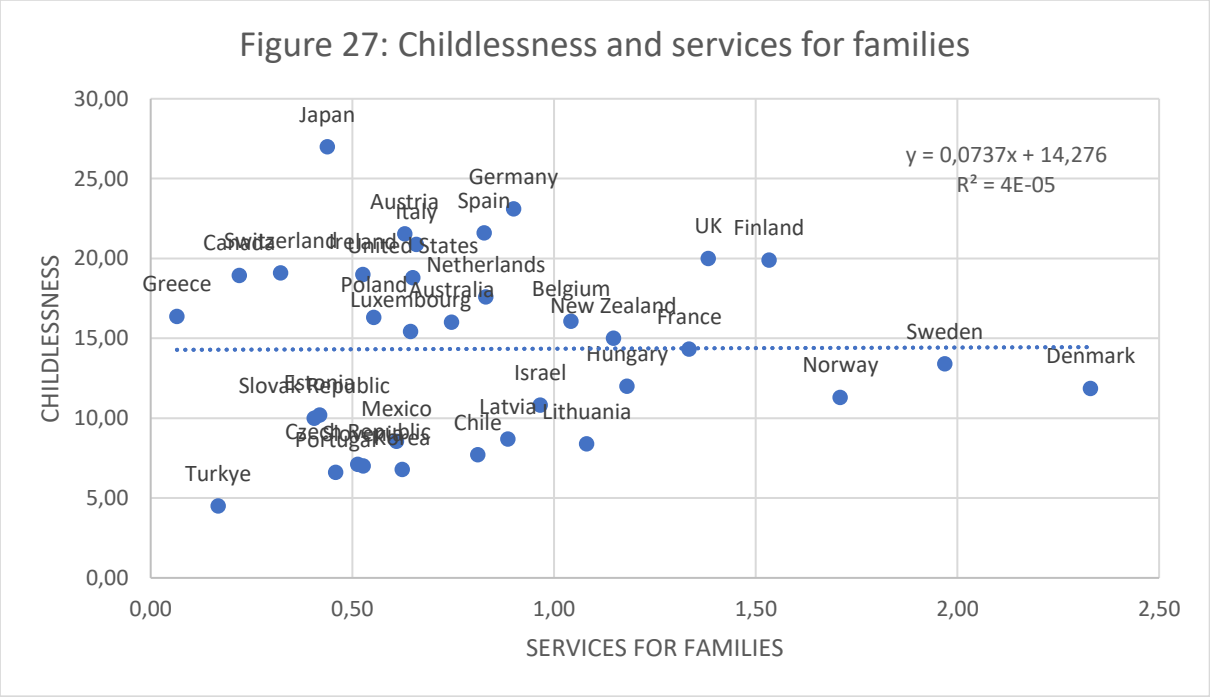
The results from my regression analysis say that there is a significant positive correlation between this indicator and childlessness, and this confirm what the prevalent literature states. In fact, the more the costs of childcare for parents increase, the more childlessness increases too. The linear regression shows a p-value= 0,02 and a regression coefficient= 0,3.



4.6 Services for families

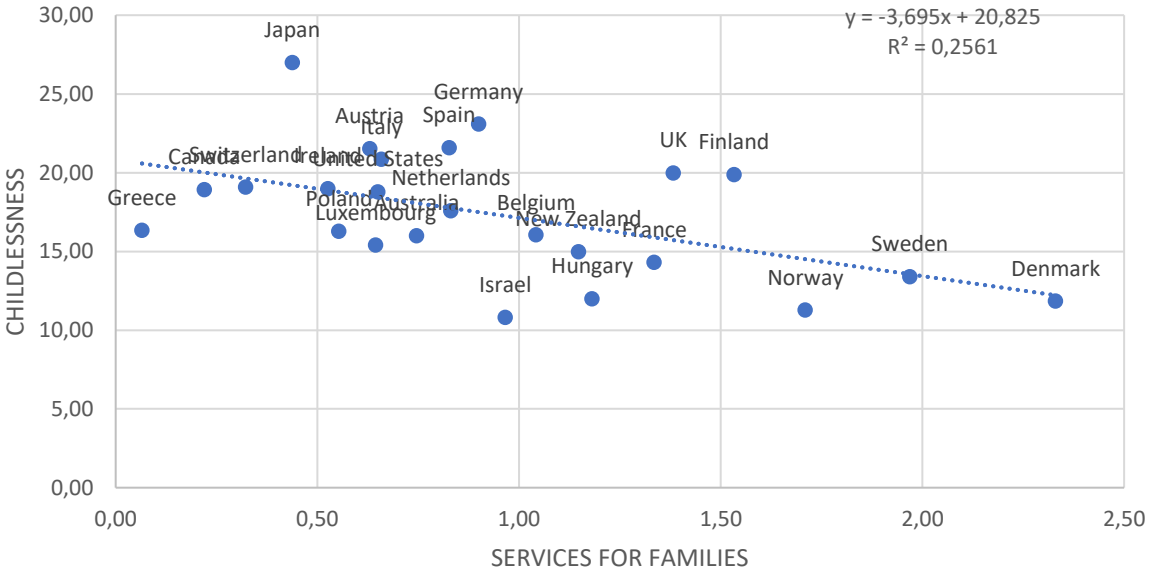
Services for families are intented as public spending on services for families with children, which includes the direct financing or subsidisation of childcare and early childhood education facilities, public childcare support through earmarked payments to parents, public spending on assistance for young people and residential facilities, and public spending on family services, including centre-based facilities and home help services for families in need.

