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Thesis Abstract

The topic of this thesis is population dynamics (natural population change and migration) and connection between life course events (childbirth, partnership, marriage, and migration) in Europe. The topics of ageing, mortality, fertility, and migration in Europe have received considerable scholarly attention at the country level. Yet population dynamics are largely unexplored at the subnational level while policies addressing population change in Europe have not been assessed through the wholistic lens of population dynamics. Life course events are known to follow each other to a certain degree, yet the connection between life course events still calls for exploration. The goal of this thesis is to contribute to the understanding of the connection between different life course events and demonstrate the population dynamics and its connection to population policies in Europe. We look at the population dynamics and policies in Europe and then proceed to explore the relationship between life course events in Central and Eastern Europe. We finish with an investigation of the association of family statuses and migratory experience with subjective well-being measures in Belarus. We create an interactive map of average population dynamics in Europe using the Eurostat data. We also fit seemingly unrelated bivariate ordered probit as well as ordered logistic regression to the Generations and Gender Survey data from Central and Eastern Europe.

The key findings are the following. We find that the centre-periphery principle holds nationally and supranationally where urban areas and Western and Northern Europe exhibit population growth whilst rural areas and Central and Eastern Europe as well as Southern Europe have more depopulating regions. We establish a negative association between pro-natalist policies and population resilience to demographic change. We also find that a positive association between family formation events (marriage and childbearing) and spatial mobility in Central and Eastern Europe. Lastly, the findings from Belarus suggest that a combination of family statuses and categories of (dis-)advantage (gender and migration status) are linked to subjective well-being outcomes more significantly than separate determinants.

In general, looking at the population dynamics and policies and the associations between life course events as well as their connection to subjective well-being sheds light on the complexity of life course in Europe. In future work, this approach of interconnectedness may lead to a research agenda encompassing additional demographic outcomes and broader research in life course.

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Thesis Introduction

Europe is a continent that celebrates its diversity. The diversity does not only come from 44 countries, hundreds of languages or ethnicities, it also arises from the demographic tendencies and the "European way of life", a term more complex than its authors intended to be (von der Leyen 2019a, 15). This phrase was coined by the president of the European Commission (EC) Ursula von der Leyen when presenting her Commission on 10 September 2019. For the first time in history the European Union (EU) has been equipped with a vice-presidential portfolio for democracy and demography. Vice-president Dubravka Šuica has been entrusted with the Commission's effort to address demographic change – "one of [the] deepest lying challenges" for Europe (von der Leyen 2019b, 4). Demographic change in Europe affects all societal domains: economy, healthcare, migration, and environment. It translates to political, societal, and cultural outcomes in Europe and affects its standing in the world. To address the change vice-president Šuica has been tasked to identify the regions that are most affected by the demographic change and analyse its effect on different groups in society (von der Leyen 2019b, 5). Not only a considerable part of vice-president Šuica's mandate focuses on identification of demographic challenges, it is also equipped with tools necessary to address the challenges. The vice-president is to find ways to support the areas affected the most by the "brain-drain", analyse the situation of ageing in the EU and launch a debate that is to lead to a an assessment of the European social care systems. Also, the mandate assigns coordination of initiatives that reconcile work and family for the Europeans, especially the ones with children.

President von der Leyen called for "a fresh start on migration" and "return to a fully functioning Schengen Area of free movement" (von der Leyen 2019a, 15). One the of the pillars of the EU's freedom of movement that allows European citizens to travel and work across the continent. Hundreds of thousands of people have exercised this freedom when increasing numbers of Europeans migrated after the EU's Eastern enlargement in 2000s looking for a better life in the West. Another wave of migration was ignited by the Great Recession that not only exacerbated outmigration from Central and Eastern Europe, but also created new centres of emigration in Southern Europe that had been hit by the recession the hardest. In addition to migration, European countries have been experiencing population ageing that is another priority on the EC's agenda (von der Leyen, 2019b; European Commission, 2020). Across Europe, countries and subnational regions have been slowly converging in terms of the share of working age persons in population (Kashnitsky et al., 2020).

With increasingly ageing populations, the national pension, social, and healthcare systems in the Europe are expected to face considerable sustainability challenges (Ediev, 2014; Rechel et al. 2013; Christensen et al., 2009). Low fertility has also contributed to the changing face of the European population (Frejka and Sobotka, 2008). Even if the fertility rates across Europe are unequal with Southern and Eastern European countries exhibiting lower fertility than the rest of the continent, overall Europe falls within the range of low fertility (Eurostat, 2021). Similarly, existing differences between mortality in Western and Central and Eastern Europe indicate inequalities at the country level (Meslé and Vallin, 2017). Yet longevity in Europe is one of the highest in the world (UN, 2019). Taking into account the processes of migration, ageing, childbearing, and mortality, Europe stands out in the context of other industrialised regions. The old continent is leading in terms of net migration and stands second after North America in life expectancy (World Bank, 2021; UN, 2019). However, Europe is positioned last among other industrialised regions in the world in term of fertility (UN, 2019). Such combination of population dynamic indicators supranationally, nationally, and subnationally is worth taking a closer look.

Therefore, in the first chapter of this thesis we look at the average population dynamics in the EU at the Nomenclature of Territorial Units for Statistics level 3 (NUTS-3). We also explore the connection between fertility and immigration policies and the average population dynamics at the national level. Analysing the population dynamics at NUTS-3 level provides an overview of the most recent population status of the continent, highlights the potential of areas for policies ranging from subnational to supranational levels in Europe, and expands on the literature by using all NUTS-3 units rather than selected NUTS-3 or more local level samples in European countries (Gutiérrez et al., 2018; Sabater et al., 2017; Gregory and Patuelli, 2015). We also propose a 4 point typology that allows to identify NUTS-3 regions as highly depopulating, depopulating, exhibiting population growth, and highly growing. Using this typology we produce a map that serves as a snapshot of average population dynamics in Europe for the period of 2000 - 2017. We apply the typology to group European countries by their average national population dynamics in order to estimate a connection between fertility and immigration policies that were adopted in 1996 and the average population dynamics in 2000-2017. At the NUTS-3 level, we find evidence that the centre-periphery concept holds (e.g. Kashnitsky and Schöley, 2018). Nationally, urban centres exhibit population growth whilst rural areas have been found to be mostly depopulating. At the level of supranational European regions, more NUTS-3 in Western Europe and parts of Northern Europe

(Scandinavia) have experienced population growth than decline. The opposite holds for Central and Eastern European as well as Southern European NUTS-3. Turkey stands out as an exception because a large number of its NUTS-3 regions has been growing on average. At the national level, at which population policies are usually enacted, we find a negative association between fertility policies and average population dynamics indicating counter-productive efforts in promoting population resilience.

Aside from migration and natural population change, the complexity of demographic change in Europe can be deducted by looking at the plethora of different life courses across Europe. While the political efforts to address demographic changes have been deployed together with vice-president Šuica's mandate to address the compatibility of work and family life in Europe (von der Leyen, 2019b), the de-standardisation of life course in Europe is not a new subject of research and has been closely tied to the Second Demographic Transition (van de Kaa, 1987). De-standardisation approach has argued that life trajectories ceased being linear with socially defined deadlines to leave parental home, marry, and have children. In the second chapter, we explore whether such life course events as marriage, childbearing, and moving are related in Central and Eastern Europe. A variety of de-standardised life courses in CEE brings about an image of an unpieced puzzle. Differences in timing of family formation events and diverse patterns and magnitudes of spatial mobility that vary between genders make it a difficult task to understand what defines life course events and their interactions.

In the region characterised by low and lowest-low fertility (Billingsley, 2010; Billari and Kohler, 2004; Kohler et al., 2002) and negative net migration (Rees et al., 2012), coupling between family formation and spatial mobility may not only indicate a natural wish to live with a partner, but allude to willingness to migrate within or outside a country. That could have an impact on population size at both national and subnational levels. Since the fall of socialism, a significant number of countries in CEE have been subject to low fertility rates and virtually no immigration that could balance out the population decline (Fihel and Okólski, 2019). The discussion around low fertility, changing patterns of family formation, and spatial mobility has not yet touched upon the relationship between these processes in the post-socialist context. Expanding knowledge in the field would allow to better understand and address the population change in CEE. Therefore, the central question of chapter 2 is as follows: what is the relationship between family formation events and spatial mobility in CEE? We find a statistically significant positive correlation between family formation event (marriage or

childbearing) intentions and spatial mobility intentions. Joint family formation and moving events could indicate that marriage and childbearing take place after spatial mobility or vice versa.

Europe does not end with the European Union, neither does research on life course dynamics. Certain non-EU areas of the continent have received more attention from demographers and sociologists than others. For example, case studies investigating life course in Norway or Switzerland have a lasting tradition of looking at two societies that have undergone massive transformations throughout the 20th century (Featherman and Sorensen, 1983; Lesthaeghe and Neels, 2002). On the other hand, countries in Eastern Europe have been largely overlooked. One can only speculate why. Data accessibility and quality, generalisability concerns, research funding on micro level or economic development indicators on macro level can prevent scholars from looking into the life course of Eastern Europeans.

Intriguingly, the scientific interest in country's life course could not only be associated to its economic power, but connection intensity it has with the European Union as well. Belarus offers an interesting example. A country that has barely any institutional connections to the EU and has been subjected to the Union's sanctions, remains one of the least researched societies in the continent with respect to life course. The extensive social change the country has undergone due to the transition from socialist planned economy to the market economy in 1990s and the subsequent socioeconomic and political stagnation has created a unique environment in which family plays a significant role in providing well-being.

Looking from the point of view of life course, Belarus presents a challenging puzzle. As a highly spatially mobile society with almost a quarter of residents who experienced internal migration, Belarussians constitute an even more interesting group for life course research (NSCRB, 2020). Their generally more complicated life courses provide a source of heterogeneity and create complex subgroups that do not stratify the society, but constitute special cases in which internal migration, family formation, and childbearing as well as gender can interact and be connected to the outcomes of subjective well-being e.g. life satisfaction depression, and loneliness. In the third chapter of this thesis we explore the connection early life migration experience, gender, and family status has with subjective well-being. We find that intersectionality approach towards a set of family statuses, gender, and migration experience reveals associations between the family statuses, gender, and migration experience

and subjective well-being. In addition, we provide suggestive evidence that educational gradient allows for a more focused evaluation of the link.

In the end, Europe is a diverse continent in a cultural, socioeconomic, geopolitical as well as demographic sense of the word. In the latter meaning, more than 40 countries in the continent exhibit differences in population dynamics and life course both nationally and sub-nationally. However, the demographic change the continent has been undergoing can be somewhat generalised at the intersection of migration, family formation and its outcomes on different domains of life. In the EU population change is a long lasting process that has been contributing to population growth and decline for many consecutive years. Such events as EU's enlargement or the Great Recession may have strengthened the process through the channel of migration. Yet low fertility, mortality rates and ageing in Europe as well as national population policies have contributed to the population dynamics of Europe as we present in this thesis. Complexity of life courses and interactions between life course events is yet another European curiosity. In Central and Eastern Europe family formation and spatial mobility are tightly related phenomena. People tend to move anticipating a change in marital status or when expecting children. The opposite may also hold. Lastly, convoluted life courses can have a long lasting impact on life quality. In Belarus, a combination of family statuses, migration experience, and gender are linked to subjective well-being more significantly than separate determinants.

Chapter 1. Population Dynamics and Policies in Europe: Analysis of Population Resilience at the Subnational and National Levels

While Europe has experienced three migration population shocks (the European Union Eastern Enlargement, the Great Recession and the European Refugee Crisis) since the beginning of the 21st century, its population dynamics have been long defined by natural population change through fertility and mortality. An analysis of a combination of natural population change and migration can shed light on Europe's demographic situation. By looking at the population dynamics at the NUTS-3 subnational regions we seek to show the diversity and conglomeration of regions that exhibit population growth or decline. For that matter we present a typology of regions (high depopulation, depopulation, population growth and high population growth) to navigate the average population dynamic map. We later employ the typology to group countries in terms of average population dynamics and assess the connection between fertility and immigration policies in 1996 and average population dynamics in 2000-2017. We use the Eurostat data on natural population change and net migration for 2239 NUTS-3 regions across Europe and its territories for the 2000-2017 period and the UN World Population Policy database, the UN Population Division and the World Bank's World Development Indicators data. Our findings are twofold. First, we find that the centre-periphery principle holds nationally and supranationally where urban areas and Western and Northern Europe exhibit population growth whilst rural areas and Central and Eastern Europe as well as Southern Europe have more depopulating regions. Second, our analyses suggest a negative association between fertility policies and population growth. These findings zoom into the subnational regions of Europe and hint the direction pro-natalist policies might take in the long run. Our findings can inform policy makers that seek to derive tailor made policies.

1.1 Introduction

In the past two decades Europe has witnessed unprecedented population shocks. The largest in history the Eastern Enlargement of the European Union (EU) in 2004 and 2007 made more than 100 million people EU citizens expanding the population of the EU from 381 million to 494 million (Eurostat, 2020a). Another momentous change in the Europe's population coincided with the European Migrant Crisis that started in 2015. Only in 2015 more than a million refugees reached the Europe constituting the largest ever inflow of asylum seekers in Europe (PEW, 2016).

On no account European population dynamics are limited to the unique events of the beginning of the 21st century, but are also defined by the long term processes of population ageing, mortality, fertility, and migration. Europe has one of the highest proportions of older persons in its populations in the world (Vobecká et al., 2013; European Commission, 2020). The increase in the proportion of the elderly in European populations has drawn scholarly

efforts to identify challenges in socio-economic development of the continent (Bloom et al., 2015). With increasingly ageing populations, the national pension, social, and healthcare systems in the EU are expected to face sustainability challenges (Ediev, 2014; Rechel et al. 2013; Christensen et al., 2009). Hand in hand with ageing comes fertility of the EU member states. In general the fertility rate of the EU has been below the replacement rate since the beginning of the 21st century (Frejka and Sobotka, 2008). Yet regional fertility rate differences exist. While Western Europe and the Nordics have relatively higher fertility rates, some of the Southern and Central and Eastern European countries barely pass the lowest-low fertility threshold of 1.3 (Human Fertility Database, 2019; Goldstein et al., 2009). Migratory tendencies are heterogenous across Europe as well. First, demographers have shown that free movement in the EU has magnified intra-European migratory flows (Castro-Martín and Cortina, 2015) and changed cohort migration patterns (Bernard, 2017). Second, international migration in Europe has been growing steadily (van Mol and de Valk, 2016; Fassmann and Munz, 1992). Extra-EU migration is expected to either contribute to population growth or slow down depopulation in Europe (van Nimwegen & van der Erf , 2020). However, internal migration is a crucial component defining subnational populations (Rees et al., 2017; Rees et al., 2013). Population policies have too played a role in defining the current demographic state of Europe. Facing declining fertility rates and ageing societies, many countries in Europe have introduced various family policies in order to smoothen the socio-economic challenges of the future (Ainsaar and Rootalu, 2016). Countries with the prospect of population decline may experience changes ranging from national identity (Teitelbaum and Winter, 1998) to long term economic growth prospects (Bloom et al., 2010). Population ageing is closely connected to social security and pension concerns that are frequent in industrialised countries (Kinsella and Phillips, 2005). Policies that address ageing have mostly focused on fiscal aspects of the matter whilst more controversial ideas such as replacement migration policies have faced public scrutiny (May, 2012). On the other hand, pro-natalist policies receive support from governments, but usually fail to deliver expected results as not only the fertility rates do not increase, but the decline in fertility barely slows down when policies are enacted (Grant et al., 2004). Immigration policies seem to have contributed the most with respect to mediating the population ageing or decline in Europe. Yet the European governments aim to balance the need of immigration and concerns it raises among native populations by introducing quotas or qualification requirements (Martin and Zürcher, 2008; van Houtum and Pijpers, 2007).

Population studies have largely overlooked Nomenclature of Territorial Units for Statistics level 3 (NUTS-3) as a unit of analysis at the European level. NUTS-3 regions are deemed useful for socio-economic analyses that focus on specific diagnoses (Eurostat, 2020b). NUTS-3 regions vary in both population and area providing a considerable degree of variation to explore. There exists a considerable body of research that has looked at subnational population dynamics in Europe, the work either focused on one of the components of population change (e.g. Kashnitsky et al., 2020; Kashnitsky et al., 2017) or has utilised higher level statistical units (e.g. Rees et al., 2013). To the best of our knowledge, we are first to explore the patterns of natural population change and migration at NUTS-3 level using the longest period timeframe from 2000 to 2017. Analysing the population dynamics at NUTS-3 level provides an overview of the most recent population status of the continent, highlights the potential of areas for policies ranging from subnational to supranational levels in Europe, and expands on the literature by using all NUTS-3 units rather than selected NUTS-3 or more local level samples in European countries (Gutiérrez et al. 2018; Sabater et al., 2017; Gregory and Patuelli, 2015). We also propose a four point typology that allows to identify NUTS-3 regions as highly depopulating, depopulating, exhibiting population growth, and highly growing. Using this typology we produce a map that serves as a snapshot of average population dynamics in Europe for the period of 2000 - 2017. Our four point typology helps to address policy matters in Europe. As population policies are largely crafted at the national level, we assign countries rather than NUTS-3 regions to the four types of population dynamics to check if there exists a connection between population policies adopted in 1990s and the current average demographic state of European countries. In this way we contribute to the efforts evaluating population policies in Europe (e.g. Ainsaar and Rootalu, 2016). We also expand the broader literature on population policies in fertility (e.g. De Silva and Tenreyro, 2017; Tsui, 2001) and migration (e.g. May, 2012).

This paper outlines differences in population growth or decline across 2239 NUTS-3 regions across Europe for which Eurostat data on population size, natural population change, and net migration exists over the period of 2000-2017. It also looks at the associations between the population policies adopted in 1990s and the current state of population dynamics in Europe by employing the data from the United Nations (UN) World Population Policy database, the UN Population Division and the World Bank's World Development Indicators. This study encompasses EU-28 countries (including the UK) and countries in the European Economic Area (Norway and Iceland), Switzerland as well as (prospective) EU candidate countries

(Albania, North Macedonia, Serbia, and Turkey). Here and throughout the paper, the references to groups of regions, such as Southern Europe, mean a subset of countries defined by the EuroVoc (2020).

1.2 Population dynamics in Europe

Mortality and ageining

Mortality patterns in Europe are often discussed through the lens of divergence between Eastern and Western European countries (Hertzman, 1996). It is argued that Europe can roughly be divided into two groups of higher life expectancy in the West and lower in the East (Meslé and Vallin, 2017). In more detail, the demographic literature focuses on mortality tendencies within a selected sample of countries. For instance, Vallin and Meslé (2004) have indicated that not only there exists a difference in life expectancy between Western and Eastern Europe, but have shown that a similar tendency is also present within the region of Central and Eastern Europe where Central European countries (e.g. Poland, Czechia) have higher life expectancy and faster life expectancy improvement in years than Eastern Europe (e.g. Russia, Ukraine). Looking at post-Soviet countries Grigoriev et al. (2010) have found life expectancy differences between countries where more radical socio-economic changes have led to higher life expectancies. Jasilionis et al. (2011) investigated the mortality rates in the Baltic sub-set of post-Soviet countries to find that countries with relatively similar mortality rates have diverged with an improvement in Estonia, stagnation in Latvia, and worsening in Lithuania. A recent study that incorporated countries from Central Europe (Poland), Eastern Europe (Russia), and the Baltic states (Lithuania) has shown that mortality rates do not only vary between countries, but within countries as well (Grigoriev et al., 2020).