What I found in this analysis is very interesting, because I first considered all the OECD countries and there was absolutely no correlation with childlessness, with a p-value=0,97 and a regression coefficient=0,07 (Fig. 27).



But after having removed from the general group od OECD countries all those countries having in common lower GDP's and lower levels of childlessness (Latvia, Lithuania, Czech Republic, Slovenia, Mexico, Turkye, Chile, Slovak Republic, Estonia) with respect to the rest of the group, I obtained very different results: childlessness and services for families are negatively correlated and the regression analyses is highly significant, with a p-value=0,01 and a regression coefficient=-3,69.

Figure 28: Childlessness and services for families



CONCLUSIONS

This thesis has studied the phenomenon of childlessness and its determinants at macro-level in the OECD countries, but those countries do not have all the same characteristics and similarities. In fact, there is at least one sub-group characterized by less advanced (economically and socially speaking) countries in comparison to the others, with lower levels of GDP's, which systematically present lower levels of childlessness than more advanced countries, regardless of any variable. So, it will be needed further research on more homogeneous sub-groups to better understand the dynamic of childlessness and its determinants.

Summarizing what we have seen until now we can say that the determinants that that have a significant influence on childlessness are: women with tertiary education and female employment rate. The variables which have a highly significant influence on childlessness are: gender pay gap, mean age of women at childbirth and birth of first child, mean age of women at first marriage, births outside marriage. The extremely significant variables are: part-time female employment rate (taken as a proxy of women's weak position on the labour market), life expectancy. Looking at results we can say that these determinants, especially the second and the third group, should be taken as a lever to try in some way to stop or at least decelerate the phenomenon of childlessness, and all the consequences which derive from it. Measure to accelerate the transition to adulthood of young people and to consolidate women's position in the labour market could help to reduce childlessness levels, according to our findings.

Some public policies seem to be already effective and, as shown in the last chapter, are: lenght of parental and home care leave for mothers, net childcare costs for parents, services for families. Interestingly, public spending regarding services for families has a strong correlation with childlessness, but it weakens and loses significance when considering cash benefits and tax breaks too.

This piece of research suggests interesting associations at macro level, but we I am aware that the results of my analysis could suffer from ecological fallacy, since we cannot assume that what is true for a population is true also for the individual members of that population, therefore the relationship under focus should be studied also from a micro or a multilevel perspective.

In this work I take into consideration several dimensions that could be linked to childlessness, however I consider them one at once. A further development of my research would be to analyse all the different determinant conjointly in a linear multiple regression analysis, in order to assess the effect of each dimension net to the other correlates.