With respect to large scale pan-European research, ageing European societies have received a more encompassing scientific attention. At the European level, population age structures have been found to become more similar over time in Western, Eastern, and Southern Europe. Yet the population age structure differences between subnational regions across Europe have gotten starker (Kashnitsky et al., 2020). These differences can either hold in terms of the centre-periphery, country border territories or migration origin and destination regions. A large proportion of working age population is found to live in urban areas while peripheries suffer from out-migration (Kashnitsky and Schöley, 2018). Similar findings have been confirmed by studies that looked at the subnational regions in selected countries. Sabater et al. (2017) have

found an increasing segregation over time between older and younger groups across neighbourhoods in England and Wales. The divergence suggested a more pronounced gap between north and south of the countries. It is worth noting that all European populations are experiencing ageing, however differences in the speed of ageing exists across countries and regions (Kashnitsky et al., 2017).

For governments in industrialised economies population ageing policies have been on the top of the list of priorities as they are closely related to public spending and broader family policies (Vobecká et al., 2013; May, 2012). Apart from being linked to social security, pension, and care-giving concerns, population ageing has been associated to depopulation, especially in low fertility countries (Kinsella & Phillips, 2005). To address fiscal matters, policy makers have explored options in the field of tax incentives and institutional arrangements that could encourage later retirement. In addition, some evidence suggests an existing link between social security taxes and low fertility levels that could indicate a counterproductive vicious circle in the long run (Population Reference Bureau, 2009).

Fertility

Overall, fertility patterns and trends in Europe are extremely diverse (Frejka and Sobotka, 2008). Fertility oriented comparative analyses looked at total fertility rates, cohort fertility trends across European countries to establish patterns in childbearing and fertility timing across Europe (Kohler et al., 2006; Billari and Kohler, 2004; Kohler et al., 2002). The most recent pan-European fertility trends have been generalised as a 'dual reproductive system' where Southern European and German speaking countries exhibit lower fertility than that of Western, Northern and some of the Central and Eastern European countries (Lesthaeghe, 2020).

Other work sought to show that countries and regions play a specific role in determining fertility rates and types across Europe (Lappegård et al., 2014; Klüsener et al., 2013; Coale and Watkins, 1986; Lesthaeghe, 1980). In Central and Eastern as well as Southern Europe fertility rates have been low since 1990s (Billari and Kohler, 2004). Western Europe and Nordic countries, however, had been exhibiting close to replacement fertility rates until recently. Nonetheless, many countries with relatively high fertility have been witnessing a decline in period fertility rates since 2010 (Human Fertility Database, 2020). In particular this holds with respect to Nordic countries where declining period fertility is expected to turn into a smaller cohort fertility (Hellstrand et al., 2020). The return of the lowest-low fertility (Billari, 2008) to

Southern Europe has also been documented with evidence from subnational regions (Caltabiano et al., 2019; Comolli, 2017).

The fertility differences across European societies are often attributed to a plethora of aspects (see Balbo et al, 2013). Welfare regimes for example have a complex link to fertility through a variety of labour market and educational systems that translate into fertility differences (Neyer, 2013). Economic uncertainty has been found to not only affect people's fertility through policies and welfare regimes, but also through the way people perceive the future (Vignoli et al., 2020). Increasing gender equality has been seen as a factor that could converge fertility rates in the future (Esping-Andersen and Billari, 2015). The determinants of fertility rate differences translate into difficulties when constructing fertility policies. Challenges to counter the reasons why people choose not to have children are complex. Among other things they take into account that marital status, the cost of raising a child, the household income, childcare, the opportunity costs, and compatibility with workforce participation for women are important factors defining the (lack of) success of pro-natalist policies (Vobecká et al., 2013; Chawla et al., 2007). Public policies have not been seen as completely effective because they slow down the demographic trends as opposed to stopping or reversing them (Grant et al., 2004). May (2012) argues that the policy specialist consensus orbits around the negligible effect of transfer-based pronatalist policies. Money transfers and tax breaks are only perceived as monetary benefits that are not sufficient to raise a child from the view point of families. These measures are also very costly for governments and temporary benefits of such policies do not deliver expected results. For pro-natalist policies to be effective they need to incorporate long term measures together with short term tools. More precisely these policies should combine financial incentives with work and family arrangements as it has been done in Scandinavian countries (May, 2012; Chawla et al., 2007; McDonald, 2002). The UN's projections indicate that the sub-replacement fertility will become a norm everywhere, but in Africa, in turn quickening population ageing (Lutz et al., 2008).

International and internal migration

The scholarship on migration in Europe is divided into two general strands. First, demographers have shown that free movement in the EU has magnified intra-European migratory flows (Castro-Martín and Cortina, 2015) and changed cohort migration patterns (Bernard, 2017). For instance, nearly 2 million EU citizens changed their countries of

residence in 2008. The largest migration flow has been found to be from the new member states to the EU-15, in real terms migrant flows from Poland to Germany made for the biggest share of intra-EU migration (van Mol and de Valk, 2016). During the Great Recession outmigration from Bulgaria and Romania to EU-15 remained the highest even in comparison to Central and Eastern European countries that joined the EU in 2004 (Kahanec et al., 2016). This migratory pattern was reciprocated by outmigration from Southern European countries to the rest of the EU. For instance, outmigration of Italian and Spanish residents grew during the Great Recession (Anelli and Peri, 2017; Izquierdo et al., 2016).

Second, another strand of demographic literature looks at extra-EU migration. To start with, extra-EU migration is expected to either contribute to population growth or slow down depopulation in Europe (van Nimwegen and van der Erf, 2010). Immigrants come to the EU usually from China, India, and Morocco while the nationality of non-EU migrants residing in the EU usually is Turkish, Moroccan or Chinese (van Mol and de Valk, 2016). The non-EU migrants not only add up to the total population, but also have been found to have more children than locals at least in the first generation (Milewski, 2010; Garssen and Nicolaas, 2008). There is also evidence that shows the importance of immigration to sub-regions in Europe. Sub-regions receiving immigrants are predicted to have larger populations in the future (Rees et al., 2012).

In terms of policies, immigration is arguably the most controversial topic in social policy public debates. Unsurprisingly migration remains a constrained policy field despite the need for global mobility because of both population and labour decline (Pritchett, 2006). Immigrants are often seen as a threat to receiving countries' low-skilled workers and even cultural and religious values (Martin and Zürcher, 2008). Many immigration policies in European countries have taken these concerns into account by embracing restrictions and greater selectivity of immigrants in both number and skill (May, 2012). Nonetheless, immigration is a measure that could address the labour needs, low fertility, and population ageing in industrialised settings such as Europe. The United Nations has prepared estimations of a yearly number of immigrants necessary to maintain the population size throughout the period of 2000-2050 (UN, 2000). The estimates for the EU have shown that 949,000 immigrants would be necessary every year to keep the EU population constant whilst 1.5m would be needed annually to maintain constant the 15–64 age group, and 13.5m would be needed every year to maintain a constant ratio of the 15–64 to the 65+ age groups. These result

were unexpected in Europe and have indicated an urgent need to address population issues (May, 2012). In fact, in recent years, governments have made adjustments to policies in order to promote the immigration of the particular types of individuals they need and limit other forms of immigration. The UN's inquiry into governments' immigration policies has indicated that governments aim at managing migration rather than curb it (United Nations, 2010; 2006). For example, the EU has opened its borders to selected migrants due to an increasing need for certain types of skills (van Houtum and Pijpers, 2007).

1.3 Data, typology, and methods

Data

The descriptive part of this paper uses Eurostat data on natural population change and net migration plus statistical adjustment (Eurostat, 2020c) across Europe. This study encompasses EU-28 countries (including the UK) and countries in the European Economic Area (Norway and Iceland), Switzerland as well as (prospective) EU candidate countries (Albania, Montenegro, North Macedonia, Serbia, and Turkey). The data is aggregated at the NUTS-3 level, version of 2016 (Eurostat, 2020d); NUTS refers to Nomenclature of Territorial Units for Statistics. At the moment of data procurement in January 2020 the data covered NUTS-3 regions for the period of 2000-2017.

We do not exclude the non-European territories of France, Portugal, and Spain[1], but we acknowledge they are geographical outliers (Kashnitsky et al., 2017). In addition, the data does not equally cover all the NUTS-3 regions throughout the period of the study. Some NUTS-3 of EU countries and candidate countries lack data for selected years[2]. Our final working sample consists of 2239 NUTS-3 regions across Europe and its territories for the 2000-2017 period.

[1] France: Guadeloupe FRA10, Martinique FRA20, Guyane FRA30, La Réunion FRA40, Mayotte FRA50. Portugal: Região Autónoma dos Açores PT200, Região Autónoma da Madeira PT300. Spain: Ceuta ES630, Melilla ES640, El Hierro ES703, Fuerteventura ES704, Gran Canaria ES705 862, La Gomera ES706, La Palma ES707, Lanzarote ES708, Tenerife ES709.

[2] NUTS -3 missing of: Albania: (years 2000-2011) all NUTS-3. Germany: (years 2000-2010) Gottingen DE91C, Meißen DED2E, Sächsische Schweiz-Osterzgebirge DED2F, Erzgebirgskreis DED42, Mittelsachsen DED43, Vogtlandkreis DED44, Zwickau DED45, Leipzig DED52, Nordsachsen DED53, Dessau-Roßlau, Kreisfreie Stadt DEE01, (years 2000-2007) Jerichower Land DEE06, Börde DEE07, Harz DEE09, Saalekreis DEE0B. Denmark: (years 2000-2006) Byen København DK011, Københavns omegn DK012, Nordsjælland DK013, Østsjælland DK021, Fyn DK031, Vestjylland DK041, Nordjylland DK050. France: (years 2000-2012) Guadeloupe FRA10, Mayotte FRA50. Hungary: (years 2000-2012) Budapest HU110, Pest HU120. Ireland: (years 2000-2011) all NUTS-3. Lithuania: (years 2000-2012) all NUTS-3. The Netherlands: (years 2000-2013) Noord-Friesland NL124, Zuidwest-Friesland NL125, Zuidoost-Friesland NL126, (years 2000-2002) Noord-Drenthe NL131,

The analytical part of this paper employs the UN World Population Policy database, the UN Population Division and the World Bank's World Development Indicators data for 1996 together with the Eurostat data for 34 countries in Europe for which we can connect the aforementioned datasets.

Population dynamic score typology and methods

We establish a typology which permits to place subnational European regions (NUTS-3) and countries within a specific group according to population dynamics (population growth or decline) and drivers (natural population change and migration). A NUTS-3 region or a country is considered to be extremely depopulating if both negative natural population change and negative net migration occur in the unit of analysis. A region or a country is treated as depopulating if it has a negative natural population change even if the net migration in these units is positive, but not big enough to counter the negative natural population change. If a region or a country experiences population growth via positive natural population change and its tendencies in outmigration are smaller than the natural population growth, a unit is considered populating. A NUTS-3 or a country is marked as extremely populating if it exhibits both positive natural population change and positive net migration.

Using the aforementioned definitions, each NUTS-3 region-year and country-year is assigned a number: 1- high depopulation, 2- depopulation, 3- population growth, and 4- high population growth. An arithmetic average is derived for each NUTS-3 region-year and country-year assigned to a NUTS-3 region and a country to indicate average population dynamics of each unit for the timeframe of 2000-2017. After, the results for each region-year and average

Zuidoost-Drenthe NL132, Zuidwest-Drenthe NL133, Zuidwest-Overijssel NL212, Twente NL213, Zuidwest-Gelderland NL224, Achterhoek NL225, Arnhem/Nijmegen NL226, Kop van Noord-Holland NL321, IJmond NL323, NL332 Agglomeratie 's-Gravenhage, Agglomeratie Leiden en Bollenstreek NL337, Zeeuwsch-Vlaanderen NL341, West-Noord-Brabant NL411, Noordoost-Noord-Brabant NL413, Zuidoost-Noord-Brabant NL414, Midden-Limburg NL422, Zuid-Limburg NL423, (years 2000-2013) Oost-Zuid-Holland NL33B, Groot-Rijnmond NL33C. Norway: (years 2000-2004) all NUTS-3. Poland: (years 2000-2009) Koszalinski PL426, Szczecinecko-pyrzycki PL427, Szczecinski PL428, Nyski PL523, Opolski PL524, Grudziadzki PL616, Swiecki PL618, Wloclawski PL619, Slupski PL636, Chojnicki PL637, Starogardzki PL638, (years 2000-2013): Miasto Lódz PL711, Lódzki PL712, Piotrkowski PL713, Sieradzki PL714, Skierniewicki PL715, Kielecki PL721, Sandomiersko-jedrzejowski PL722, Bialski PL811, Chelmsko-zamojski PL812, Lubelski PL814, Pulawski PL815, Krosnienski PL821, Przemyski PL822, Rzeszowski PL823, Tarnobrzeski PL824, Bialostocki PL841, Lomzynski PL842, Suwalski PL843, Warszawski wschodni PL912, Warszawski zachodni PL913, Radomski PL921, Ciechanowski PL922, Plocki PL923, Ostrolecki PL924, Zyrardowski PL926. Serbia: (years 2000-2016) all NUTS-3. Turkey: (years 2000-2006) all NUTS-3. UK: (years 2000-2012): NUTS-3 in Scotland and Northern Ireland.

population dynamic score are plotted using *RStudio* package *leaflet* while the countries are grouped according to their average population dynamics in Table 1.1.

In the analytical part of this paper we use the UN World Population Policy database (policy on fertility level coded -1=lower; 2=raise and policy on immigration coded -1=lower; 2=raise), the UN Population Division (median age in population, available for 1995) and the World Bank's World Development Indicators (log GDP per capita and percentage of urban population) data to run an OLS regression with robust standard errors estimating the association between fertility and migration policies enacted in 1996 and average population dynamics in the period of 2000-2017. The time frame between 1996 and 2017 is chosen purposely in order to be able to capture a connection (if any) between the population policies and their possible influence on population dynamics.

1.4 Results

Average population dynamics in 2000-2017

Here we make reference to groups of NUTS-3 regions that coincide with regional definitions provided by the EU's multilingual and multidisciplinary thesaurus, the EuroVoc (2020)[3]. Four regions are defined: Western Europe, Central and Eastern Europe, Southern Europe, and Northern Europe. These regions encompass both countries inside and outside of the EU.

In Figure 1.1 we present descriptive results of population dynamics on NUTS-3 in Europe from 2000 to 2017 (see Appendix A1 for a link to an interactive map). Over the period of 17 years population patterns emerge. To start with, we find descriptive evidence that the centre-periphery concept holds whether at national level where urban areas exhibit population growth whilst rural areas depopulate, or at European level where Western European and Scandinavian NUTS-3 regions have been growing whereas Central and Easter European and Southern European NUTS-3 have been mostly depopulating (Kashnitsky and Schöley, 2018).

NUTS-3 in Central and Eastern Europe as well as the Baltic States exhibit a pronounced tendency of depopulation by both negative natural population change and

[3] Western Europe: Austria, Belgium, France, Germany, Ireland, Liechtenstein, Luxembourg, the Netherlands, Switzerland, the United Kingdom. Central and Eastern Europe: Albania, , Bulgaria, Czechia, Croatia, Hungary, Montenegro, North Macedonia, Poland, Romania, Serbia, Slovakia, Slovenia. Southern Europe: Cyprus, Greece, Italy, Malta, Portugal, Spain, Turkey. Northern Europe: Denmark, Estonia, Finland, Latvia, Lithuania, Norway, Sweden.

outmigration (1 – purple). Similar tendencies can be observed in Southern European countries. However, they are less strongly pronounced. Depopulation takes place through the channel of negative natural population change, but net migration in these NUTS-3 is positive (2 – turquoise). These regions are mostly found in all European regions but Central and Eastern Europe. In Central and Eastern Europe turquoise depopulating regions arguably coincide with urban areas (e.g. Romanian NUTS-3). NUTS-3 in Western Europe and parts of Norther Europe (Scandinavia) indicate opposite dynamics. Regions in green (3) show population growth via positive natural population change and outmigration. The most intensive population growth is marked with yellow (4) represents NUTS-3 that grow in size due to both positive natural population change and immigration. Yellow regions are predominantly major urban centres or national capitals. The latter especially stands out in Central and Eastern Europe in which large majority of NUTS-3 regions have been experiencing depopulation. There also exists an evident West-East, North-South divide where many more NUST-3 regions exhibit population growth in the West and North in comparison to the East and South of Europe. Turkey, however stands out as an outlier in the context of Southern Europe. Its western NUTS-3 regions indicate a high population growth which is only characteristic to some parts of Northern Italy. Also, only a limited number of subnational regions in Turkey mostly located in the north-eastern part of the country depopulate strongly.

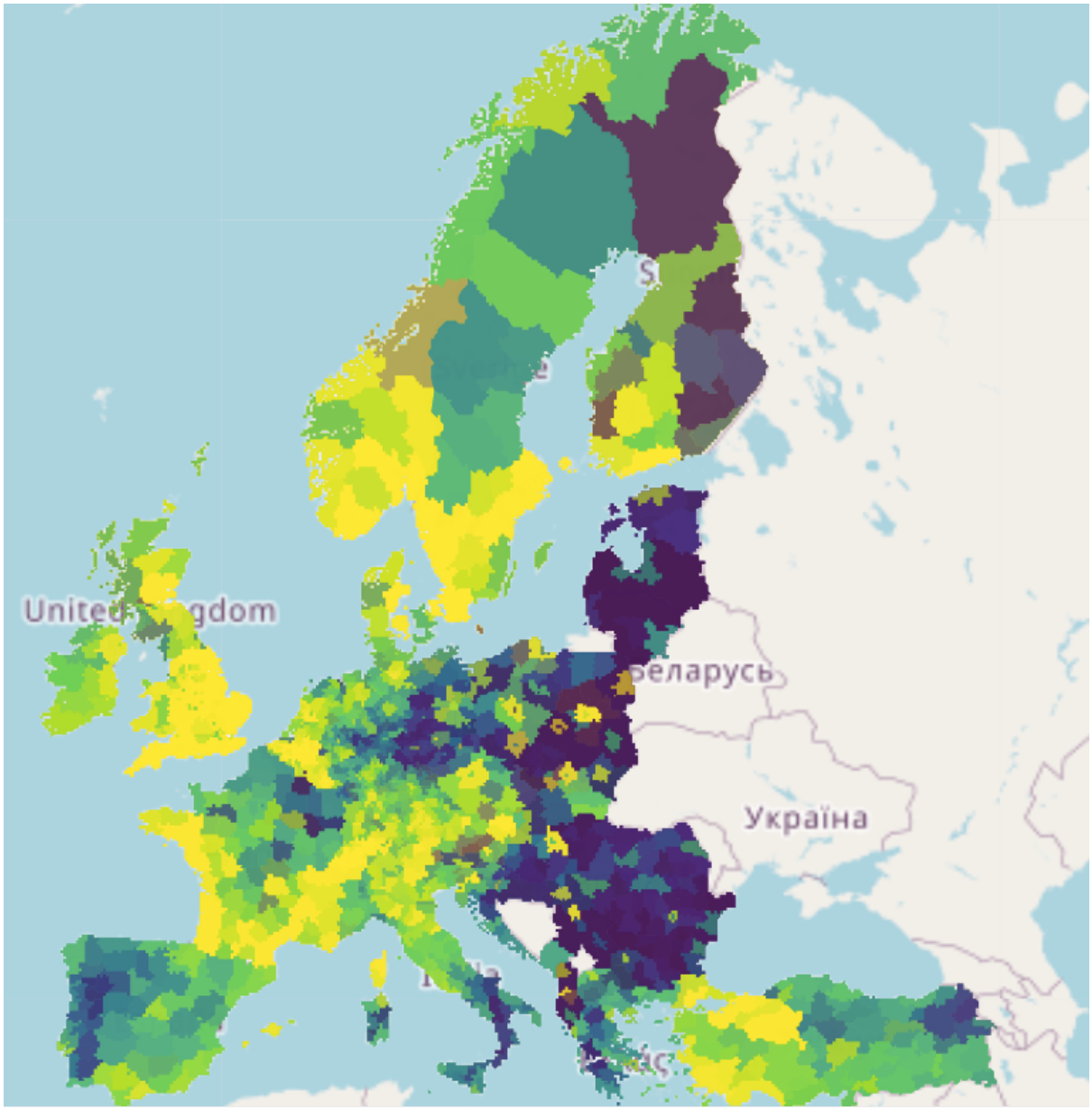


Figure 1.1 – Average population dynamics in NUTS-3, 2000-2017

Note: 1 (purple) - high depopulation, 2 (turquoise) - depopulation, 3 (green) - population growth and 4 (yellow) - high population growth. This is a static representation of the population dynamics. For an interactive map see Appendix A1. Source: Eurostat (2020)

In Table 1.1 we summarise the average population dynamics by country using the same four-point typology as for the NUTS-3 regions. Some geographic patterns emerge where most Central and Eastern European countries experienced depopulation while remaining parts of Europe grew in 2000-2017.