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APPENDIX

Table 1: Total fertility rate, 1970, 1995 and 2020

	1970	1995	2020 (↗)
Korea	4,53	1,63	0,84
Italy	2,43	1,19	1,24
Greece	2,40	1,28	1,28
Cyprus		2,03	1,31
Japan	2,13	1,42	1,33
Spain	2,90	1,17	1,36
Luxembourg	1,98	1,67	1,37
Finland	1,83	1,81	1,37
Poland	2,20	1,55	1,38
Portugal	2,83	1,41	1,40
Croatia	1,83	1,50	1,42
Austria	2,29	1,42	1,44
Switzerland	2,10	1,48	1,46
Malta		1,82	1,48
Norway	2,50	1,87	1,48
Canada	2,33	1,62	1,50
Hungary	1,97	1,57	1,52
EU-27 average	**2,37**	**1,51**	**1,53**
Germany	2,03	1,25	1,53
Slovak Republic	2,40	1,52	1,53
Netherlands	2,57	1,53	1,55
United Kingdom	2,43	1,71	1,56
Australia	2,86	1,82	1,58
Estonia	2,17	1,38	1,58
Bulgaria	2,17	1,23	1,59
OECD average	**2,84**	**1,77**	**1,59**
Slovenia	2,21	1,29	1,60
New Zealand	3,17	1,98	1,61
Chile	3,78	2,37	1,61
Ireland	3,87	1,85	1,63
Romania		1,33	1,64
United States	2,48	1,98	1,64
Sweden	1,94	1,74	1,66
Denmark	1,95	1,81	1,67
Lithuania	2,40	1,55	1,69
China	5,73	1,66	1,70

Brazil	4,97	2,59	1,71
Czech Republic	1,91	1,28	1,71
Belgium	2,25	1,55	1,72
Iceland	2,81	2,08	1,72
Costa Rica	4,60	2,85	1,72
Latvia	2,02	1,26	1,74
Turkey	5,00	2,75	1,76
Colombia	5,28	2,86	1,77
France	2,48	1,71	1,79
Russian Fed.	1,99	1,34	1,83
Mexico	6,83	3,02	2,08
India	5,59	3,65	2,18
Peru	6,32	3,32	2,21
Argentina	3,08	2,77	2,23
Saudi Arabia	7,28	4,98	2,24
Indonesia	5,47	2,69	2,27
South Africa	5,67	3,14	2,36
Israel	3,97	2,88	2,90

Source: OECD family database

Table 2: Childless women at age 40-44, mid-1990s and 2010 (or latest available year)

	mid-1990s		2010 (or latest year)	
	%	Reference year	%	Reference year
Australia	12,80	1996	16,00	2011
Austria	7,60	1996	21,54	2010
Belgium	..	..	..	..
Canada	15,90	1991	18,94	2007
Chile	7,90	1992	7,72	2002
Czech Republic	4,90	1997	7,10	2011
Denmark	..	..	..	..
Estonia	9,40	1989	10,20	2011
Finland	14,60	1990	19,89	2010
France	7,70	1994	..	..
Germany	..	..	..	..
Greece	..	..	..	..
Hungary	8,50	1990	12,00	2011
Iceland	..	..	..	..
Ireland	..	..	19,00	2011
Israel	..	..	10,82	2008
Italy	10,50	1996	..	..
Japan	..	..	..	..
Korea	3,60	1990	6,78	2005
Luxembourg	19,00	1991	15,42	2001
Mexico	7,00	1990	8,55	2010
Netherlands	15,00	1993	..	..
New Zealand	11,90	1996	15,00	2006
Norway	..	..	..	..
Poland	6,10	1991	..	..
Portugal	8,10	1997	..	..
Slovak Republic	..	..	10,00	2011
Slovenia	9,40	1991	7,00	2002
Spain	..	..	21,60	2011
Sweden	..	..	13,40	2010
Switzerland	20,40	1995	..	..
Turkey	5,40	1990	4,50	2008
UK (England and Wales)	14,00	1995	20,00	2010
United States	17,50	1995	18,80	2010
Bulgaria	8,20	1998	11,70	2011
Croatia	9,40	1991	9,40	2001
Cyprus				
Latvia	6,90	1995	8,70	2000
Lithuania	12,20	1995	8,40	2011
Malta	14,10	1995	12,90	2010
Romania	9,70	1992	10,50	2002

Fonte:

Source: OECD family database

Table 3: Childlessness and women with tertiary-level education

COUNTRIES	WOMEN WITH TERTIARY EDUCATION	CHILDLESSNESS
Australia	49,7	16,00
Austria	36,6	21,54
Belgium	49,4	16,06
Canada	63,8	18,94
Czech Republic	25,4	7,10
Denmark	45	11,86
Estonia	48,3	10,20
Finland	47,8	19,89
France	47,3	14,32
Germany	27,5	23,1
Greece	36,1	16,36
Hungary	31,2	12,00
Ireland	54,7	19,00
Israel	52,6	10,82
Italy	25,1	20,87
Japan	59,9	27,00
Korea	65,8	6,78
Luxembourg	46	15,42
Mexico	18,1	8,55
Netherlands	44,1	17,60
Norway	55,8	11,30
Poland	44,7	16,30
Portugal	31,5	6,60
Slovak Republic	29,8	10,00
Slovenia	40,3	7,00
Spain	46,4	21,60
Sweden	48,9	13,40
Switzerland	35,8	19,09
Turkey	16,3	4,50
UK	48,1	20,00