Table 1.1 – Average population dynamics in European countries, 2000-2017

High depopulation (1)	Depopulation (2)	Population growth (3)	High population growth (4)
Albania	Estonia	Germany	Austria
Bulgaria	Hungary	Greece	Belgium
Croatia	Poland	Montenegro	Cyprus
Latvia	Serbia	North Macedonia	Czechia
Lithuania		Portugal	Denmark
Romania		Slovakia	Finland
		Spain	France
			Iceland
			Ireland
			Italy
			Liechtenstein
			Luxembourg
			Malta
			Netherlands
			Norway
			Slovenia
			Sweden
			Switzerland
			Turkey
			United Kingdom

Source: Eurostat (2020).

Policies and average population dynamics

In Table 1.2 we show the results of the association estimation between fertility and immigration policies in 1996 and average population dynamics in the following decades. The regressions are reported with and without controls for covariates traditionally used in the literature, such as mean population age, urbanisation, and GDP per capita. Columns 1 and 2 report the association between fertility policies in 1996 and subsequent average population dynamics in Europe. Columns 3 and 4 show the connection between immigration policies and the average population dynamics in Europe. Columns 1 and 3 indicate the estimation of the relationship without controls while columns 2 and 4 include the covariates. We find a negative association between fertility policies in 1996 and average population dynamics in Europe between 2000 and 2017. In practical terms this indicates a presence of a relationship suggesting a connection between pro-natalist policies and higher population decline in Europe. This relationship holds once the controls are included. The estimation between immigration policies in 1996 and average population dynamics in 2000-2017 does not indicate an association in neither of the models.

Table 1.2 – Association between average population dynamics and population policies

	DV: Average population dynamics (2000-2017)			
	(1)	(2)	(3)	(4)
Policy on fertility level (1996)	-0.477***	-0.364**		
	(0.169)	(0.154)		
Policy on immigration (1996)			-0.279	-0.216
			(0.244)	(0.191)
Mean age (1995)		-0.045		-0.096***
		(0.036)		(0.027)
Urban population as % of total		0.007		0.019
(1996)		(0.013)		(0.014)
Ln(GDP per capita, 1996)		0.504*		0.497*
		(0.182)		(0.250)
Observations	34	34	34	34
R^2	0.216	0.649	0.044	0.558

Ordinary least squares regression, robust standard errors in parentheses
*p < 0.10, **p < 0.05, ***p < 0.01

1.5 Conclusions

In the beginning of the 21st century Europe has experienced three waves of population change. The Eastern Enlargement of the EU has established a channel of intra-EU migration that many have used. The Great Recession and the Sovereign Debt Crisis has encouraged European populations to move and work in other EU member states as well (e.g. Anelli and Peri, 2017). Also, the European Refugee Crisis has provided an unprecedented population influx into the continent. However, Europe has also been undergoing a period of ageing and low fertility. Even if age structures across European countries have been converging, age differentials are found at the subnational level (e.g. Kashnitsky et al., 2020). In addition, life expectancy in Europe is distributed unequally. Higher life expectancy is recorded in Western Europe in

comparison to Eastern Europe (e.g. Meslé and Vallin, 2017). Fertility differential across Europe stands as an important factor of European population dynamics (e.g. Billari and Kohler, 2004).

This paper is an original effort to marry the measures of fertility and mortality through the concept of the natural population change as well as migration in order to provide a snapshot of how European sub-regional populations have changed since the beginning of the 21st century. For that matter we have established a typology that allows to better understand the average population dynamics in Europe from 2000 to 2017. We have used Eurostat data on natural population change and net migration to demonstrate how the subnational NUTS-3 regions faire in terms of population growth or decline.

Our findings contribute to the literature on differences in fertility, mortality, ageing, and migration. We find evidence that the centre-periphery concept holds (e.g. Kashnitsky and Schöley, 2018). Nationally, urban centres exhibit population growth whilst rural areas have been found to be mostly depopulating. At the level of supranational European regions, more NUTS-3 in Western Europe and parts of Northern Europe (Scandinavia) have experienced population growth than decline. The opposite holds for Central and Eastern European as well as Southern European NUTS-3. Turkey stands out as an exception as a large number of its NUTS-3 regions has been growing on average. We have also established an existing negative association between fertility policies in 1996 and average population dynamics in 2000-2017. These findings are in line the argument that changes in fertility policies and high investment in pro-natalist means does not ensure population resilience in the face of declining births (Botev, 2015). This association contributes to the call to update the priorities and policy recommendations in the light of changing societal concerns and emerging issues in population dynamics across countries (UNECE, 2014). We found no association between average population dynamics and immigration policies contrary to estimations that show slowing down of population decline when immigration is accounted for (e.g. Bermingham, 2001). The latter finding needs to be explored further, especially in light of the European Refugee Crisis.

There are limitations that hamper the outreach of the paper. A number of NUTS-3 regions did not have data for the full period from 2000 to 2017. Therefore, labelling of such NUTS-3 regions should be done cautiously. This too counters the efforts to demonstrate meaningful year specific population dynamics on the whole continent as some countries or subnational regions are not represented due to data limitations. In terms of assessing the

population policies, this paper has presented associative results. The connection between population policy variables (fertility and migration) as reported in 1996 and average population dynamics in 2000-2017 needs to be handled with caution. That holds in particular taking into account huge economic and societal changes that were undergoing in countries of Central and Eastern Europe or Western Balkans at that time. These dynamics could not be captured by macro level variables used in this study. Methodological hazards such as reverse causality and endogeneity only allows for an interpretation that incorporates the direction and association between the variables rather than causal links.

In conclusion, Europe has diverse population dynamics that are defined by differences in natural population change and migration. The distinction is particularly visible between urban and rural regions nationally. Supranationally, Western and Northern Europe differ from Central and Eastern Europe and Southern Europe in terms of average population dynamics. Knowing these population dynamics at the granular level of NUTS-3 can contribute to tailor made policies for specific populations of certain demographic characteristics as opposed to policies that can be associated to an even larger population decline.

Chapter 2. Early Life Course Decisions of Central and Eastern Europeans: a Gendered Connection between Family Formation and Moving Intentions?

We investigate the connection between family formation events and spatial mobility in early life course. We hypothesise that life course events may be positively related, negatively related or not related at all. Furthermore, we theorise that gender serves as a channel through which the connection between family formation and spatial mobility is expressed. In order to verify the hypotheses, we use Generations and Gender Survey data. We run seemingly unrelated bivariate ordered probit regressions to estimate the relationship between the early life course events. We find a positive association between family formation events and spatial mobility. However, there is no evidence suggesting this association is channelled through gender. These findings have the following implications. First, there is an indication that life course events are planned jointly. Secondly, future research ought to focus on realisation of connected marriage, fertility, and mobility intentions.

2.1 Introduction

In recent decades the de-standardisation of life course in Europe has received a steady interest from social scientists. With life course increasingly shedding its traditional linear patterns, new life models and their combinations have become more evident over time. Marriage lost its attractiveness as a dominant motivation to leave parental home (Sobotka and Toulemon, 2008; Billari et al., 2001). Destinations after home leaving became more varied including single living and cohabitation blurring the line linking home leaving and marriage.

The connection between marriage and childbearing has changed too. It is no longer necessary to be married before the childbirth. Change in the role marriage plays in life has made space for other family arrangements such as cohabiting with children and single parenthood. Conversely in the most recent period from 2000, spatial mobility became a more pronounced part of life course in Europe. People started moving more often than before whether for work, family related events or retirement (van Mol and de Valk, 2016; Viry et al., 2015).

Although all these trends divorce from the traditional life course model of 1950-60s by painting a more complex life pattern, they are not universally applicable for the whole European continent. Parts of Central and Eastern Europe (CEE) remain arguably defined by

the traditional life course. In comparison to North Western Europe, a considerable proportion of the youth leaves home after first marriage while marriage remains closely linked to childbearing (Perelli-Harris and Lyons-Amos, 2015; Sobotka and Toulemon, 2008). Spatial mobility has a more important role in the life course of Central and Eastern Europeans than other Europeans. Intra-European migration from east to west and from east to south grew considerably after the Eastern Enlargement of the European Union (EU) in 2004 and 2007. For instance, Polish labour migration to Germany that is the largest migration flow in real terms in Europe is possible only thanks to the freedom of movement within the EU (van Mol and de Valk, 2016).

There is a certain degree of intra-group heterogeneity in CEE. Some countries such as the Baltic States behave more like Nordic countries in terms of home leaving age while the others such as Poland or Czechia follow more traditional patterns with quite a large share of population leaving home at first marriage (Billari et al., 2001). Childbearing is still associated to marriage in Poland while it is not the case in Estonia or Bulgaria where a majority of children are born outside marriage (Sobotka and Toulemon, 2008). Migration processes are not fully generalisable in the region either. There is a stark difference between population change driven by migration while some countries such as Czechia and Slovenia have experienced population growth through immigration other populations like the ones of Lithuania and Romania declined due to outmigration (Fihel and Okólski, 2019).

The cleavage of de-standardisation of the life course is not only a result of country differences. Women and men behave differently in life course. Family life is structured by substantial gender inequalities. Single parenthood is consistently higher among women. In Europe single parenthood is 15 per cent more common among women rather than men (Sobotka and Toulemon, 2008). Conversely, more men than women tend to raise children in wedlock. In general women experience faster transition to adulthood than men; the transition is manifested through earlier marriage and parenthood (Bruckner and Mayer, 2004). The link between family formation events and moving is tighter for women as well. Women leave home at younger ages than men, predominantly to live with a partner (Billari and Liefbroer, 2007). This links to the phenomenon of women factoring in moving together and marriage as decisive elements for making their migration decisions (Kley, 2010). For men these aspects are less relevant.

A variety of de-standardised life courses in CEE brings about an image of an unpieced puzzle. Differences in timing of family formation events and diverse patterns and magnitudes of spatial mobility that vary between genders make it a difficult task to understand what defines life course events and their interactions. There have been several important attempts addressing the connection between spatial mobility, childbearing and marriage. Scholars interested in the relationship between life course events have shown how these events interrelate throughout a life time. However, no clear mechanism defining the relationship between family formation events and spatial mobility has been established. Living far away from a partner may not be feasible for family formation therefore moving to live with a partner is linked to marriage postponement (Guzzo, 2006). On the other hand, moving to live with a partner may require funds accumulated in time which can in turn delay marriage (Feijten and Mulder, 2002). We know that spatial mobility can be followed by a spell of increased fertility (Kulu, 2005) or childbirth can lead to residential reallocation (Kulu, 2008). In both cases larger living spaces can explain a large share of variation. There is evidence that the contrary holds and parents choose to stay in the place they live even after childbirth especially if they own their housing (Clark and Ledwith, 2006; Clark and Huang, 2003).

In the region characterised by low and lowest-low fertility (Billingsley, 2010; Billari and Kohler, 2004; Kohler et al., 2002) and negative net migration (Rees et al., 2012), coupling between family formation and spatial mobility may not only indicate a natural wish to live with a partner, but allude to willingness to migrate within or outside a country. That could have an impact on population size at both national and subnational levels. Since the fall of socialism, a significant number of countries in CEE have been subject to low fertility rates and virtually no immigration that could balance out the population decline (Fihel and Okólski, 2019). Population projections draw a grim future for the CEE with an expected population decline reaching 10 to 20 per cent between 2019 and 2050 for selected countries (United Nations, 2019; Bijak et al., 2007). The discussion around low fertility, changing patterns of family formation and spatial mobility has not yet touched upon the relationship between these processes in the post-socialist context. Expanding knowledge in the field would allow to better understand and address the population change in CEE. Therefore, the central question of this study is the following: what is the relationship between family formation events and spatial mobility in CEE?

We address the question by looking at correlations between the dyads of life course event intentions of marriage-spatial mobility and fertility-spatial mobility in post-socialist EU member states of Bulgaria, Czechia, Estonia, Lithuania and Romania. The analyses are inspired by theoretical deliberations on the potential connection between these life course events. Prior work has demonstrated the role intentions play in marriage formation (e.g. Guzzo, 2009), fertility (e.g. Vidal et al., 2017) and internal migration (e.g. De Groot et al., 2011). Yet, there has been a limited number of empirical papers analysing and reconciling life course event intentions in CEE. The contribution to the literature is therefore two-fold. First, to the best of our knowledge this is an original effort to investigate the correlational relationship between family formation and spatial mobility intentions in CEE. Looking at the connection between the intention dyads permits to generalise rather than specify the relationship between family formation and spatial mobility. Second, we use a novel in the field estimation strategy of the seemingly unrelated bivariate ordered probit approach. It allows to see whether seemingly unrelated intentions of marriage and spatial mobility as well as fertility and spatial mobility are interrelated after controlling for a set of exogenous variables.

We find a statistically significant positive correlation between intention dyads of marriage-spatial mobility as well as fertility-spatial mobility. The positive correlation is robust to addition of control variables capturing the highest level of education achieved, number of previous children and partnership status. We find no significant differences between genders, nor educational gradient that explains the connection. Our results suggest that family formation intentions are joint with moving intentions.

The remaining part of this paper is organised as follows. The next section provides background for the study and develops three hypotheses. The subsequent part describes the data and introduces seemingly unrelated bivariate ordered probit empirical model and estimation in detail. The following section reports results. In the concluding section, we provide a discussion of limitations and implications of the findings.

2.2 Family formation and spatial mobility in life course

Marriage in life course

In a society life course is closely associated to a progression of events that change the status of an individual. Particularly, forming a union is a defining life event that leads to a reshuffling of multiple roles. As a sign of maturity marriage has long competed with the labour market entry or education as a dominant motive to leave parental home and establish a personal household. In modern day Europe, this does not seem to be the case anymore.

Cohorts born after WWII serve as a good focus group to see the changes in the marriage institution. People born in 1950s and later postponed union formation to later ages and broke from the norm of 'age-deadline' for marriage (Corijn and Klijzing, 2001). Not only the connection between age and marriage has changed, but leaving parental home and entering into marriage has been decoupled too. Instead of marrying a considerable part of post-war cohorts entered into their first union via non-marital cohabitation (Sobotka and Toulemon, 2008; Mills, 2004). The rise of non-marital cohabitation has accommodated the change in fertility behaviour of the post-war cohorts. For instance, there had been a steady increase of births outside marriage in the 1960s cohort in comparison to 1950s. As a result marriage became gradually detached from parenthood as more forms of families such as consensual union or single parenthood emerged (Thornton and Philipov, 2009; Corijn and Klijzing, 2001).

Marriage and union formation are often linked to spatial mobility. A change in marital status leads to residential relocation whether that is due to moving in with one's spouse or upgrading the housing (Clark and Dieleman, 1996). However, the phenomenon is time sensitive. Individuals in the process of getting married are much more likely to change their residence in comparison to the ones who are unmarried or have been married for some time (Mulder and Wagner, 1993). To put it differently, in the framework of joint processes of marriage and relocations, marriage has a positive impact on spatial mobility in short run and no long-term effects (Jang et al., 2014). This is why short distance moves are likely to happen in relation to expected marriage. Anticipating family formation, moves take place shortly before a wedding (Michielin and Mulder, 2008). In a longer perspective marriage can be a deterrent from 'long-stay housing' that requires stronger commitment between partners and financial stability. Both of these factors are relevant determinants of family formation. Not only marriage, but spatial mobility gets postponed in favour of cohabitation and (affordable)

housing (Feijten and Mulder, 2002). Spatial mobility does not necessarily affect marriage (Jang et al., 2014). In reverse, it can have a disrupting effect where migration of one of the partners leads to divorce (Ferrari and Macmillan, 2019).

Fertility in life course

Having children is closely linked to other life domains be it union formation or spatial mobility. In the 'golden age' of family having a child would be the ultimate event completing a long transition to adulthood. Traditionally having children has been seen as an indisputable part of a couple's union defining it as a 'love marriage' (Burkart and Kohli, 1992). In the post-war cohorts this particularly time-sensitive connection has eroded, but preserved its significance in relation to other fertility related aspects such as education and labour market participation.

Having a child is still embedded in a setting of partnership. In order to have a child, it is important to have a partner with whom one would have a child. However, fertility is no longer strictly a result of marriage. Union formation or marriage can come before or after the birth of a child exposing a more relaxed association between the timing of marriage (if any) and fertility (Huinink and Kohli, 2014). Together with the temporal aspect of fertility and family formation, geography plays a role too. In Europe there exist regional differences revealed by extramarital fertility. In Central and Eastern Europe the extramarital fertility is higher than in Southern Europe, but lower compared to Nordic countries (Billari et al., 2001). Notwithstanding, age norms are relevant in association to educational attainment and job market performance. Reaching educational goals and successfully integrating into a labour market in most cases will have a priority over fertility in terms of timing. This pertains to a shortened period in which family formation, especially childbearing, can take place (Mills et al., 2011; Brewster and Rindfuss, 2000; Blossfeld and Huinink, 1991). Fertility and spatial mobility (or migration) are closely linked as well. The relationship, however is non-trivial because family formation can influence spatial mobility, often short distance, due to a need to improve housing conditions for a growing family (Kulu and Milewski, 2007). On the other hand, the opposite may hold too. With higher parity, the propensity to move decreases (Kulu and Milewski, 2007) especially if the family owns housing (Clark and Ledwith, 2006).

Spatial mobility in life course

Spatial mobility almost always takes place in relation to other life course events. It is linked to leaving parental home either for education, employment or family formation. Spatial mobility is not only strongly associated to life course, but is especially more likely during transitions in life course (Kley, 2011). It is expected for higher education and employment opportunities to be concentrated in cities, therefore moving for vocational training and jobs often includes moving from rural to urban areas (Mayer, 2004; Mulder, 1993).

Union formation through cohabitation or marriage is known to trigger spatial mobility. Naturally for singles union formation explains a large share of higher risk of moving than for the coupled (Mulder and Wagner, 1993). In general, any change in partnership status increases chances of residential mobility (Clark, 2013) even if the increase is marginal (Li, 2004). Inevitably fertility decisions are done factoring in dwelling spaciousness and family-friendliness of an area. These are important motives for families who already have or are planning children to move out of cities (Kulu and Milewski, 2007). Timing of live events matters too when spatial mobility is involved. Fertility related moves are more likely to happen a few months before or after the birth of a child; this tendency holds for parity progression up to three children (Kulu, 2008). There is heterogeneity in intentions to move that stems from the number of previous children. If childless individuals who intend to have a child relocate at lower rates, individuals who already have children are more prone to moving to anticipate a need to adjust housing (Vidal et al., 2017). The opposite holds true as well. Increase in family size may not have any effect, neither positive, nor negative, motivating families to move to new dwellings (Li, 2004). Parents may choose to stay where they live even after childbirth especially if they own their housing (Clark and Ledwith, 2006; Clark and Huang, 2003).

Gendered life course

In life course individual characteristics can define the timing, spacing and interconnectedness of life course events. Hence gender is a considerable source of divergence in relation to when and how people leave parental home to form unions and have children. Considering the de-standardisation of life course, women and men portray a heterogenous reality.

To start with, not only “age deadlines”, but gender differences stratify and structure life course. Women rather than men experience a faster transition to adulthood by marrying and

having children at younger ages (Brückner and Mayer, 2005). Women move out of their parents homes earlier, get married and have children younger than men. The spacing between the life course events is more narrow for women than for men. This shows tighter "age deadlines" to meet family formation goals for women as opposed to men.

After marriage, women move in with their partner at higher likelihood than vice versa (Clark, 2013; Clark and Dieleman, 1996; Mulder and Wagner, 1993). Often this is defined by their partners being a few years older with sufficient means to provide housing. More generally in partnerships, residential mobility decisions tend to prioritise men's career and women's household work (Crane, 2007; Turner and Niemeier, 1997). Even facing a growing involvement of fathers in housework and child rearing, mothers adapt to their partners' career by embracing residential mobility arrangements that may disregard their professional careers (Goldscheider et al., 2015).

2.3 Intentions in life course and hypotheses

Intentions are proximate determinants for actual marriage, fertility, and spatial mobility behaviour in life course. In this section we use intentions to develop a set of hypotheses that link family formation evens to spatial mobility. To do so, we employ the theory of planned behaviour (TPB) as the main framework underpinning the role of intentions in individual behaviour.

The TPB provides a conceptual framework to handle complex human social behaviour (Ajzen, 1991; Ajzen and Fishbein, 1973). According to the TPB, intentions play a vital role in determining performance of a behaviour. For reliable prediction of behaviour, measures of intentions must correspond to or be compatible with the behaviour, they must remain stable between the point at which intentions are expressed and fulfilled, and prediction of behaviour must improve if intentions or behavioural controls reflect actual behaviour. Said intentions are accountable for a considerable share of variance in actual behaviour (Ajzen, 1991).

The TPB has been applied in understating the connection between life course events intentions and actual behaviour. First, when individuals start cohabiting with their partners, they usually have intentions to marry later (Guzzo, 2009). That is especially strong in the case of first cohabitation. Predictably having intention to marry contributes to probability to actually get married. Second, fertility intention is a good approximation of actual fertility. Work that

has adopted the TPB in fertility intentions analyses in Europe has found the theory predictive (Billari et al., 2009; Dommermuth et al., 2009). Third, intentions have explanatory power in the context of residential mobility. De Groot et al. (2011) found that having intentions to move makes individuals four times as likely to actually change houses than not.

There is considerable evidence to argue that intentions capture a substantial share of actual behaviour *ex ante*. Together with the previous research on the connection between marriage, fertility, and spatial mobility in the life-course, the TPB permits to postulate the following hypotheses. The first hypothesis assumes a positive relationship between marriage and spatial mobility as well as fertility and spatial mobility. Here marriage-spatial mobility and fertility-spatial mobility dyads are life course events that individuals treat as connected. They either link marriage to spatial mobility, fertility to spatial mobility or vice versa.

H1: Family formation and spatial mobility are positively related life course events

The second hypothesis suggests that family formation and spatial mobility events are negatively related. The connection between marriage and spatial mobility as well as fertility and spatial mobility is negative and postpones or prevents one of the events in dyads from taking place. This hypothesis arises from the gradual decoupling of life course events that have been taking place in Europe (Buchmann and Kriesi, 2011). A disconnection between marriage and childbearing has been gaining momentum (Thornton and Philipov, 2009) whilst serial cohabitation has been found to have a significantly strong negative association with intentions to marry in younger cohorts (Vespa, 2014). Therefore, the following hypothesis says:

H2: Family formation and spatial mobility are negatively related life course events

The third hypothesis assumes a hypothetical scenario in which marriage, childbearing, and residential mobility are not related and take place as completely parallel events. In some cases individuals may plan family formation events and moving arrangements separately with no connection between them.

H3: Family formation and spatial mobility are not related life course events

Women and men exhibit differences in their family life planning. Women have more pronounced intention to have children than men. The intention becomes stronger with age

which is connected to biological and "age deadline" perseverance that is more important for women (Hayford, 2009). For women marriage is an important channel to realise their fertility intentions. The realisation of intentions among married women is higher than among the unmarried (Hayford, 2009). Family formation events have a stronger impact on women's spatial mobility decisions too (Kley, 2010). Moving in together or getting married encourage women to migrate more often than men. Hence, we hypothesise that in case there exists a non-zero relationship between family formation and spatial mobility, gender will be a channel through which that relationship is directed. In other words:

H4: Women rather than men establish a stronger association between family formation and spatial mobility

Education, as a measurable component of a broader socio-economic background, delineates the de-standardisation of life course. Moreover, the gendered gap in educational attainment deepens the differences of life course for women and men. Lack of educated men in areas characterised by lower educational attainment drives women to move to areas where men are more educated (Kröhnert and Vollmer, 2009). This type of spatial mobility usually takes place towards cities where marriage factors combine with female labour market participation. In urban areas not only women find better employment, but also more suitable men with whom they can potentially marry and have children (Edlund, 2005). However, education is known to supress fertility intention realisation for women (Berrington and Pattaro, 2014), but increase chances of getting married for men (Kalmijn, 2013). Higher levels of education are associated to more spatial mobility in general as university graduates prioritise jobs over residential stability (Venhorst et al., 2011). That is why, we suggest that education should serve as a tempering factor for the gender effect in connection to family formation and spatial mobility.

H5: Education reduces the gendered differences in association between family formation and spatial mobility

2.4 Data, variables, and methods

Data

To study the relationship between marriage and moving intentions as well as fertility and moving intentions, we use the Generations and Gender Survey (GGS) wave 1. The GGS data was collected to study the demographic behaviour and social developments in developed countries that are mostly located in Europe (GGP, 2019a). The main goal of the Generations and Gender Programme is to initiate analyses on the developments and the determinants of a plethora of demographic and social phenomena that are related to family formation processes, demographic change, intergenerational relationships, and relationships between partners. The first wave of the GGS provides variables capturing fertility and partnership aspects. Together with demographic variables, intentions of respondents that are included in the survey. The first wave of the GGS was carried out between 2002 and 2013. The GGS Wave 1 data represents 20 countries from respondents aged 17 - 85.

The focus of this paper is CEE countries that joined the EU in the two Eastern Enlargement waves in 2004 and 2007. Not all of the new member states have participated in the GGS wave 1. Due to data quality concerns Bulgaria, Czechia, Estonia, Lithuania, and Romania have been chosen as countries that have data on respondents' intentions to marry, have children and move. In these countries, the GGS surveys were performed between 2004 and 2006.

The selection of these five countries in particular allows for an inclusive analysis of marriage, fertility, and spatial mobility intensions in five CEE countries. After selecting individuals aged from 17 years-old to 49 years-old for dependent variables of interest, the sample size varies from 20,754 to 3431 observations depending on selected specifications.

Variables

We have chosen three focal dependent variables from the GGS wave 1 all of which are dichotomised for the sake of the analysis. The first focal dependent variable captures respondents' intention to marry. Respondents were asked if they intend to marry within the period of three years with values ranging from 1 to 4. Values 1 and 2 indicate no or low

intention (definitely not, probably not) whereas 3 and 4 show higher and definite intention to marry (probably yes, definitely yes). The second focal dependent variable is intention to have children which is measured on a 1-4 scale with respective labels of definitely not, probably not, probably yes, definitely yes assigned to each numeric value. The third focal dependent variable is intention to move. The question asked whether respondents intended to move within the next three years on a scale from 1 to 4 (definitely not, probably not, probably yes, definitely yes). We focus on spatial mobility rather than internal or international migration because most respondents indicating positive intention to move specify their willingness to move predominantly within the same municipality. Intention to move to another municipality is less pronounced whilst very few respondents are willing to move abroad with an exception of Bulgaria. For more see Figure 2.1.

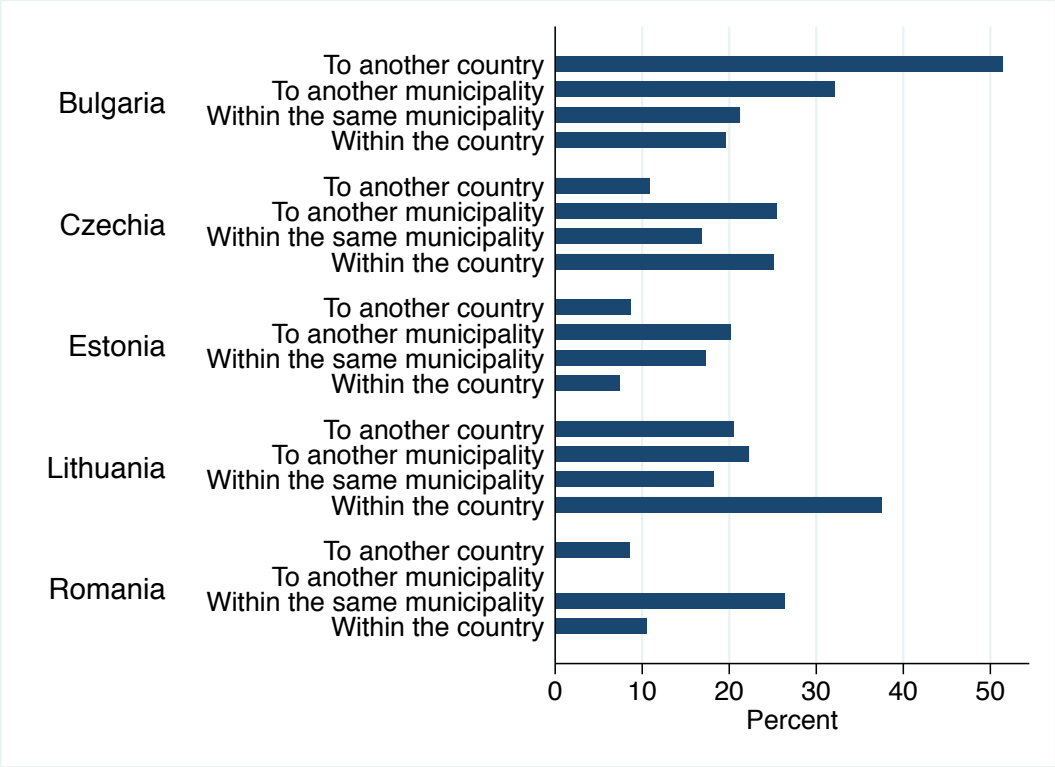


Figure 2.1 – Frequency statistics of destinations of intended move

There are seven controls included in the analyses (Appendices B1 and B2). These are age, gender, highest education level individual achieved, father's highest education level, the number of children, and the partnership status (non-cohabiting partner and no partner). Previous studies show that willingness to move and expected family size decline with age (Liefbroer, 2009). Marital, fertility, and moving intentions may differ with respect to gender as

well (Wiik et al., 2010; Stecklov et al., 2010; Berrington, 2004). In order to control for gender differences, we include respondent's gender in the estimation where 0 refers to female and 1 to male. Educational level is known to affect fertility, marriage, and migration (Mills et al., 2011; Billari et al. 2009; Blossfeld and Huinink, 1991). In this study education is measured in ISCED. Moreover, having children can explain internal migration (Thomas, 2019), reduced likelihood of subsequent pregnancies (Upchurch et al., 2002) and cases when intentions to marry plummet (Guzzo, 2009). General summary statistics of the sample are provided in Table 2.1 while country specific summary statistics can be found in Appendix B, Table 1.

Table 2.1 – Summary statistics

	Observations	Mean	Std. Dev.	Minimum	Maximum
Focal dependent variables					
Intention to marry	7,750	2.308		0	1
Intention to have a child	23,880	1.7608		0	1
Intention to move within the country	30,350	1.7452		0	1
Covariates					
Age	30,446	33.666	8.9734	17	49
Gender	30,446	0.4695		0	1
Individual education (ISCED)	30,273	3.2828		0	6
Father's education (ISCED)	26,345	2.7686		0	6
Number of children	30,446	1.1913	1.1737	0	14
Non-cohabiting partner	30,409	0.0707		0	1
No partner	30,409	0.2978		0	1

Source: GGS wave 1, own calculations.

Methods and model

We adopt the seemingly unrelated bivariate ordered probit approach to analyse the relationship between marriage, fertility, and moving intentions in life course. Importantly, the seemingly unrelated bivariate ordered probit approach is equipped to work with endogenous variables (Sajaia, 2008). This feature of the method permits to isolate the connection between variables of interest controlling for relevant background variables that may be responsible for a certain part of common variance.

In the GGS, the respondents report their intentions at the same point in time. These intentions can be tied together in some way or be independent from each other. That is why the relationship between life course event intentions of marriage, fertility, and spatial mobility may be biased because of the possible presence of non-observed variables that potentially have an impact on the intentions. In order to overcome this problem, we use a modelling strategy that employs a joint model of intentions in life course (Sajaia, 2008; Vignoli et al., 2013).

The seemingly unrelated bivariate ordered probit model is made of two equations that constitute a system of two intentions. We focus on two sets of intentions that are marriage-moving and fertility-moving intentions. First model looks at $Marriage$ and $Moving$ that capture individual characteristics i as well.

$$Marriage_i^* = X_{1i}'\beta_1 + \varepsilon_{1i}\ (equation\ 1)$$
$$Moving_i^* = X_{2i}'\beta_2 + \varepsilon_{2i}\ (equation\ 2)$$

Second model focuses on $Fertility$ and $Moving$ of an individual i.

$$Fertility_i^* = X_{3i}'\beta_3 + \varepsilon_{3i}\ \ (equation\ 3)$$
$$Moving_i^* = X_{4i}'\beta_4 + \varepsilon_{4i}\ (equation\ 4)$$

X_{1i}', X_{2i}', X_{3i}', and X_{4i}' are vectors of selected independent variables that capture exogenous variation in respondents age, age squared, gender, and father's education. These vectors include such control variables as individual education, number of previous children, and partnership status. β_{1i}', β_{2i}', β_{3i}', and β_{4i}' are vectors of unknown parameters whilst ε_{1i}, ε_{2i}, ε_{3i}, and ε_{4i} are

error terms. The explanatory variables are assumed to be exogenous. The assumption implies that the unknown error terms and covariates that we can observe are independent. It allows the model to be stripped of all exogenous variation in the model and concentrate the endogenous variation in the error terms. In this way we can estimate the correlation between endogenous factors captured by the error terms that influence both sets of marriage-moving and fertility-moving intentions.

In addition, we have to assume that the error terms ε_{1i}, ε_{2i}, ε_{3i}, and ε_{4i} are normally distributed with a zero mean and a unit variance. The connection between the error terms in equations 1 and 2 as well as equations 3 and 4 are expressed by the correlation coefficient ρ. We use the likelihood ratio test to check the existence of independence between the equations 1 and 2 then equations 3 and 4. The H_o for the test is $\rho = 0$. If the H_o is rejected, then we can proceed with estimating a meaningful relationship between marriage-moving and fertility-moving intentions. We use an estimation command *bioprobit* developed for Stata by Sajaia (2008).

2.5 Results

Seemingly unrelated bivariate ordered probit estimation for marriage and moving intentions

In this section we outline the estimation results for marriage and moving intentions. Figure 2.2 presents the correlation between the focal variables with baseline controls for age, age squared, gender, and father's education and full controls that in addition to exogenous variables include individual education, number of children, and partnership status (for detailed estimation results see Appendix B, Table 2).

The baseline models presents statistically significant correlation between the error terms. The correlation between intentions to marry and move is 0.199. It confirms the positive relationship between marriage and spatial mobility in life course hypothesis.

The controls for the estimation have been selected for the following reasons. Accounting for individual social and economic factors matters when analysing marriage intentions, we include individual highest education achieved as a control into the analysis

(Guzzo, 2009). Having children impacts marital intentions (Guzzo, 2009) and residential reallocation (Vidal et al., 2017). Partnership status and cohabitation with a partner affect marital (Guzzo, 2009) and moving (Feijten and Mulder, 2002) intentions. Controlling for individual education, number of children, and partnership status allows to establish a clearer picture of the connection between marriage and moving intentions. The correlation between intentions to marry and move remains positive 0.175. It is important to note that baseline and full control estimations are not significantly different from one another.

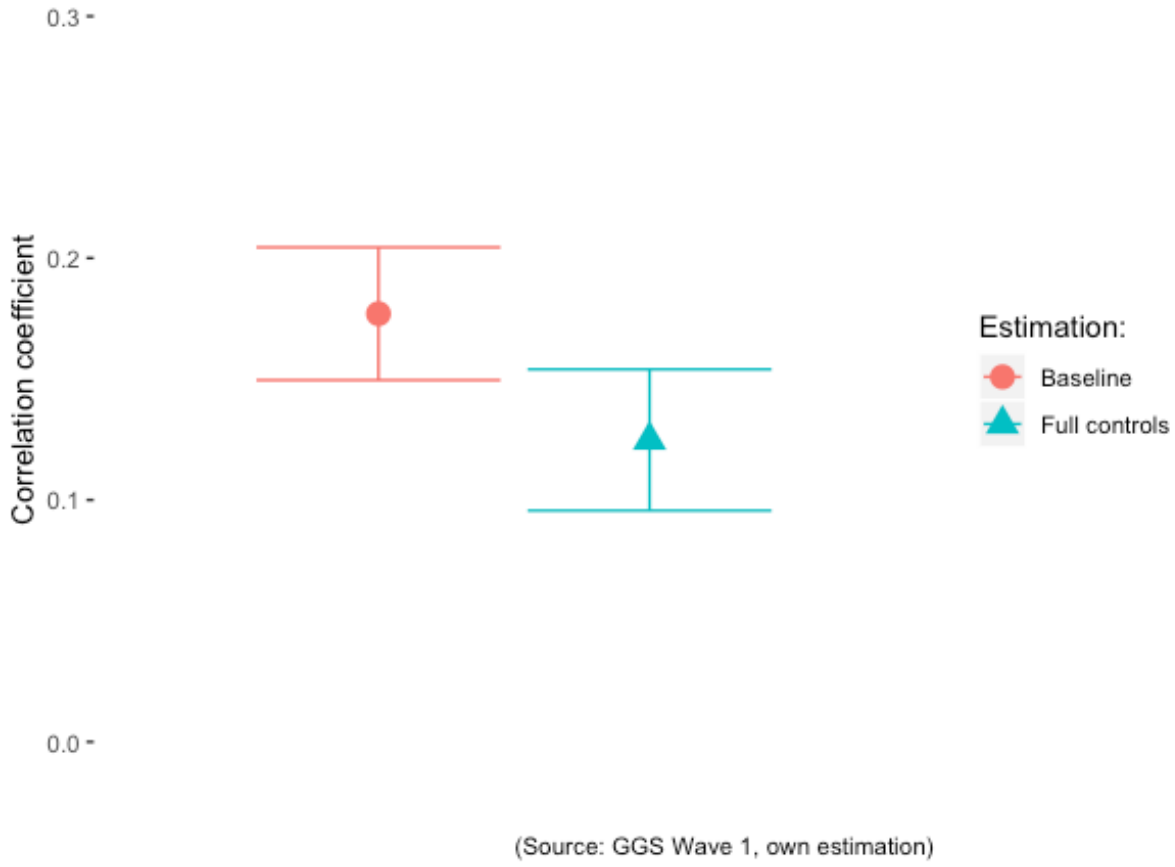


Figure 2.2 – Correlation between marriage and moving intentions

We observe different magnitudes of correlation point estimates between genders. Even if the correlation between marriage and moving intentions remains present in the analyses focusing on female and male subsamples in Figure 2.3. For women, the correlation between the error terms is 0.244. For men, the correlation between the error terms is 0.149. This shows a considerable 10 per cent difference between genders. The difference is reiterated in the estimation with full controls. The correlations between intentions to marry and move for women and men are 0.207 and 0.137 respectively indicating a remaining difference of 7 per

cent between women and men. However, these differences between genders are only indicative of possible direction, but not significant. These results stand against hypothesis 4.