United States	47,6	18,80
Latvia	45,6	8,70
Lithuania	54,8	8,40

Table 4: Childlessness and female employment rate in 2010

COUNTRIES	**FEMALE EMPLOYMENT RATE**	**CHILDLESSNESS**
Australia	66,1	16,00
Austria	65,7	21,54
Belgium	56,5	16,06
Canada	68,5	18,94
Chile	47,3	7,72
Czech Republic	56,3	7,10
Denmark	69,5	11,86
Estonia	62,1	10,20
Finland	65,8	19,89
France	60,8	14,32
Germany	65,3	23,1
Greece	47,4	16,36
Hungary	54,3	12,00
Ireland	57	19,00
Israel	56,9	10,82
Italy	45,9	20,87
Japan	60,2	27,00
Korea	52,7	6,78
Luxembourg	57,2	15,42
Mexico	43,2	8,55
Netherlands	70,1	17,60
New Zealand	66,4	15,00
Norway	73,3	11,30
Poland	51,1	16,30
Portugal	57,9	6,60

Slovak Republic	56	10,00
Slovenia	62	7,00
Spain	52,8	21,60
Sweden	69	13,40
Switzerland	71,3	19,09
Turkey	26,2	4,50
UK	65,5	20,00
United States	62,4	18,80
Latvia	58,8	8,70
Lithuania	58,5	8,40

Table 5: Childlessness and gender pay gap in 2010

COUNTRIES	**GENDER PAY GAP**	**CHILDLESSNESS**
Australia	14,0	16,00
Austria	19,2	21,54
Belgium	7,0	16,06
Canada	19,0	18,94
Chile	12,5	7,72
Czech Republic	15,8	7,10
Denmark	8,9	11,86
Estonia	27,8	10,20
Finland	18,9	19,89
France	9,1	14,32
Germany	16,7	23,1
Greece	9,9	16,36
Hungary	6,4	12,00
Ireland	14,3	19,00
Israel	20,4	10,82
Italy	5,6	20,87

Japan	28,7	27,00
Korea	39,6	6,78
Luxembourg	4,6	15,42
Mexico	11,6	8,55
Netherlands	17,9	17,60
New Zealand	7,0	15,00
Norway	7,2	11,30
Poland	7,2	16,30
Portugal	16,0	6,60
Slovak Republic	14,9	10,00
Slovenia	1,0	7,00
Spain	13,5	21,60
Sweden	9,4	13,40
Switzerland	20,1	19,09
Turkey	3,1	4,50
UK	19,2	20,00
United States	18,8	18,80
Latvia	19,1	8,70
Lithuania	10,6	8,40

Table 6: Childlessness and temporary female employment rate in 2010

COUNTRIES	**TEMPORARY FEMALE EMPLOYMENT RATE**	**CHILDLESSNESS**
Australia	38,6	16,00
Austria	33,0	21,54
Belgium	31,7	16,06
Canada	27,5	18,94
Chile	24,1	7,72
Czech Republic	7,0	7,10
Denmark	25,4	11,86

Estonia	11,7	10,20
Finland	16,0	19,89
France	22,5	14,32
Germany	38,2	23,1
Greece	14,5	16,36
Hungary	5,4	12,00
Ireland	38,2	19,00
Israel	23,3	10,82
Italy	31,0	20,87
Japan	33,9	27,00
Korea	15,5	6,78
Luxembourg	30,4	15,42
Mexico	28,1	8,55
Netherlands	60,6	17,60
New Zealand	33,7	15,00
Norway	30,2	11,30
Poland	13,1	16,30
Portugal	13,2	6,60
Slovak Republic	4,8	10,00
Slovenia	12,1	7,00
Spain	21,2	21,60
Sweden	19,4	13,40
Switzerland	46,1	19,09
Turkye	23,4	4,50
UK	39,3	20,00
United States	19,2	18,80
Latvia	10,0	8,70
Lithuania	8,5	8,40

Table 7: Childlessness and life expectancy at birth in 2010

COUNTRIES	LIFE EXPECTANCY AT BIRTH	CHILDLESSNESS
Australia	81,8	16,00
Austria	80,7	21,54
Belgium	80,3	16,06
Canada	81,1	18,94
Chile	78,8	7,72
Czech Republic	77,7	7,10
Denmark	79,3	11,86
Estonia	75,9	10,20
Finland	80,2	19,89
France	81,8	14,32
Germany	80,5	23,1
Greece	80,7	16,36
Hungary	74,7	12,00
Ireland	80,8	19,00
Israel	81,7	10,82
Italy	82,1	20,87
Japan	82,9	27,00
Korea	80,2	6,78
Luxembourg	80,7	15,42
Mexico	74,8	8,55
Netherlands	81,0	17,60
New Zealand	80,8	15,00
Norway	81,2	11,30
Poland	76,5	16,30
Portugal	80,0	6,60
Slovak Republic	75,6	10,00
Slovenia	79,8	7,00
Spain	82,4	21,60
Sweden	81,6	13,40
Switzerland	82,6	19,09
Turkye	74,3	4,50

UK	80,6	20,00
United States	78,6	18,80
Latvia	73,0	8,70
Lithuania	73,3	8,40

Table 8: Childlessness and Total Fertility Rate in 2010

COUNTRIES	**TFR**	**CHILDLESSNESS**
Australia	1,95	16,00
Austria	1,44	21,54
Belgium	1,84	16,06
Canada	1,63	18,94
Chile	1,88	7,72
Czech Republic	1,49	7,10
Denmark	1,87	11,86
Estonia	1,72	10,20
Finland	1,87	19,89
France	2,02	14,32
Germany	1,39	23,1
Greece	1,48	16,36
Hungary	1,26	12,00
Ireland	2,05	19,00
Israel	3,03	10,82
Italy	1,41	20,87
Japan	1,39	27,00
Korea	1,23	6,78
Luxembourg	1,63	15,42
Mexico	2,34	8,55
Netherlands	1,80	17,60
New Zealand	2,17	15,00
Norway	1,95	11,30
Poland	1,38	16,30
Portugal	1,39	6,60

Slovak Republic	1,40	10,00
Slovenia	1,57	7,00
Spain	1,37	21,60
Sweden	1,98	13,40
Switzerland	1,54	19,09
Turkey	2,08	4,50
UK	1,92	20,00
United States	1,93	18,80
Latvia	1,36	8,70
Lithuania	1,50	8,40

Table 9: Childlessness and mean age of women at childbirth

COUNTRIES	**MEAN AGE OF WOMEN AT CHILDBIRTH**	**CHILDLESSNESS**
Australia	30,0	16,00
Austria	29,8	21,54
Belgium	29,8	16,06
Canada	30,1	18,94
Chile	28,0	7,72
Czech Republic	29,6	7,10
Denmark	30,6	11,86
Estonia	29,2	10,20
Finland	30,2	19,89
France	30,0	14,32
Germany	30,4	23,1
Greece	30,4	16,36
Hungary	29,3	12,00
Ireland	31,4	19,00
Israel	30,0	10,82

Italy	31,3	20,87
Japan	31,2	27,00
Korea	31,3	6,78
Luxembourg	30,8	15,42
Mexico	26,7	8,55
Netherlands	30,8	17,60
New Zealand	29,6	15,00
Norway	30,1	11,30
Poland	28,8	16,30
Portugal	29,8	6,60
Slovak Republic	28,6	10,00
Slovenia	30,1	7,00
Spain	31,2	21,60
Sweden	30,7	13,40
Switzerland	31,2	19,09
Turkey	27,9	4,50
UK	29,5	20,00
United States	27,7	18,80
Latvia	28,6	8,70
Lithuania	28,9	8,40

Table 10: Childlessness and mean age of women at birth of first child

COUNTRIES	**MEAN AGE AT FIRST CHILD**	**CHILDLESSNESS**
Australia	28,4	16,00
Austria	28,5	21,54
Belgium	28,1	16,06
Canada	28,5	18,94
Chile	24,6	7,72

Czech Republic	27,6	7,10
Denmark	29,0	11,86
Estonia	26,3	10,20
Finland	28,3	19,89
France	28,1	14,32
Germany	28,9	23,1
Greece	29,1	16,36
Hungary	27,7	12,00
Ireland	29,2	19,00
Israel	27,2	10,82
Italy	30,0	20,87
Japan	29,9	27,00
Korea	30,1	6,78
Luxembourg	29,5	15,42
Netherlands	29,2	17,60
Norway	28,0	11,30
Poland	26,5	16,30
Portugal	28,1	6,60
Slovak Republic	27,0	10,00
Slovenia	28,4	7,00
Spain	29,8	21,60
Sweden	28,9	13,40
Switzerland	30,0	19,09
UK	27,7	20,00
United States	25,4	18,80
Latvia	26,0	8,70
Lithuania	26,4	8,40