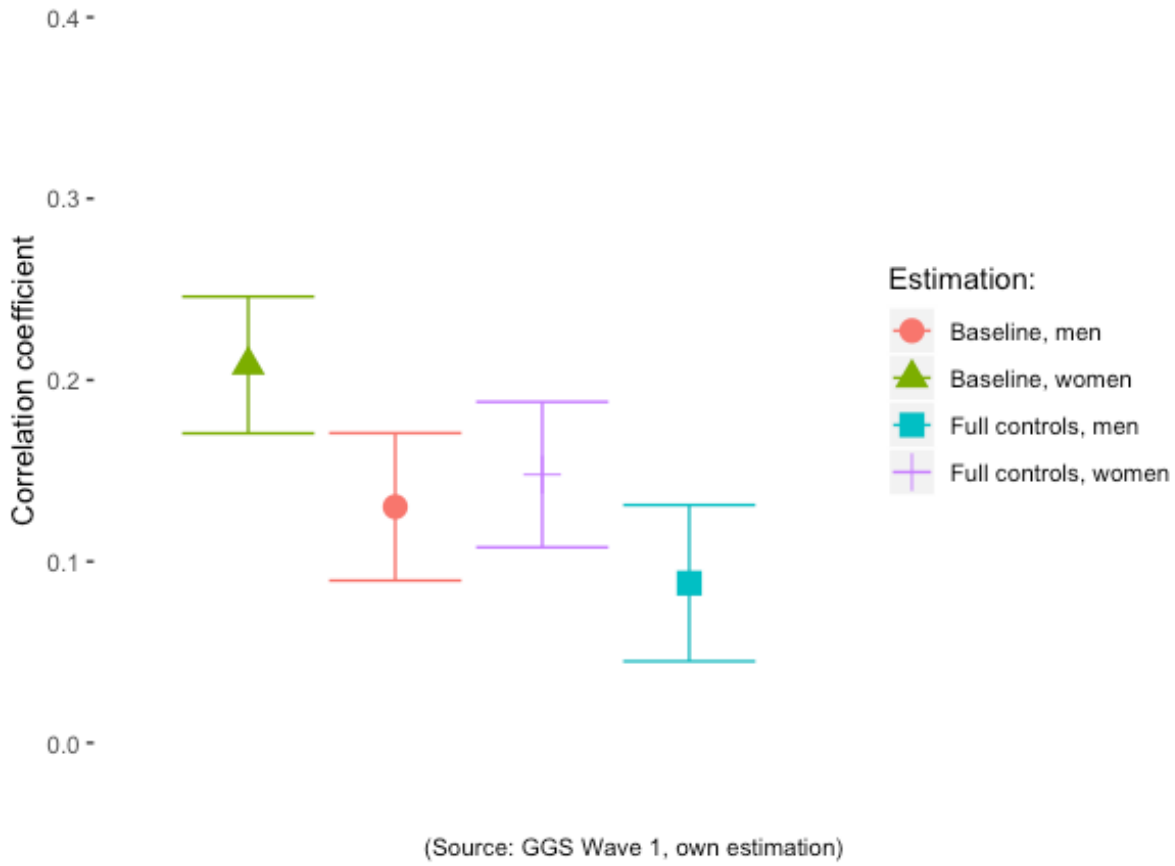


Figure 2.3 – Gendered correlation between marriage and moving intentions

The findings show that including individual education as a moderator has no effect on the positive association between marriage and moving intentions (Figure 2.4). In addition, controlling for education does not provide any significant evidence that education weakens the connection between marriage and moving.

(Source: GGS Wave 1, own estimation)

Figure 2.4 – Correlation between marriage and moving intentions, full controls and full controls including education

In general, the results show that there is a positive association between intentions to marry and move. The association is not affected by inclusion of controls, nor division into gender specific samples.

Seemingly unrelated bivariate ordered probit estimation for fertility and moving intentions

In this section, we present the estimations for fertility and moving intentions. Figure 2.5 reports both baseline and the estimation with controls for age, age squared, gender, father's education, and partnership status (for detailed estimation results see Appendix B, Table 3*)*. In the baseline model estimations the correlation between the error terms of fertility and moving intensions equates to 0.1777.

Taking into account individual socioeconomic factors matter when analysing fertility intentions, we include individual highest education as a control (Billari et al., 2009). Having

children is known to have an effect on future spatial mobility (Vidal et al., 2017) and fertility intentions (Schoen et al., 1999) while partnership status can affect both fertility and moving intentions. That is why these controls are included in our estimation and reported in Figure 2.5. In baseline estimation will full controls the correlation between intentions to have a child and move is 0.125. Even if correlation estimation in base line and full controls models are not significantly different as seen from Figure 2.5, our findings verify that there is a positive connection between fertility and moving intentions as hypothesised.

Figure 2.5 – Correlation between fertility and moving intentions

The positive relationship between fertility and moving intentions holds in specifications used for separate female and male subsamples as reported in Figure 2.6. In the baseline the correlation between the error terms is 0.207 for women and 0.127 for men. Including all covariates the correlations between intentions to marry and move for women and men are estimated at 0.148 and 0.0849 respectively. The differences in correlation point estimates between women and men are not significant.

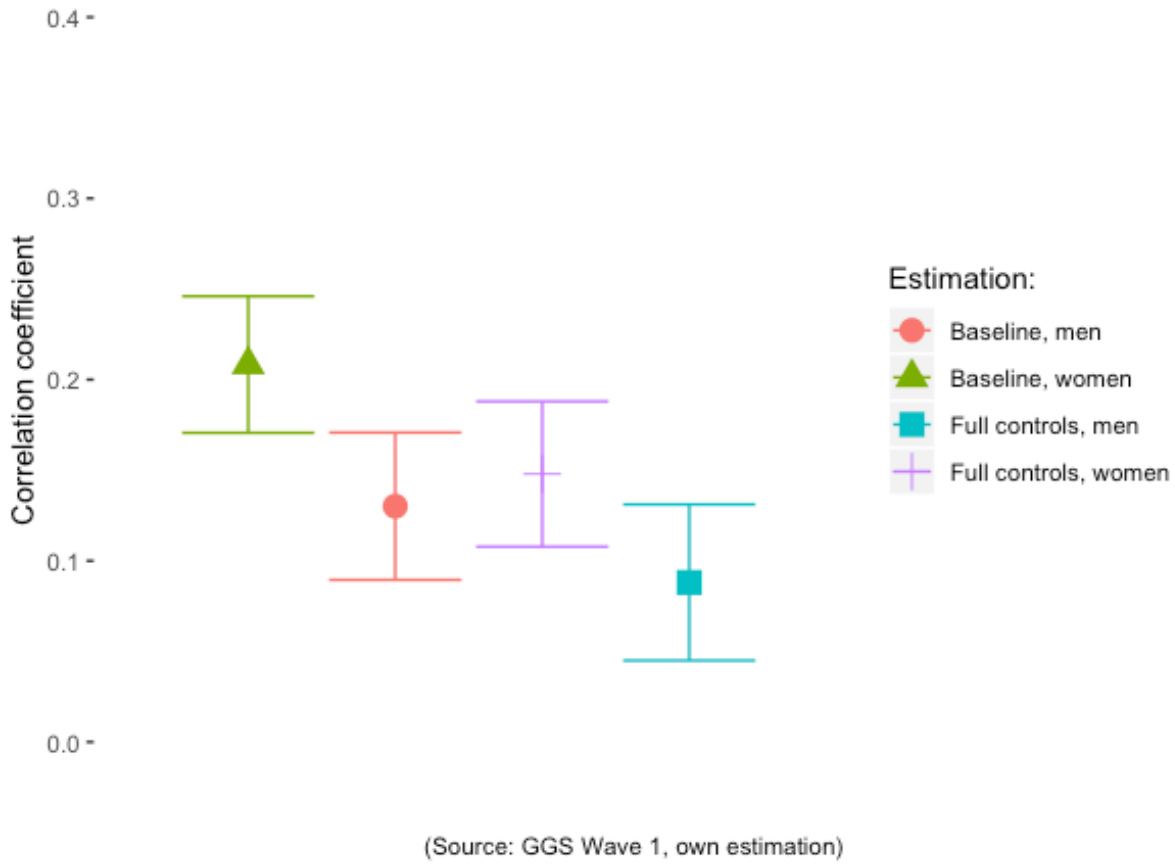
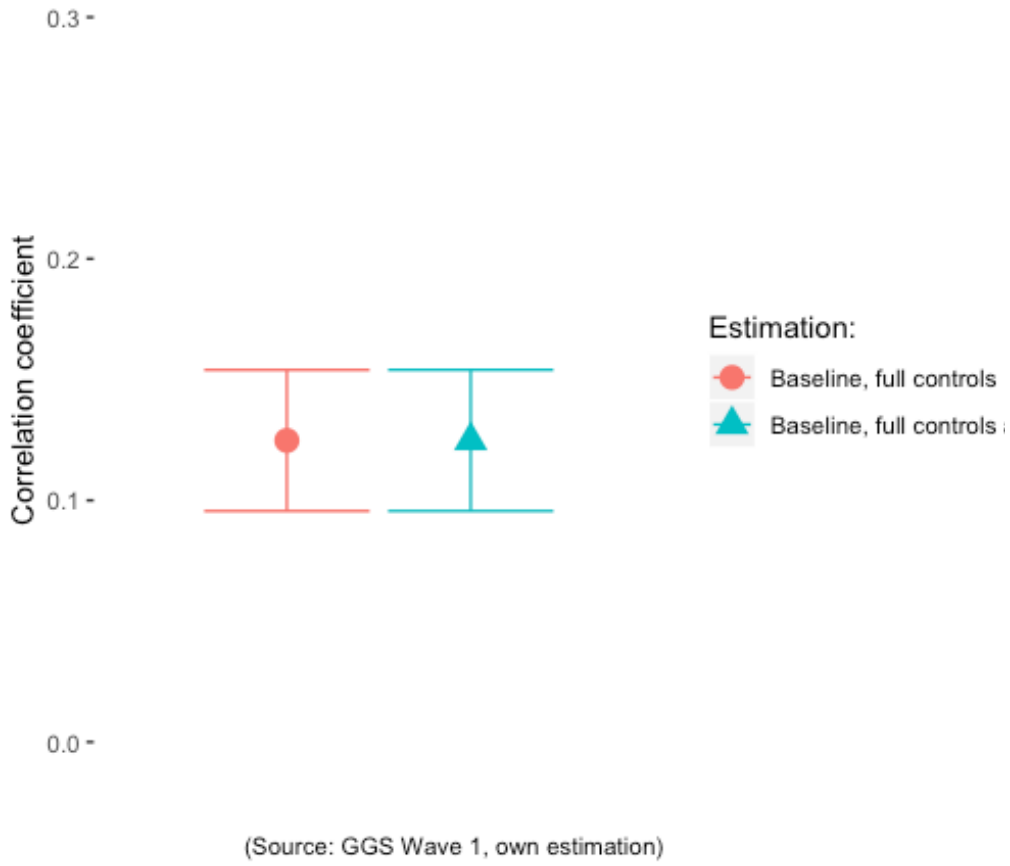


Figure 2.6 – Gendered correlation between fertility and moving intentions

We observe a persistent positive association between fertility and moving intentions (Figure 2.7). Including individual education does not indicate any difference between full-controls estimation and estimation with education as moderator neither in point estimates, nor in statistical difference. Logically, we cannot claim that education weakens the connection between fertility and spatial mobility.



(Source: GGS Wave 1, own estimation)

Figure 2.7 – Correlation between fertility and moving intentions, full controls and full controls including education

Overall, the results that we obtain establish a positive relationship between intentions to move and intentions to have children across different estimations. The positive relationship between fertility and spatial mobility intentions holds in specifications used for the baseline sample and separate female and male subsamples controlling for age, age squared, gender, and father's education as well as individual education, number of previous children, and partnership status. Yet we find no strong evidence of gendered connection between fertility and spatial mobility, nor we see this connection change when individual education is included.

2.6 Conclusions

In the paper we sought to investigate the connection between life course event intentions of marriage, childbearing, and moving in Central and Eastern Europe. Using the individual level data from the Generations and Gender Survey wave 1 we found positive correlations between

family formation and moving intentions. The results hold robust across different estimations for the general sample as well as female and male subsamples. In particular, we find a positive association between intentions to marry and move which stands in line with previous findings in the field (e.g. Mulder and Wagner, 1993). We too establish a positive connection between intentions to have children and move that is consistent with other literature (e.g. Kulu and Milewski, 2007). Our contribution, however is two-fold. First, we hypothesised that family formation and spatial mobility may be connected in the life course. There were five postulated mechanisms through which marriage-spatial mobility and fertility-spatial mobility events may interact. The findings are consistent with the first hypothesis: marriage and spatial mobility well as fertility and spatial mobility are interrelated life course events. Second, we applied the theoretical framework to isolate the unique connection between family formation and spatial mobility.

There are notable limitations of the study that provide avenue for further research. The lack of detailed follow-up data on fulfilled marital, fertility, and moving intentions in the sample restrict causational inference. Therefore, the extent to which it is possible to identify mechanisms that stand behind the connections between marriage-spatial mobility and fertility-spatial mobility in the life-course is limited. Moreover, dichotomisation of dependent intention variables strips data of variation, future explorations of categorical dependent variables could provide a more nuanced picture of the relationship we find. We do not explicitly treat the distance of moving as an object of our study due to data limitations. It is a challenge to perform a meaningful analysis which could differentiate between long and short distance moves as only in one country out of the sample of five intention to move coincides with international migration intention. In remaining four countries destinations of intended migration are within the country and municipality. However, further examination of the role the distance of move plays in the association would clarify the picture. Lastly, in the event of international migration, there is no data that would allow to track whether individuals fulfil the initial intentions abroad, therefore the study can be set in the context of spatial mobility rather than migration.

Largely, the findings suggest that spatial mobility, marriage, and fertility go hand-in-hand. Joint family formation and moving events could indicate that marriage and childbearing take place after spatial mobility or vice versa. Our findings can have implications in the context of internal migration. This could hint to the broader processes of depopulation within the subnational regions of countries in CEE.

Chapter 3. Patterns of subjective well-being (dis-)advantages in Belarus: the intersectionality of partnership, parenthood, gender and migration

Belarus has been subjected to an extensive social change due to the transition from socialist planned economy to the market economy in 1990s. Belarus' subsequent socioeconomic and political stagnation has created a unique environment in which family plays a significant role in providing well-being. Using the intersectionality approach, the paper focuses on the associations, marriage, partnership, childbearing and categories of (dis-)advantage (gender and early life migration) have with subjective well-being. We use Generations and Gender Survey 2020 data for Belarus and run ordinal logistic regressions with interaction terms between respective family statuses, migration experience and gender to estimate their connection to subjective well-being outcomes (life satisfaction, depression and loneliness). Our findings suggest that a combination of family factors and categories of (dis-)advantage are linked to subjective well-being outcomes more significantly than separate determinants. We also find that migrant women's subjective well-being is sensitive to family statuses and educational gradient.

3.1 Introduction

Belarus can be portrayed as a country of relatively low happiness. Indeed, Belarus and many other Eastern European countries score poorly in the World Happiness Report (Helliwell et al., 2020). The socialist rule that had dominated the region for a large part of the 20th century had raised goals to bring economic development, education, health, and equality up to the Western standards and beyond. Countries in the region had industrialised rapidly, reduced mortality, and inequality as well as bolstered education. Yet living standards of Eastern Europeans remained below those of Northwest Europe and North America. The wave of unprecedented economic and societal changes flooded Eastern Europe after the dissolution of the USSR in 1991. The transformation was fundamental in terms of replacing state socialist regimes with political and economic institutions of capitalism such as free elections and adoption of market economies (Thornton and Philipov, 2009). These elements can be seen as the root cause of other social changes that followed (Frejka, 2008). For Eastern European elites as well as for many ordinary people Western Europe has provided a political, economic, and social reference point of modern and developed societies that needs to be achieved at home (Krasnodębski, 2003).

Institutional and societal mechanisms contextualise not only economic development, but happiness as well. Institutions and policies heavily contribute to individual subjective-

wellbeing. For instance, accessible health services, transportation, quality food, and housing are linked to mental health (Lynch et al., 2000; Heflin and Iceland, 2009). Inequality makes people less happy and places them at a higher risk of developing mental illness. Access to material goods and public services including healthcare is not necessarily universal or equally available either. More generally, the way resources are distributed is socially determined, it may affect certain social or ethnic groups more than others and have severe effects on their health status (Marmot, 2005).

It is important to note that not all Central and Eastern European countries have approached Western Europe as a blue-print for societal development. Democracy and individual rights have been rejected in some parts of the region like Russia and Belarus (Thornton and Philipov, 2009). In this paper we investigate the intersectionality between partnership, parenthood, gender, and migration and its link to subjective well-being in Belarus. Belarus provides a complex case study. After the dissolution of the USSR in 1991, the population of Belarus shrank in the first decades of its independence reaching 9.5 million inhabitants in 2019 (Avdeev et al., 2011; United Nations, 2020). Belarus is often called the only remaining authoritarian regime in Europe ranking 150th out of 167 countries in the Democracy Index 2019 (Economist Intelligence Unit, 2020). Its president Alexander Lukashenko has been in power since 1994, his rule has been characterised by gradually eroded civil rights and a clamp-down on free and independent press (Reporters Without Borders, 2020). The Great Recession has hit Belarus hard resulting in a lasting economic contraction. In 2019, the GDP per capita of Belarus has amounted to $6,663 making it one of the poorest countries in Europe (World Bank, 2020). In turn, marginal economic expansion has resulted in limited public sector funding. For instance, Belarus' total expenditure on health as percentage of the GDP constituted only 5.7%[4] as contrasted to 9.9% average in the EU[5] (World Health Organisation, 2020; Eurostat, 2020e). Other social factors such as income inequality are considerable between urban and rural areas (Mazol, 2016). The richest districts are clustered around the capital and few other urban centres. Lastly, the healthcare system in Belarus has preserved characteristics of its Soviet predecessor (Richardson et al., 2013). Among other things this means limited resources allocated through both staff and facilities not excluding wellbeing and mental health (Petrea and Haggenburg, 2014). The country has also experienced

[4] 2014
[5] 2016

decreasing fertility rates. From the close to replacement rate in late 1980s Belarus has hit low fertility in in the 1990s. In 2019, the total fertility rate has reached 1.71 and is expected to fluctuate around 1.7 in the foreseeable future (United Nations, 2019a, United Nations, 2019b). The low fertility is strongly associated with the family model followed in the country. A small family with a single child has become a norm in the Belarusian society (Perelli-Harris, 2005; Amialchuk et al., 2014). Although single parenthood and cohabitation have gained more acceptance, marriage has remained the dominant pathway to family formation (Tikhonova, 2004; Thornton and Philipov, 2009).

Having acknowledged the importance of institutional and individual determinants of well-being, Belarus provides a unique opportunity to explore the link between partnership, parenthood, and well-being. Virtually an outlier in the context of globally rich and democratic Europe, Belarus marries institutional backwardness at macro level and individual reliance at family at micro level. Previous studies have investigated differences in well-being effects from marriage, cohabitation, and parenthood, but only did so by looking at linear relationships between the cause and outcome. The literature has predominantly agreed that there exists a positive association between marriage and well-being (Carr and Springer, 2010; Chen and van Ours, 2018). The findings are more blurred among the studies examining the link between cohabitation and well-being (Wright and Brown, 2017; Kohn and Averett, 2014). In a similar spirit, childbearing has been found to either contribute to a higher individual well-being (Aassve et al., 2012; Myrskylä and Margolis, 2014) or reduce it (Hansen, 2012). To the best of our knowledge, we are the first to apply intersectionality approach to investigate the association between family formation and subjective well-being. The intersectionality approach acknowledges that the categories and concepts used in analytical work are socially constructed and can mutually interact and modify each other (Sigle, 2016). Therefore, the association between partnership, marriage, parenthood, and subjective well-being is not assumed to have additive nature where each individual family formation event either increases or reduces subjective well-being. The association is seen holistically and recognises that privilege and penalty can be experienced simultaneously divorcing from binary thinking which places groups in opposition (e.g. women versus men, married versus non-married, parents versus childless etc.) (Hankivsky, 2012). The approach draws attention at multidimensional reality of human lives and permits seeing determinants of well-being as an interaction.

Our study exploits the first wave of Generation and Gender Survey 2020 data on life-course, family formation, and subjective well-being measures. The data allows us to investigate different patterns of life-course by looking at cohabitation, marriage, and childbearing as wee as its links to subjective well-being.

3.2 Conceptual background

Happiness and subjective well-being in life-course

In the scholarly literature, happiness has often been seen in terms of subjective well-being. Subjective well-being comprises components like life satisfaction, high levels of positive hedonic affect, and low levels of negative affect. These three components of subjective well-being are a result of a cognitive evaluation of individual's life and accumulation of positive and negative emotions and experiences over time (Diener et al.,1999; Diener et al., 2010). In the life-course individuals strive to achieve higher levels of subjective well-being (Huinink and Kohli, 2014). Subjective well-being has physical-material, psychological, and social dimensions which can be manifested through health and economic welfare, emotional gratification, social approval, and others (Lindenberg, 2001).

Many of these aspects relevant to (long term) subjective well-being are defined early in life-course (Galambos et al., 2020). The principle primarily applies to education. Individuals start accumulating education very early in life and experience the outcomes throughout their life. Educated individuals are more likely to be satisfied with their life (del Mar Salinas-Jiménez et al., 2011; Ilies et al., 2019) and less depressed (Ross and Mirowsky, 2006). Indeed, education operates as a substantial enhancer of life quality. Lower education is associated to higher chances of depression and anxiety while higher education provides individuals with better mental health and more happiness (Andrews et al., 2001; Bjelland et al., 2008).

A considerable body of research has looked at the connection between marriage and subjective well-being (Nelson-Coffey, 2018). The studies have listed several benefits that married partners obtain from the relationship among which are sexual and emotional intimacy, companionship, and day-to-day interaction which also helps to cope with stress (Kamp Dush and Amato, 2005; Umberson et al., 2010). Moreover, in marriage partner provided recognition

may offer some meaning in life (Umberson et al., 2010). There is evidence that cohabitation and marriage are linked to different levels of subjective well-being. Couples may invest different levels of tangible and intangible capital (Michael, 2004) in different types of partnership (Nock, 1995), and thus the subjective well-being arising from cohabitation and marriage may be different. Family formation has considerable benefits for adult subjective-wellbeing. Families provide essential social support to develop and share emotionally straining aspects of life. It is know that married people have more life satisfaction and better mental health than divorcees or singles (Uecker, 2012). Marriage provides socioeconomic and relationship stability which translates to psychological benefits. Married people feel more grounded and enjoy social approval which makes it a safe setting to have children, especially in more conservative contexts.

Parenthood is a phenomenon that usually takes place relatively early in life-course. However, having children in younger ages is associated to a lower life satisfaction and consequential mental health loss. Parenthood brings about a strain to balance family and work lives for young parents. Yet, in later ages parents may benefit from children's gratitude and experience a sense of meaning arising from parenthood that can be linked to higher life satisfaction and lower depression chances (Evenson and Simon, 2005). In general, fertility can be approached as an instrument for increasing subjective-wellbeing (Huinink and Kohli, 2014).

The association between family formation and well-being could originate from the link partnership and childbearing have with happiness. Though, the positive association could arise due to selection where content individuals are more likely to form a partnership (Stutzer and Frey, 2006) and have children (Kim and Hicks, 2016). There are several reasons the relationship exists. First, partnerships offer production complementarity benefits in terms of labour specialisation and division (Becker, 1974; Becker, 1981). Partnered individuals can share effort in remunerated labour, housework, and childrearing. Second, partnerships allow individuals to use resources jointly, making it easier to invest into children (Lundberg and Pollak, 2015). Third, partnerships and parenthood expand social relationships. Together with immediate social benefits received from a partner and children, individuals obtain support from a partner's social network (Kamp Dush and Amato, 2005). Largely, relationships, whether in parenthood or partnership, are vital to feeling affection and social approval, therefore they contribute to subjective well-being (Tomasello, 2009).

Studies looking at subjective well-being in Eastern Europe have found that being married or having a partner has a stronger negative association to depressive feelings in Eastern Europe than in Western Europe (Moor and Komter, 2012.). This is strongly related to the "kinship culture" in Eastern Europe that relies on family for welfare provision (Viazzo, 2010). In connection, Eastern European countries childlessness and having one compared with two children have been found to be associated with more depressive symptoms (Grundy et al., 2019). For example in Russia, parenthood has been estimated to have a positive contribution to life satisfaction that remains present through the life-course (Mikucka, 2016).

Gendered differences

There are multiple studies that have explored the gendered differences of the link between marriage, cohabitation, parenthood, and subjective well-being. Some evidence suggests that men and women seem to be affected similarly by marital statuses and transitions (Williams, 2003; Kalmijn, 2017). However, the connection between marriage and subjective well-being is nuanced. Previous work has proposed that marriage delivers greater social recognition and support for men, thus improving their subjective well-being (Ross et al., 1990). For women marriage could provide higher economic standards and legal protection that translates into a sense of safety that is important when raising children (Waite 1995). Women are also more likely to feel satisfaction deriving from the wedding than men (Berrignton et al., 2015).

There is no conclusive evidence whether marriage and cohabitation provide analogous well-being outcomes for all genders (Perelli-Harris et al., 2019). In some cases, married and cohabiting men obtain similar well-being benefits in comparison to dating and single men, however no well-being gains are observed among women of different partnership statuses (Wright and Brown, 2017). Among older married women the depressive tendencies are identical to cohabiting women and men, but the tendencies are more pronounced than those of married men (Brown et al., 2005). Among young adults marriage equally benefits both men and women, however cohabitation adds to women's well-being only (Mernitz and Kamp Dush, 2016). The well-being difference between marriage and cohabitation may hold because the former is often seen as a trial for marriage. Cohabiting partners may invest less in their relationship than married couples (Michael, 2004; Soons et al., 2009). Also, cohabitation is more often disrupted and has lower expected stability than marriage. Thus the dissolution of cohabitation may affect well-being less than divorce (Kamp Dush, 2013).

Evidence suggests that gendered differences exist in parenthood and subjective well-being. Parenthood is more strongly associated with greater well-being for fathers than for mothers (Kohler et al., 2005; Keizer et al., 2010). These differences develop together with parity. Although both women and men benefit from having children, men receive more satisfaction to have a second and third child (Pollmann-Schult, 2014). Nevertheless, in some settings fathers have been found to be happier than childless men, but mothers' happiness does not change in comparison to women without children (Neslon et al., 2013). One explanation for these disparities arises from the difference of interaction fathers and mothers have with their children (Nelson-Coffey, 2018). Women spend more time with their children, including the time they spend taking care of the children alone whilst fathers are more likely to play with their children (Musick et al., 2016). In terms of parental well-being, play has been associated to the highest levels of well-being; in comparison basic childcare and solo parenting are linked to low levels of well-being (Musick et al., 2016). Other work provides an alternative path to explaining mothers' lower levels of well-being. Mothers have been found to experience a more intense sense of guilt when combining labour enrolment and childrearing which in turn reduces their subjective well-being (Borelli et al., 2017).

In Eastern Europe, gendered differences with respect to the association between family formation and subjective well-being have also been identified. It has been established that living in a society with traditional gender beliefs that characterise Eastern Europe benefits female happiness to be married. However, cohabitation implies negative association to happiness for women. These associations do not hold for men (Lee and Ono, 2012). In general, mothers in Eastern Europe have been found less happy than in Western Europe (Aassve et al., 2012). In particular, some results suggest a positive contribution to subjective well-being of mothers by the birth of a first child in Poland. For men, this association is weaker and likely temporary as it declines with age of the child (Baranowska and Matysiak, 2011).

Well-being of migrants

International and internal migration is an age-selective phenomenon. The propensity to migrate usually peaks at young adult ages then declines with age occasionally increasing among children and at the age of retirement (Bernard et al., 2014). Selection into migration is highly connected to life-course transitions. Leaving education and joining the labour force (Kulu and

Billari, 2004), union formation (Mulder and Wagner, 1993), and childbirth (Kulu, 2008) are closely linked to migration . These life-course events are concentrated in young age which in turn make migration a young age event.

Migration decision making is often linked to labour mobility. In this strand of literature cost-benefit approach to migration dominates. Migrants are thought to move in order to maximise their income which is directly linked to well-being (van Ham, 2002). In families, migration decision-making is connected to opportunity costs for both partners. Partners evaluate potentially unequal gains and losses to see whether the joint outcome benefits the family before making a decision to move (Cooke, 2008). Another approach to migration treats the phenomenon as a determinant of well-being. Although the literature exploring the connection between well-being and migration is arguably limited in size, it makes a clear contribution. Migration is a stressful event and people migrate for multiple reasons. Most individuals experience a temporary increase in their quality of life and happiness through changing their place of residence (Nowok et al., 2013). Due to its complexity, migration affects many domains of life regardless the moving motivation and these effects can be either positive or negative. It is agreed that migrant-local happiness gap exists even if migration occurs in the same country (Aksel et al., 2007; Cheng et al., 2014).

There are many reasons why individuals and families decide to migrate, however the desire for better life connects them all. The studies looking at the link between early life migration and well-being focus on educational outcomes and emotional well-being. Early childhood migration especially can be associated to long-term outcomes. In migrant families motherly support and fatherly involvement in children's lives are significant to educational attainment (Hagan et al., 1996). Having experienced migration at an earlier age may also be an indication of parents' attempt to improve the well-being of the family.

In Eastern Europe, particularly in the countries of the Commonwealth of Independent States such as Belarus, Russia, and Ukraine international migration is a relatively recent phenomenon. Lately, migration has been associated to higher happiness for Eastern European migrants. For instance international migrants from Russia have been found to be happier than stayers (Bartram, 2013). On the other hand, internal migration has been present for decades and date back to the Soviet era. Internal migration in the USSR had largely remained undocumented due to a tendency to have a residential registration in a place different from the actual residence which was connected to public mistrust towards authorities (Arel, 2002).

Although it is challenging to extrapolate what practical implications discrepancy between actual and legal residency had for a Soviet citizen, it is difficult to imply the consequences were null.

Intersectionality approach to subjective well-being in Belarus

Intersectionality is a concept that developed in response to overly simplistic portrayal of women and their real life experiences in the Anglo-Saxon social science tradition. Intersectionality brought the subjectivity of women who live at the intersections of gender, race, class, and sexual orientation constructed discrimination to the attention of researchers (Hancock, 2007). The primary idea of this focus is inclusion of previously ignored and excluded populations into existing analytical frameworks in social sciences. For example in life-course studies intersectionality allows for a holistic examination of differences in motherhood and employment through the lens of ethnic differential. Sigle-Rushton and Perrons (2006) have shown that employment rates of mothers with young children in ethnic communities are different across educational groups. Intersectionality also acknowledges the co-existence of the wider social and economic context and individual level heterogeneity within any specific setting (Bose, 2012). Social scientists and policy makers have recognised the importance of race, ethnicity, class, income, education, ability, age, sexual orientation, migration status as well as geography and increasingly treat these categories as determinants of structural disadvantage (Hankivsky, 2012). Intersectionality divorces from single-category analyses that focus on gender, race or class exclusively and moves to consider simultaneous interactions between different aspect of socially constructed identity and systems of oppression (Hankivsky et al., 2009). This approach does not estimate the additive impact of gender, race, and other binary variables as the sum of separate influences, but seeks to show the multidimensionality of human life and takes into account social processes at both micro and macro levels (Dhamoon and Hankivsky, 2011). Research that applied intersectionality in the context of Eastern Europe is limited in number. Yet the existing work has predominantly focused on the transition to market based economies and gender equality in the region (Krizsan, 2012; Krizsan and Zentai, 2012).

Previously we have reviewed the literature examining the differentials in partnership, parenthood, educational, migratory statuses, and gender with respect to subjective well-being. These categories have been widely used in applications of intersectionality approach in social

sciences. In addition, institutional setting as well as geo-political location have been admitted to merit consideration when looking at the patterns of disadvantage (Sigle 2016). Although Belarus does not have all the categories, namely race, that are weighed when applying the intersectionality approach, a large proportion of population in Belarus has experienced migration at a point in their lives (Belstat, 2020). For the purpose of this research, migration and gender will be treated as the main categories of disadvantage. Overall, Belarus serves as an excellent case study to analyse the complexity of early life course events, their consequential (dis-)advantages, and the link to subjective well-being.

3.3 Data, measures, and analytical strategy

We are among the first to make use of the Generations and Gender Survey 2020 (GGS2020), which is part of the Generations and Gender Program (GGP). The GGS is a panel survey of an 18-79 year-old resident population, which is held in a number of European countries. It aims to survey nationally representative samples of the population. The GGS have information on the most important societal aspects of demographic choices in contemporary, developed societies, focusing on the processes of childbearing, partnership dynamics, home leaving, and retirement. GGS2020 has been carried out in Belarus in 2017 following face-to-face interview procedure to generate a sample of 9994 respondents. We limit our sample to the respondents aged 18 to 61 (working age population) to focus the analysis on the part of the population that is more prone to partnership formation, childbearing or childrearing and may experience different subjective well-being outcomes due to these factors as well as their gender and migratory status.

There are three focal outcomes that we use to measure subjective well-being. We use life satisfaction (coded 0=not at all satisfied; 10 = completely satisfied), the short form of the Center for Epidemiological Studies Depression Scale (CES-D-SF) (coded 0 = no depressive symptoms if CES-D-SF≤ 6; 1=depressive symptoms if CES-D-SF>6), and the loneliness index constructed from the six-item De Jong Gierveld Loneliness Scale (coded 0=no loneliness; 6=severe loneliness) (Radloff, 1977; Cole et al., 2004; Gierveld and Tilburg, 2006).

We include standard control variables to address unobserved heterogeneity that are age (in years), gender (coded 1=male; 0=female), migratory status (0= always lived in the same

region of Belarus; 1=moved to another region of Belarus before age 15), and religious affiliation (orthodox or catholic).

We also control for household size, total household net monthly income (range in the Belarusian ruble), and subjective health (1=very good; 5=very bad) that are important contextual variables of well-being (Diener et al., 1993; Steptoe et al., 2015). We use highest education achieved to see the differences in subjective well-being across socio-economic segments (Witter et al., 1984; Michalos, 2008). The highest education achieved is measured in ISCED 2011 and is specified as low (early childhood, primary and lower secondary education), middle (upper secondary and post-secondary non-tertiary education), and higher (bachelor, master and doctoral degrees or equivalent).

Finally, we also use interaction terms that capture the intersectionality between family status (cohabiting, but not married and married), the number of children, and the categories of disadvantage (gender and migratory status) (Hankivsky et al., 2009; Choo and Ferree, 2010). Descriptive statistics for all measures are shown in Table 3.1.

Table 3.1 – Descriptive statistics

Variable	N	Mean/Percent	St. Dev	Min	Max
Life satisfaction	7,866	7.641	1.786	0	10
Depression scale (CES-D-SF)	7,941	0.406	0.491	0	1
Loneliness index	7,919	3.028	0.842	0	6
Age	7,941	39.787	12.286	18	61
Age^2	7,941	1733.961	998.095	324	3721
Gender (1 = female)	7,941	0.527	0.499	0	1
Migrant (1=moved to another region of Belarus before age 15)	7,941	0.184	0.388	0	1
Orthodox	7,941	0.806	0.395	0	1
Catholic	7,941	0.064	0.245	0	1
Household size	7,941	2.838	1.348	1	12
Total household net monthly income (range)	5,632	4.375	1.802	1	8
Highest education achieved					
Low	1,742	0.219	0.413	0	1
Middle	3,524	0.443	0.496	0	1
Higher	2,675	0.336	0.472	0	1
Cohabiting	909	0.529	0.499	0	1
Married	5,524	0.835	0.37	0	1
Number of children	7,941	1.245	1.04	0	12
Cohabiting X Migrant	909	0.118	0.323	0	1
Cohabiting X Gender	909	0.248	0.432	0	1
Cohabiting X Migrant X Gender	909	0.0517	0.221	0	1
Married X Migrant	5,524	0.154	0.361	0	1
Married X Gender	5,524	0.403	0.49	0	1
Married X Migrant X Gender	5,524	0.074	0.262	0	1
Number of children X Migrant	7,941	0.232	0.664	0	8
Number of children X Gender	7,941	0.509	0.889	0	9
Number of children X Migrant X Gender	7,941	0.084	0.4	0	5
Migrant X Gender	7,941	0.079	0.271	0	1

To study how the explanatory variables affect our three measures of subjective well-being, we fit ordinal logistic regressions to the GGS2020 data. As the dependent variables are categorical, ordinal logistic regressions are preferred to logistic regressions or OLS estimation. We demonstrate exponentiated coefficients in the form of Odds Ratios, presenting the likelihood of a respective subjective well-being measure in relation to covariates. Each estimation is performed controlling for region fixed effects.

3.4 Results

Descriptive results

Table 3.2 reports the average subjective well-being measure scores (life satisfaction, depressive symptoms, and loneliness) across family statuses and categories of disadvantage. From the descriptive results we can see that there exists a difference between different forms of partnership (in union and married) and having children as well as between the categories of (dis-)advantage that refer to either migration experience or gender.

In terms of life satisfaction marriage indicates a higher level of life satisfaction for both migrants and women. The picture is a bit more mixed for people in union. Individuals who stayed in the region of their origin and live with their partners show more life satisfaction in comparison to both migrants and people who are not in union. However, women who cohabit are by far the most satisfied with their lives in comparison to non-cohabiters. Being a parent seems to only contribute to migrant life satisfaction, yet childless stayers and women are as much or even more satisfied with their lives.

Depressive symptoms are most prevalent among migrants and women. These symptoms are more pronounced for women, especially cohabiting women. Interestingly cohabiting women show stronger depressive symptoms than single, non-married women. The highest average depressive symptom score is that of childless women. Childless migrants even if the most depressed in comparison to other family types, are less depressed than childless women. Single non-married migrants are less depressed than migrants living in a union. Most often, loneliness seems to be an attribute of men and people with migratory experience. The highest score on the loneliness scale has been indicated by childless migrants and men. In these

two categories, the least lonely appear to be non-married migrants and men, while migrants and men in union are in the middle.