Table 11: Childlessness and mean age of women at first marriage

COUNTRIES	MEAN AGE OF WOMEN AT FIRST MARRIAGE	CHILDLESSNESS
Australia	27,9	16,00
Austria	30,3	21,54
Belgium	29,4	16,06
Canada	29,1	18,94
Chile	29,9	7,72
Czech Republic	27,9	7,10
Denmark	31,2	11,86
Estonia	28,0	10,20
Finland	30,2	19,89
France	30,7	14,32
Germany	30,0	23,1
Greece	29,3	16,36
Hungary	28,3	12,00
Ireland	31,3	19,00
Israel	24,8	10,82
Italy	30,3	20,87
Japan	28,8	27,00
Korea	28,9	6,78
Luxembourg	30,2	15,42
Mexico	26,2	8,55
Netherlands	29,8	17,60
New Zealand	28,2	15,00
Norway	30,8	11,30
Poland	26,1	16,30
Portugal	27,7	6,60
Slovak Republic	27,2	10,00
Slovenia	29,0	7,00
Spain	30,9	21,60
Sweden	32,7	13,40
Switzerland	29,8	19,09
Turkey	23,8	4,50

UK	30,0	20,00
United States	26,1	18,80
Latvia	27,3	8,70
Lithuania	26,7	8,40

Table 12: Childlessness and crude marriage rate in 2010

COUNTRIES	**CRUDE MARRIAGE RATE**	**CHILDLESSNESS**
Australia	5,4	16,00
Austria	4,5	21,54
Belgium	3,9	16,06
Canada	4,4	18,94
Chile	3,5	7,72
Czech Republic	4,5	7,10
Denmark	5,6	11,86
Estonia	3,8	10,20
Finland	5,6	19,89
France	3,9	14,32
Germany	4,7	23,1
Greece	5,1	16,36
Hungary	3,6	12,00
Ireland	4,5	19,00
Israel	6,3	10,82
Italy	3,7	20,87
Japan	5,5	27,00
Korea	6,5	6,78
Luxembourg	3,5	15,42
Mexico	5,0	8,55
Netherlands	4,5	17,60
New Zealand	4,9	15,00

Norway	4,8	11,30
Poland	6,0	16,30
Portugal	3,8	6,60
Slovak Republic	4,7	10,00
Slovenia	3,2	7,00
Spain	3,6	21,60
Sweden	5,3	13,40
Switzerland	5,5	19,09
Turkey	8,0	4,50
UK	4,4	20,00
United States	6,8	18,80
Latvia	4,4	8,70
Lithuania	6,0	8,40

Table 13: Childlessness and births outside the marriage in 2010

COUNTRIES	**BIRTHS OUTSIDE MARRIAGE**	**CHILDLESSNESS**
Australia	34,4	16,00
Austria	40,1	21,54
Belgium	45,7	16,06
Canada	32,3	18,94
Chile	68,5	7,72
Czech Republic	40,3	7,10
Denmark	47,3	11,86
Estonia	59,1	10,20
Finland	41,1	19,89
France	55,0	14,32
Germany	33,3	23,1
Greece	7,3	16,36
Hungary	40,8	12,00

Ireland	33,8	19,00
Israel	5,8	10,82
Italy	21,8	20,87
Japan	2,1	27,00
Korea	2,1	6,78
Luxembourg	34,0	15,42
Mexico	59,4	8,55
Netherlands	44,3	17,60
New Zealand	48,9	15,00
Norway	54,8	11,30
Poland	20,6	16,30
Portugal	41,3	6,60
Slovak Republic	33,0	10,00
Slovenia	55,7	7,00
Spain	35,5	21,60
Sweden	54,2	13,40
Switzerland	18,6	19,09
Turkye	2,06	4,50
UK	46,9	20,00
United States	40,8	18,80
Latvia	44,4	8,70
Lithuania	25,7	8,40

Table 14: Childlessness and divorce rates in 2010

COUNTRIES	**DIVORCE RATE**	**CHILDLESSNESS**
Australia	2,3	16,00
Austria	2,1	21,54
Belgium	2,7	16,06
Canada	2,1	18,94