Having looked at the average scores of subjective well-being measures analysed in this paper, it is possible to say that patterns of disadvantage may exist within the measures i.e. migrants and men are consistently worse off in terms of loneliness while women and migrants suffer more from depression. These patterns vary when family and parenthood statuses are involved. However, the patterns are more mixed in terms of life satisfaction as there is no immediate indication of consistent disadvantage between migrants and stayers yet men seem to be satisfied with their life the least no matter their family status.

Table 3.2 – Average subjective well-being measure scores across family statuses and categories of (dis-)advantage

Life satisfaction

		Migrant	Stayer	Female	Male
		Yes	**No**	**Yes**	**No**
Cohabiting	**Yes**	7.484127	7.69	7.761733	7.506024
Cohabiting	**No**	7.56962	7.645604	7.631356	7.63285
Married	**Yes**	7.861498	7.839004	7.89903	7.787536
Married	**No**	7.517073	7.668848	7.701754	7.563596
Children	**Yes**	7.577447	7.559214	7.549219	7.583778
Children	**No**	7.453027	7.57677	7.604449	7.516196

Depression scale (CES-D-SF)

		Migrant	Stayer	Female	Male
		Yes	**No**	**Yes**	**No**
Cohabiting	**Yes**	0.484375	0.4243176	0.5107143	0.3585657
Cohabiting	**No**	0.4320988	0.4383562	0.4683544	0.4019139
Married	**Yes**	0.4008621	0.3444068	0.4119318	0.2993861
Married	**No**	0.4641148	0.4309896	0.4912959	0.3782609
Children	**Yes**	0.4524248	0.4100683	0.4775017	0.333223
Children	**No**	0.5030801	0.444004	0.5272206	0.4039781

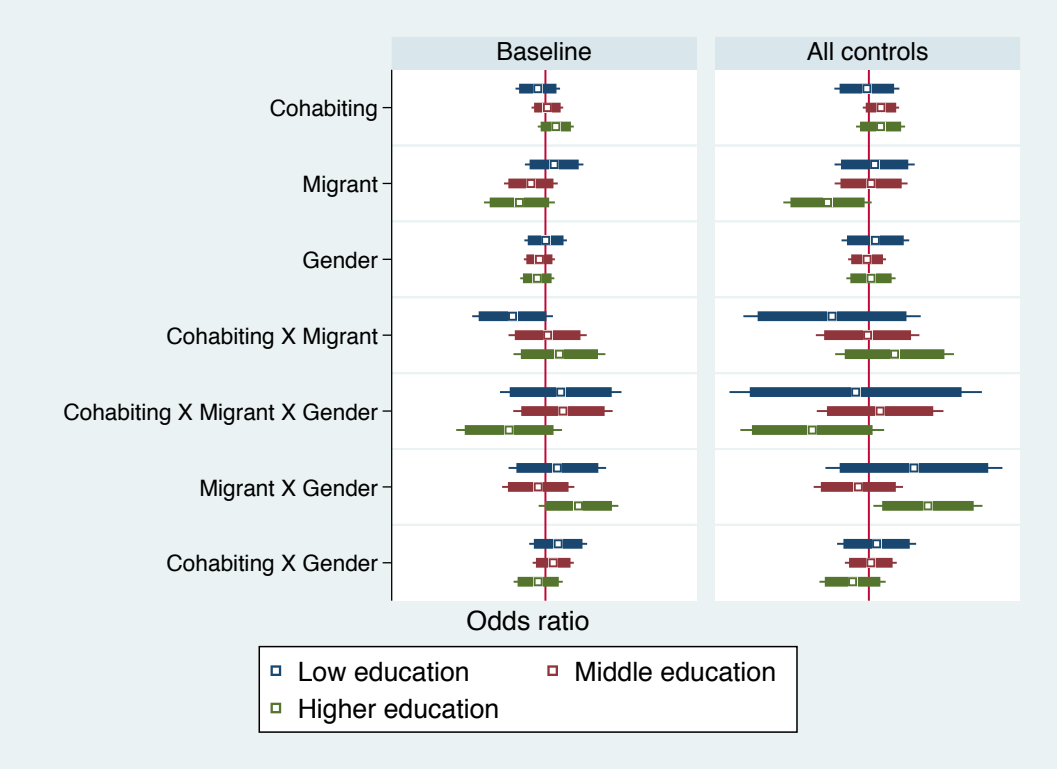
Loneliness scale

		Migrant	Stayer	Female	Male
		Yes	**No**	**Yes**	**No**
Cohabiting	**Yes**	3.0625	2.952854	2.975	2.984064
Cohabiting	**No**	3.139241	3.008264	2.949153	3.126214
Married	**Yes**	2.991334	2.95017	2.929106	2.988776
Married	**No**	3.091787	2.979112	2.963178	3.04814
Children	**Yes**	3.054938	3.019829	3.019295	3.039496
Children	**No**	3.1875	3.096374	3.087416	3.13292

Associations

Life satisfaction

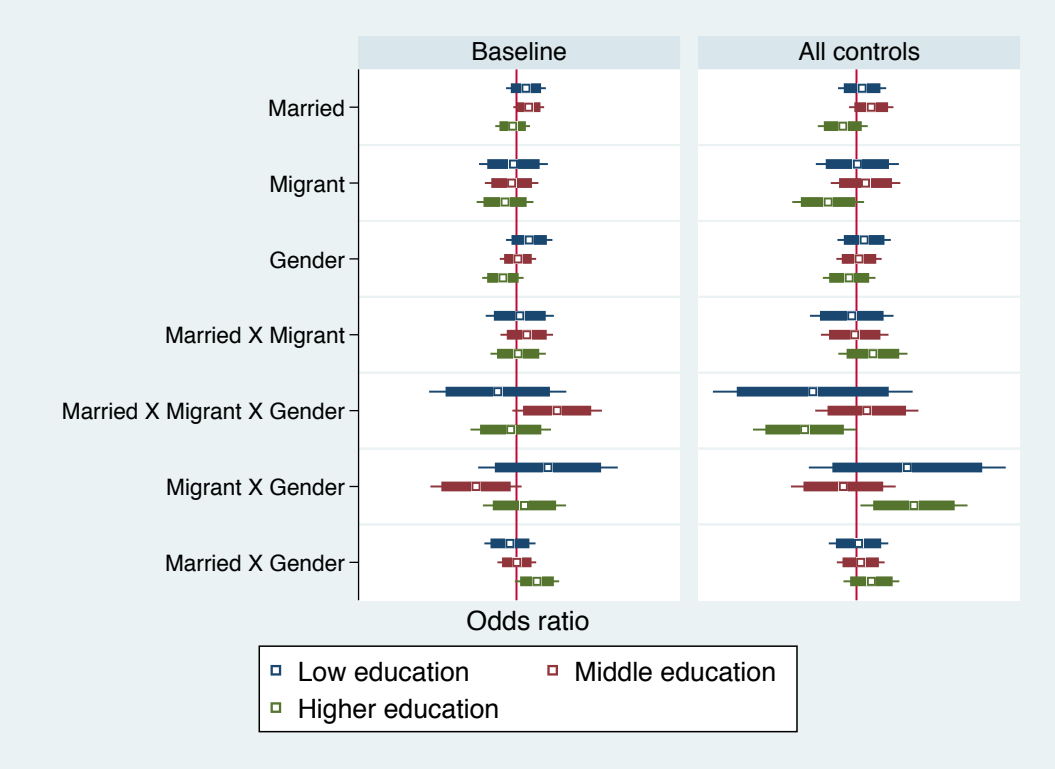
In Figure 3.1 (Table C.1 in Appendix) the estimation of life satisfaction of the cohabiting across different levels of education is presented. Importantly, having controlled for confounding factors, we can identify that the interaction between having a migratory experience and being a woman suggests a lower likelihood of life satisfaction among highly educated individuals.



Note: Ordered logistic regression, estimates are presented with 90%, 95%, 99% confidence intervals.

Figure 3.1 – Estimation of life satisfaction of the cohabiting across different levels of education

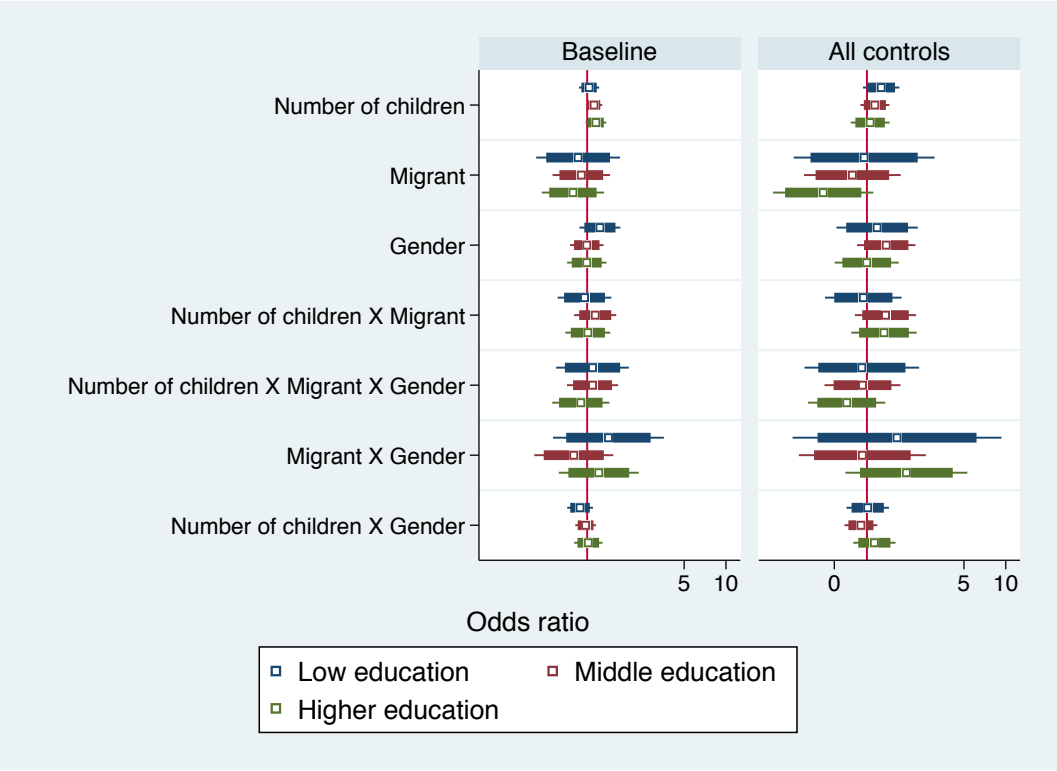
The baseline estimation in Figure 3.2 (Table C.2 in Appendix) reports significant associations between marriage and higher levels of life satisfaction for individuals with middle and higher education. A positive association to life satisfaction holds for women with a medium level of education who are married and had experienced migration in the past. On the other hand, highly educated married women with migration experience are less likely to be satisfied with their lives. This association holds robust to the inclusion of all controls.



Note: Ordered logistic regression, estimates are presented with 90%, 95%, 99% confidence intervals.

Figure 3.2 – Estimation of life satisfaction of the married across different levels of education

Figure 3.3 (Table C.3 in Appendix) shows the estimation of life satisfaction of parents across different levels of education. In the baseline model, the number of children is associated to overall higher life satisfaction for the medium and highly educated. The interaction term between the number of children and migration shows a positive association to life satisfaction for the highly educated when all confounding factors are accounted for.

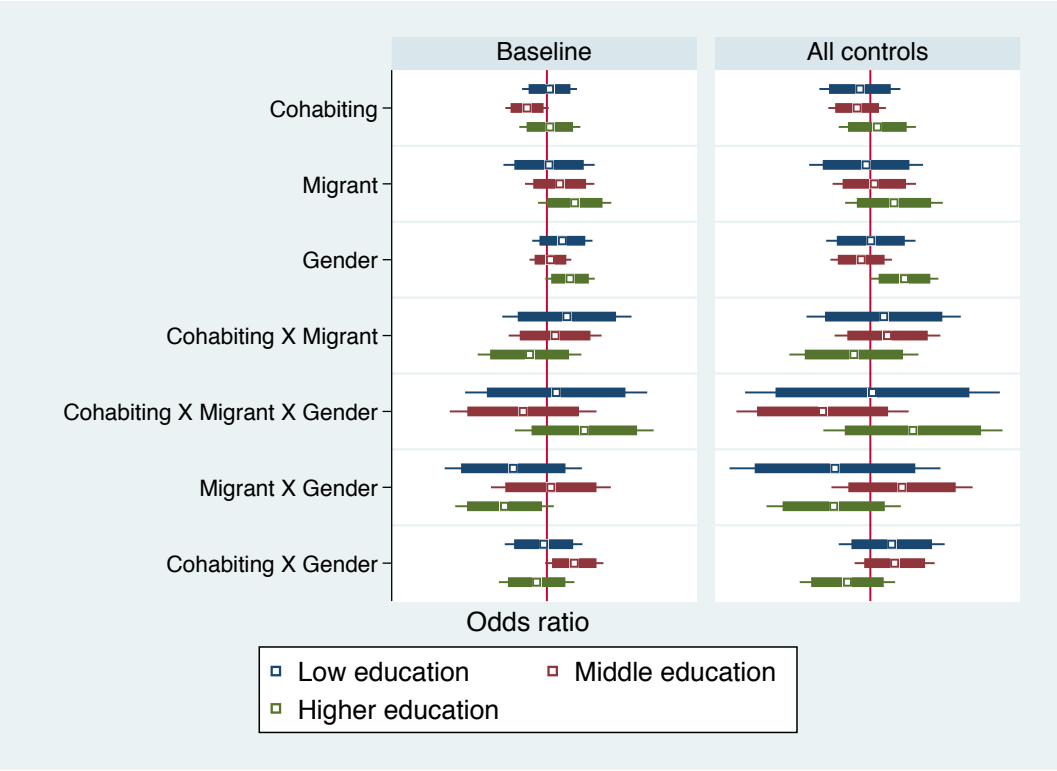


Note: Ordered logistic regression, estimates are presented with 90%, 95%, 99% confidence intervals.

Figure 3.3 – Estimation of life satisfaction of parents across different levels of education

Depressive symptoms

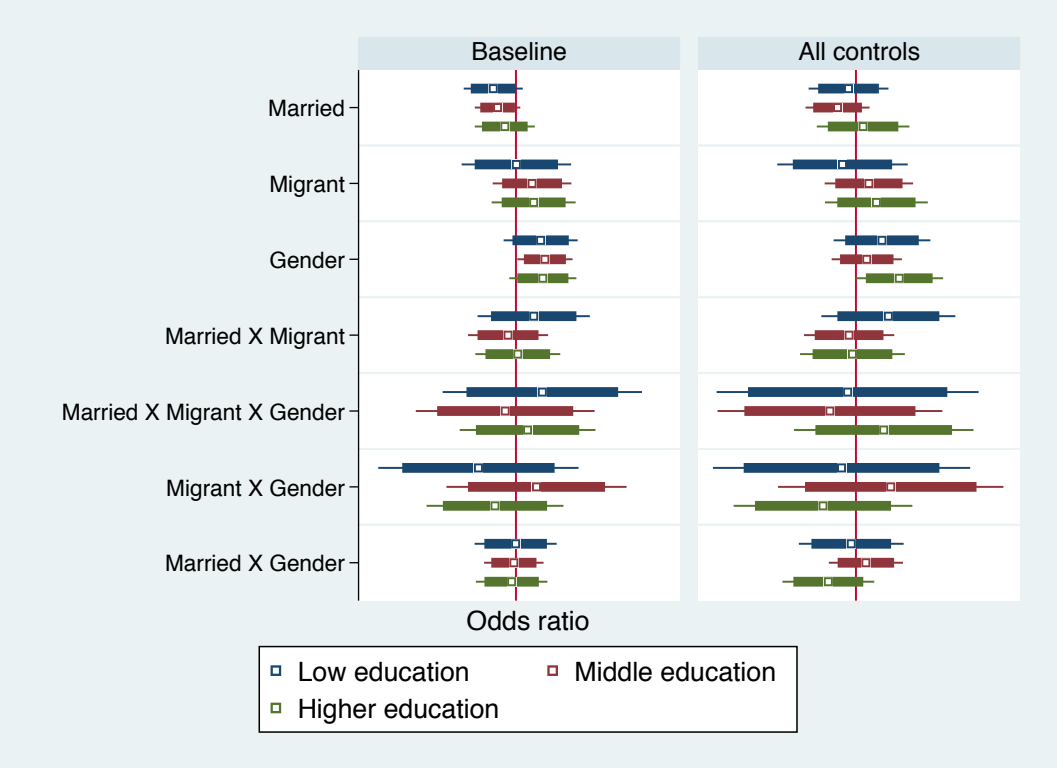
Figure 3.4 (Table C.4 in Appendix) outlines the estimation results of depressive symptoms of the cohabiting across different levels of education. The baseline model suggests cohabiting women with middle education are more likely to be depressed. Yet, women who had migrated before are not as likely to experience depression. These findings hold only for the baseline estimation.



Note: Ordered logistic regression, estimates are presented with 90%, 95%, 99% confidence intervals.

Figure 3.4 – Estimation of depressive symptoms of the cohabiting across different levels of education

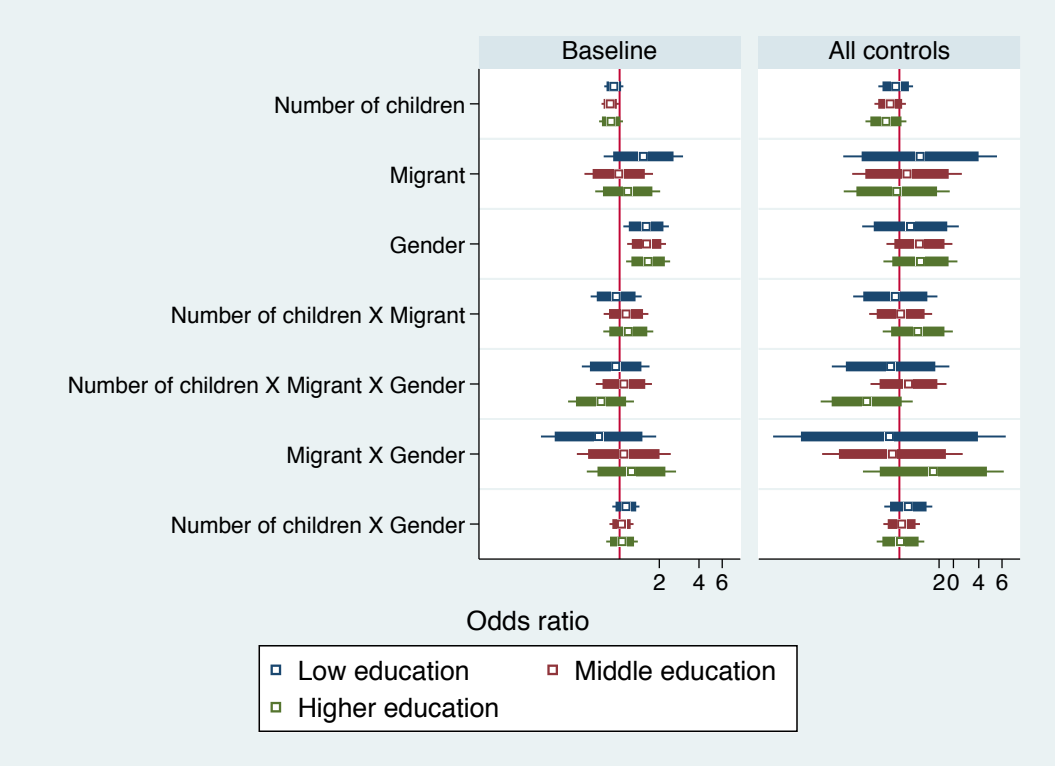
In Figure 3.5 (Table C.5 in Appendix) we display the results of the estimation of depressive symptoms of the married across different levels of education. We find that marriage can be linked to a lower likelihood of depression for the low and medium educated. In addition, higher educated women have higher chances to develop depressive symptoms when all controls are accounted for.