Chile	3,6	7,72
Czech Republic	2,9	7,10
Denmark	2,6	11,86
Estonia	2,2	10,20
Finland	2,5	19,89
France	2,1	14,32
Germany	2,3	23,1
Greece	1,2	16,36
Hungary	2,4	12,00
Ireland	0,7	19,00
Israel	1,7	10,82
Italy	0,9	20,87
Japan	2,0	27,00
Korea	2,3	6,78
Luxembourg	2,1	15,42
Mexico	0,8	8,55
Netherlands	2,0	17,60
New Zealand	2,0	15,00
Norway	2,1	11,30
Poland	1,6	16,30
Portugal	2,6	6,60
Slovak Republic	2,2	10,00
Slovenia	1,2	7,00
Spain	2,2	21,60
Sweden	2,5	13,40
Switzerland	2,8	19,09
Turkye	1,6	4,50
UK	2,1	20,00
United States	3,6	18,80
Latvia	2,4	8,70
Lithuania	3,2	8,40

Table 15: Childlessness and cohabitation in 2010

COUNTRIES	COHABITATION	CHILDLESSNESS
Australia	10,20	16,00
Austria	9,70	21,54
Belgium	8,64	16,06
Canada	12,43	18,94
Czech Republic	5,79	7,10
Denmark	14,12	11,86
Estonia	16,64	10,20
France	14,72	14,32
Germany	8,69	23,1
Greece	1,71	16,36
Hungary	10,32	12,00
Ireland	8,75	19,00
Italy	5,17	20,87
Luxembourg	5,48	15,42
Netherlands	13,72	17,60
New Zealand	16,01	15,00
Norway	14,89	11,30
Poland	2,12	16,30
Portugal	8,66	6,60
-Slovak Republic	3,96	10,00
Slovenia	7,54	7,00
Spain	8,88	21,60
Sweden	19,21	13,40
Switzerland	10,69	19,09
UK	12,26	20,00
United States	7,10	18,80
Latvia	9,32	8,70
Lithuania	6,31	8,40

Table16: Childlessness and public spending on families in 2010

COUNTRIES	PUBLIC SPENDING ON FAMILIES	CHILDLESSNESS
Australia	2,60	16,00
Austria	2,99	21,54
Belgium	3,27	16,06
Canada	1,46	18,94
Chile	1,48	7,72
Czech Republic	3,16	7,10
Denmark	3,89	11,86
Estonia	2,79	10,20
Finland	3,10	19,89
France	3,66	14,32
Germany	3,06	23,1
Greece	0,97	16,36
Hungary	3,43	12,00
Ireland	3,06	19,00
Israel	2,19	10,82
Italy	1,81	20,87
Japan	1,42	27,00
Korea	0,88	6,78
Luxembourg	3,94	15,42
Mexico	1,04	8,55
Netherlands	2,03	17,60
New Zealand	3,45	15,00
Norway	3,26	11,30
Poland	1,75	16,30
Portugal	1,58	6,60
Slovak Republic	1,95	10,00
Slovenia	2,12	7,00

Spain	1,55	21,60
Sweden	3,39	13,40
Switzerland	1,88	19,09
Turkey	0,32	4,50
UK	4,27	20,00
United States	1,21	18,80
Latvia	2,15	8,70

Table 17: Cash benefits and childlessness in 2010

COUNTRIES	**CASH BENEFITS**	**CHILDLESSNESS**
Australia	1,81	16,00
Austria	2,32	21,54
Belgium	1,78	16,06
Canada	1,04	18,94
Chile	0,67	7,72
Czech Republic	1,84	7,10
Denmark	1,56	11,86
Estonia	2,12	10,20
Finland	1,56	19,89
France	1,61	14,32
Germany	1,28	23,1
Greece	0,90	16,36
Hungary	2,21	12,00
Ireland	2,42	19,00
Israel	1,04	10,82

Italy	0,69	20,87
Japan	0,70	27,00
Korea	0,05	6,78
Luxembourg	3,30	15,42
Mexico	0,43	8,55
Netherlands	0,70	17,60
New Zealand	2,29	15,00
Norway	1,44	11,30
Poland	0,78	16,30
Portugal	0,93	6,60
Slovak Republic	1,17	10,00
Slovenia	1,59	7,00
Spain	0,60	21,60
Sweden	1,42	13,40
Switzerland	1,18	19,09
Turkye	0,15	4,50
UK	2,56	20,00
United States	0,10	18,80
Latvia	1,26	8,70
Lithuania	1,77	8,40

Table 18: Childlessness and public spending on childcare and early eductaion in 2010

COUNTRIES	**P.S. ON CHILDCARE AND EDUCATION**	**CHILDLESSNESS**
Australia	0,52	16,00
Austria	0,45	21,54
Belgium	0,67	16,06
Canada	0,22	18,94
Chile	0,43	7,72
Czech Republic	0,39	7,10

Denmark	1,37	11,86
Estonia	0,34	10,20
Finland	1,03	19,89
France	1,21	14,32
Germany	0,46	23,1
Greece	0,03	16,36
Hungary	0,65	12,00
Ireland	0,48	19,00
Israel	0,70	10,82
Italy	0,52	20,87
Japan	0,35	27,00
Korea	0,59	6,78
Luxembourg	0,53	15,42
Mexico	0,56	8,55
Netherlands	0,83	17,60
New Zealand	1,03	15,00
Norway	1,21	11,30
Poland	0,48	16,30
Portugal	0,39	6,60
Slovak Republic	0,40	10,00
Slovenia	0,49	7,00
Spain	0,54	21,60
Sweden	1,47	13,40
Switzerland	0,29	19,09
Turkye	0,15	4,50
UK	0,76	20,00
United States	0,38	18,80
Latvia	0,76	8,70
Lithuania	0,79	8,40

Table 19: Childlessness and weeks of maternal leave in 2010

COUNTRIES	MATERNAL LEAVE	CHILDLESSNESS
Australia	0,0	16,00
Austria	60,0	21,54
Belgium	28,0	16,06
Canada	52,0	18,94
Chile	18,0	7,72
Czech Republic	110,0	7,10
Denmark	50,0	11,86
Estonia	166,0	10,20
Finland	159,0	19,89
France	42,0	14,32
Germany	58,0	23,1
Greece	43,0	16,36
Hungary	160,0	12,00
Ireland	26,0	19,00
Israel	14,0	10,82
Italy	47,7	20,87
Japan	58,0	27,00
Korea	64,9	6,78
Luxembourg	42,0	15,42
Mexico	12,0	8,55
Netherlands	42,0	17,60
New Zealand	14,0	15,00
Norway	88,0	11,30
Poland	22,0	16,30
Portugal	30,1	6,60
Slovak Republic	164,0	10,00
Slovenia	52,1	7,00
Spain	16,0	21,60
Sweden	60,0	13,40
Switzerland	14,0	19,09
Turkye	16,0	4,50

UK	39,0	20,00
United States	0,0	18,80
Latvia	94,0	8,70
Lithuania	62,0	8,40

Table 20: Childlessness and net childcare costs for parents in 2010

COUNTRIES	**NET COSTS FOR PARENTS**	**CHILDLESSNESS**
Australia	11	16,00
Austria	3	21,54
Belgium	10	16,06
Canada	20	18,94
Denmark	12	11,86
Estonia	5	10,20
Finland	20	19,89
France	7	14,32
Germany	11	23,1
Greece	5	16,36
Hungary	4	12,00
Ireland	25	19,00
Israel	14	10,82
Japan	20	27,00
Luxembourg	12	15,42
Netherlands	20	17,60
New Zealand	13	15,00
Norway	14	11,30
Poland	19	16,30
Portugal	5	6,60
Slovak Republic	6	10,00
Slovenia	11	7,00
Spain	7	21,60
Sweden	5	13,40

Switzerland	18	19,09
UK	23	20,00
United States	30	18,80
Latvia	11	8,70
Lithuania	14	8,40

Table 21: Childlessness and services for families

COUNTRIES	**SERVICES FOR FAMILIES**	**CHILDLESSNESS**
Australia	0,75	16,00
Austria	0,63	21,54
Belgium	1,04	16,06
Canada	0,22	18,94
Chile	0,81	7,72
Czech Republic	0,51	7,10
Denmark	2,33	11,86
Estonia	0,42	10,20
Finland	1,53	19,89
France	1,33	14,32
Germany	0,90	23,1
Greece	0,07	16,36
Hungary	1,18	12,00
Ireland	0,53	19,00
Israel	0,97	10,82
Italy	0,66	20,87
Japan	0,44	27,00

Korea	0,62	6,78
Luxembourg	0,64	15,42
Mexico	0,61	8,55
Netherlands	0,83	17,60
New Zealand	1,15	15,00
Norway	1,71	11,30
Poland	0,55	16,30
Portugal	0,46	6,60
Slovak Republic	0,41	10,00
Slovenia	0,53	7,00
Spain	0,83	21,60
Sweden	1,97	13,40
Switzerland	0,32	19,09
Turkye	0,17	4,50
UK	1,38	20,00
United States	0,65	18,80
Latvia	0,89	8,70
Lithuania	1,08	8,40