Note: Ordered logistic regression, estimates are presented with 90%, 95%, 99% confidence intervals.

Figure 3.5 – Estimation of depressive symptoms of the married across different levels of education

Figure 3.6 (Table C.6 in Appendix) reports the estimation of depressive symptoms of parents across different levels of education. In the baseline, being a woman is linked to higher chances of depressive symptoms for all levels of education. However, the association disappears once all the controls are taken into account. The intersection between the number of children, migration status and gender indicates that women with more children and migration experience who are highly educated are less likely to have depressive symptoms.

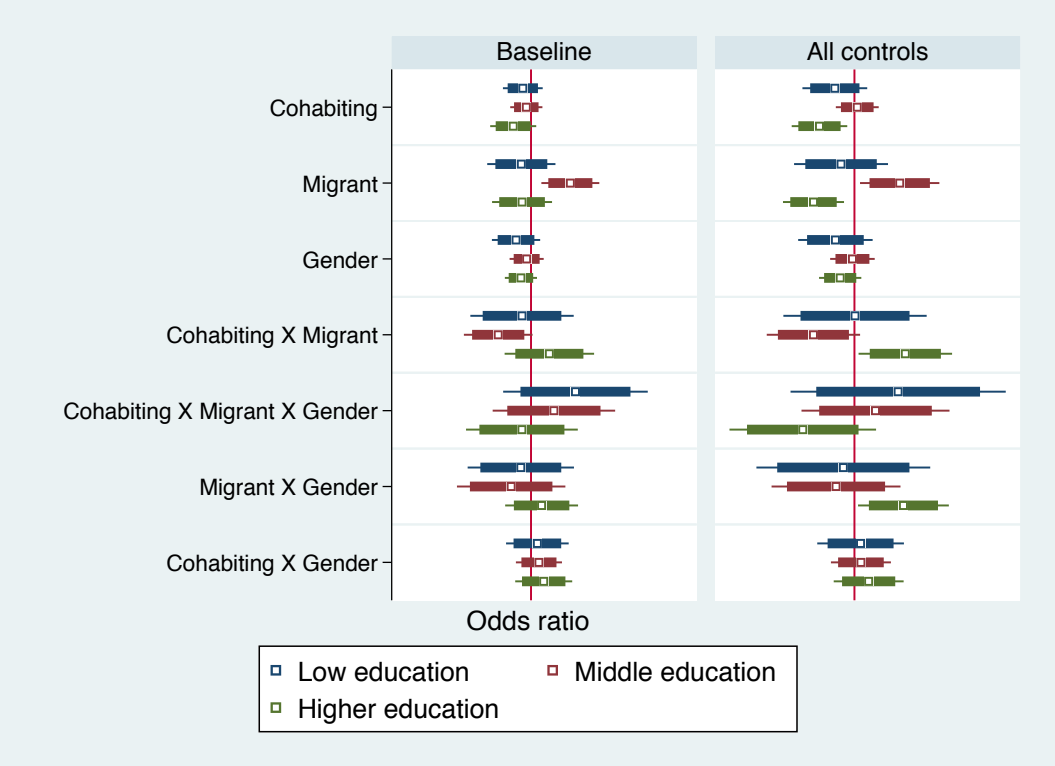


Note: Ordered logistic regression, estimates are presented with 90%, 95%, 99% confidence intervals.

Figure 3.6 – Estimation of depressive symptoms of parents across different levels of education

Loneliness

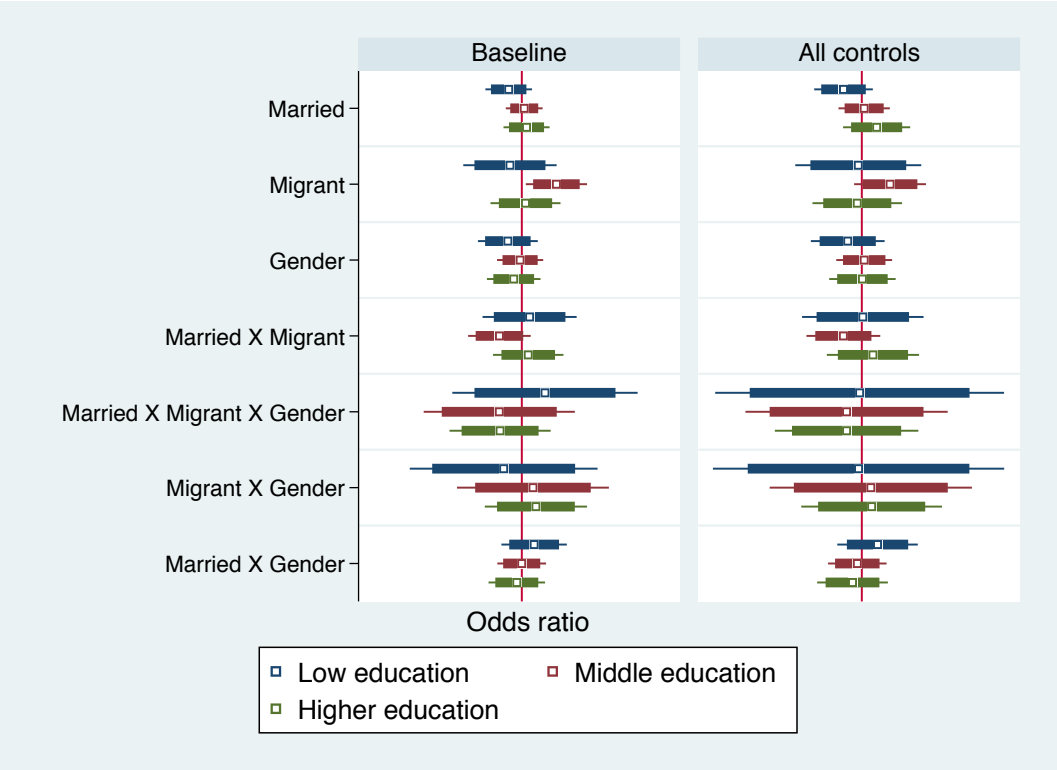
Figure 3.7 (Table C.7 in Appendix) suggests that having experienced migration is associated to higher chances of loneliness. When all controls are included, being in a union is associated to a lower likelihood of loneliness for the highly educated. At the intersection of union, migration experience and gender, highly educated women with a migratory background who cohabit are less likely to be lonely. Also highly educated women who experienced migration are less prone to loneliness.



Note: Ordered logistic regression, estimates are presented with 90%, 95%, 99% confidence intervals.

Figure 3.7 – Estimation of loneliness of the cohabiting across different levels of education

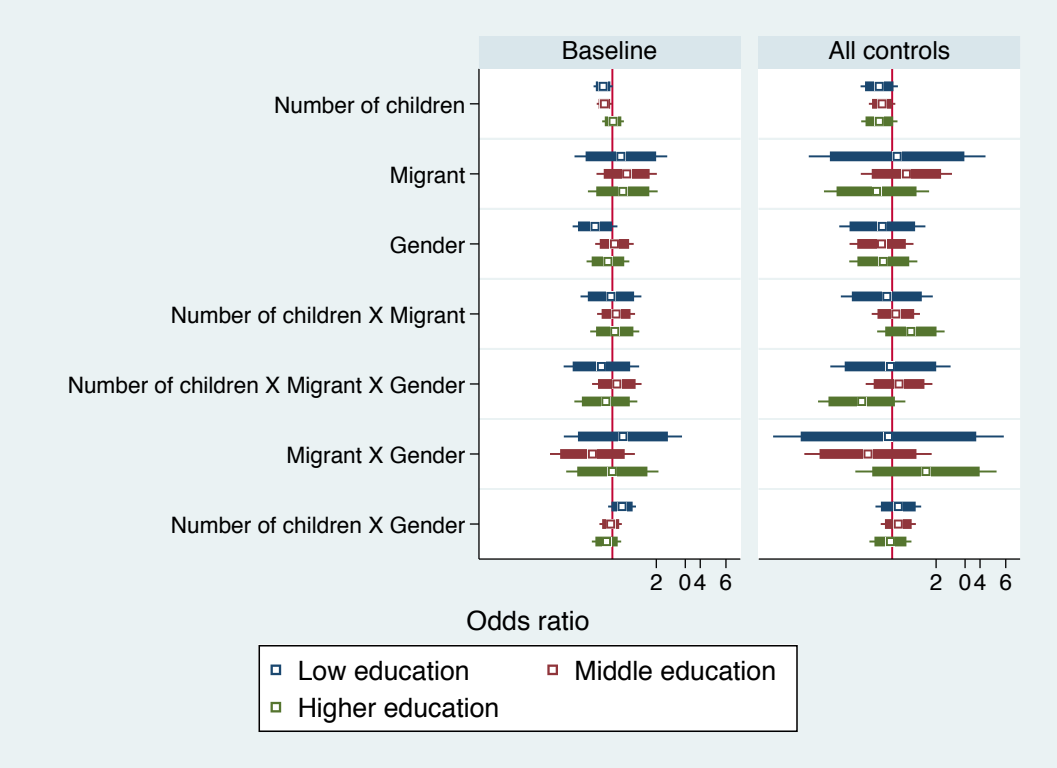
We find no evidence to claim presence of intersectionality between marriage, migration and gender in relation to loneliness (Figure 3.8, Table C.8 in Appendix).



Note: Ordered logistic regression, estimates are presented with 90%, 95%, 99% confidence intervals.

Figure 3.8 – Estimation of loneliness of the married across different levels of education

Figure 3.9 (Table C.9 in Appendix) shows the estimation results for the number of children in relation to loneliness. The model with all controls provides a picture for the highly educated. First, highly educated individuals with children are less likely to experience loneliness. Second, highly educated women who experienced migration and have children are less likely to be lonely.



Note: Ordered logistic regression, estimates are presented with 90%, 95%, 99% confidence intervals.

Figure 3.9 – Estimation of loneliness of parents across different levels of education

Family formation events, gender and migration experience matter in connection to subjective well-being. In terms of life satisfaction, cohabiting highly educated women with a migrant background are more likely to be satisfied with their lives. We also find that marriage suggests a higher likelihood of life satisfaction, especially for people with middle education. Our results suggest that depressive symptoms are less likely to be found among people with middle or higher levels of education. Gender plays a role in this association as well because women are more likely to be depressed. Loneliness happens to follow more diverse patterns amongst the educational groups. For example, cohabiting women who had experienced migration in their childhood and have higher education are less likely to be lonely. The association holds for highly educated mothers with a migratory experience too. Women with higher education who migrated in their childhood and currently live with a partner are less

likely to feel lonely. In general, different forms of partnership and family formation interact with the categories of (dis-)advantage (gender and migration experience) and are associated to subjective well-being measures such as life satisfaction, depressive symptoms and loneliness.

3.5 Conclusions

Eastern Europe has undergone a period of tremendous societal and institutional change after the dissolution of the USSR. Many countries in the region have chosen a path of free market economy and democracy to improve the living condition of their citizens and strengthen ties with Northwest Europe and North America. In contrast, Belarus has embraced a more authoritarian approach to its statehood by preserving a strong role the government plays in the matters of economy and society. Belarus has remained a relatively poor country standing out as an outlier in the context of globally rich and democratic Europe. It provides an exceptional context to analyse the connection partnership and parenthood has with subjective well-being.

While there is some evidence certain aspects of subjective well-being are interconnected with partnership and childbearing (e.g. Aassve et al., 2012), ours is the first work to provide detailed attention to Belarus as a country that is often omitted as a research subject. To the best of our knowledge, we are also the first to apply intersectionality approach to investigate the association between family statuses, life satisfaction, depression, and loneliness. In doing so, we contribute to and extend the literature on subjective well-being in population science (e.g. Carr and Springer, 2010; Myrskylä and Margolis, 2014; Wright and Brown, 2017) and intersectionality (e.g. Sigle-Rushton and Perrons, 2006; Hankivsky et al., 2009; Dhamoon and Hankivsky, 2011).

We find that intersectionality approach towards a set of family statuses and categories of (dis-)advantage, namely gender and migration experience, reveals associations between the family statuses, gender, migration experience, and subjective well-being. In addition, educational gradient allows for a more focused evaluation of the link. Highly educated women who experienced migration and cohabit are more likely to be satisfied with their lives. Also, highly educated mothers with migratory experience are less likely to be lonely. We also find that marriage implies a higher likelihood of life satisfaction, especially for people with middle education. The results indicate that depressive symptoms are less likely to be pronounced among people with middle or higher levels of education. Gender plays a role in this association

as well because women are more likely to be depressed. These findings agree with the previous studies that articulate the interconnectedness of the different domains of life such as gender, socioeconomic background, and migration status; individual characteristics such as physical health; life events such as marriage, cohabitation or parenthood; and macro factors among which are the economy, democracy, and freedom (Galambos et al., 2015; Galambos et al., 2020; Helliwell et al., 2020).

Our study is not without limitations. First, the nature of the data limits the conclusions that can be drawn. No causality can be established between the dependent variables and covariates. Subjective well-being may be endogenous to partnership and parenthood decisions and vice versa (e.g. Luhman et al., 2013). Second, the validity of our regression models should be interpreted with caution. Methodological hazards such as reverse causality and endogeneity only allows for an interpretation that incorporates the direction and association between the variables rather than causal links. Third, our migration variable is indicative. It captures the individual experience of migration between the regions in Belarus before age 15, however the intensity and timing of migration cannot be elaborated as there is no information that would allow us to know the actual age at migration or length of stay at the migration origin or destination.

Despite these limitations this study provides evidence that different forms of partnership and family formation interact with the categories of (dis-)advantage (gender and migration experience) and are associated to subjective well-being measures such as life satisfaction, depressive symptoms, and loneliness. Educational gradient is an important stratification tool that structures the associations between the outcomes and covariates. Overall we find that the subjective well-being is a spectrum that is sensitive to many aspects of personal and social life that often work in combination. Partnership, marriage, and children can be seen as important contributing factors to individual well-being. Other social forces such as gender and migration status are at play too when assessing life satisfaction, depression, and loneliness. The future studies can use the intersectionality approach to subjective well-being and family formation in a winder set of Eastern European countries.

Thesis Conclusion

In the introduction we have set the goal to better understand the population dynamics and policies in Europe and to explore the connection between life course events as well as their relationship to subjective well-being.

Therefore, in Chapter 1 of this thesis we presented a snapshot of average population dynamics in Europe from 2000 to 2017 as well as the connection between population policies and average population dynamics. We established a four-point typology that allowed to better understand the average population dynamics in Europe by assigning NUTS-3 and countries to a group of high depopulation, depopulation, population growth or high population growth. We used Eurostat data on natural population change and net migration to demonstrate how the subnational NUTS-3 regions and countries faire in terms of population growth and decline. UN World Population Policy database, the UN Population Division, and the World Bank's World Development Indicators data was used to estimate the connection between fertility and immigration policies and population dynamics. Our findings contribute to the literature on population policies as well as differences in fertility, mortality, ageing, and migration. Furthermore, we found evidence to support that the centre-periphery concept holds in the European setting (e.g. Kashnitsky and Schöley, 2018). Nationally, urban centres exhibit population growth whilst rural areas have been found to be mostly depopulating. At the level of supranational European regions, more NUTS-3 in Western Europe and parts of Northern Europe (Scandinavia) have experienced population growth than decline. The opposite holds for Central and Eastern European as well as Southern European NUTS-3. Our analyses suggest a negative association between fertility policies and population growth hinting the direction pro-natalist population policies might take in the long run (Botev, 2015). However, we found no association between average population dynamics and immigration policies.

In Chapter 2 we investigated the connection between life course event intentions of marriage, childbearing, and moving in Central and Eastern Europe. We hypothesised that family formation and spatial mobility may be connected in the life course. There were five postulated mechanisms through which marriage-moving and fertility-moving events may interact. We applied the theoretical framework to find positive correlations between family formation and moving intentions using the individual level data from the Generations and

Gender Survey wave 1. Our results hold robust across different estimations for the general sample as well as female and male subsamples. In particular, we found a positive association between intentions to marry and move which stands in line with previous findings in the field (Mulder and Wagner, 1993). We also found a positive connection between intentions to have children and move that is consistent with other literature (e.g. Kulu and Milewski, 2007).

In Chapter 3 we turned to life course after family formation and migration. We employed the intersectionality approach towards a set of family statuses and categories of (dis-)advantage, namely gender and migration experience. The approach revealed associations between the family statuses, gender and migration experience and subjective well-being. We found that highly educated women who experienced migration and cohabit are more likely to be satisfied with their lives. Moreover, highly educated mothers with migratory experience were found less likely to be lonely. We also discovered that marriage implies a higher likelihood of life satisfaction, especially for people with middle education. The results indicate that depressive symptoms are less likely to be pronounced among people with middle or higher levels of education. Gender is important in this association as well because women were found to be more likely to develop depressive symptoms than men. These findings agree with the previous studies that articulate the interconnectedness of the different domains of life such as gender, socioeconomic background, and migration status; individual characteristics such as physical health; life events such as marriage, cohabitation or parenthood; and macro factors among which are the economy, democracy, and freedom (Galambos et al., 2020; Helliwell et al., 2020; Galambos et al., 2015).

Connecting these contributions together, this thesis has improved the knowledge of population dynamics and life course in two ways. First, with Chapter 1 we made a contribution to the demographic literature that has looked at the subnational population dynamics and population policies in Europe. We presented a snapshot of average population dynamics at NUTS-3 level in Europe during the first decades of the 21st century. We also estimated a negative connection between pro-natalist policies and population resilience to demographic change. By doing so we contributed to the literature on population policies (e.g. De Silva & Tenreyro, 2017; May, 2012), population change (e.g. Kashnitsky et al., 2020; Kashnitsky et al., 2017), and population dynamics in subnational regions of Europe (e.g. Rees et al., 2013). Second, in Chapters 2 and 3 we looked at life course events from two different perspectives. In Chapter 2, we saw that life course event intentions (intentions to have children, marry, and

move) are related. This finding stands in line with the literature that has identified a connection between marriage and moving (e.g. Mulder and Wagner, 1993) as well as intentions to have children and moving (e.g. Kulu and Milewski, 2007). In Chapter 3, the connection between life course events that happened (marriage, partnership, childbearing, migration) and subjective well-being took the central place. We found singnificant associations between the family statuses, gender and migration experience and subjective well-being. These findings correspond to the previous studies on gender, socioeconomic background, and migration status and their connection to subjective well-being (e.g. Galambos et al., 2020).

This thesis can also be treated a source of demographic projections. In line with Chapter 1, centre-periphery principle may be expected to hold nationally and supranationally where urban areas and Western and Northern Europe will exhibit population growth whilst rural areas and regions in Central and Eastern Europe as well as Southern Europe will experience a degree of depopulation. We envisage lack of results coming from pro-natalist policies in light of population resilience to demographic change. In connection to Chapter 2, we project a tendency for early life course events of family formation and spatial mobility to stay linked in CEE. Similarly, as discussed in Chapter 3, subjective well-being is connected to family status, gender, and migration experience. This relationship is expected to hold unless significant changes in society that could change the factors that influence well-being are re-defined.

However, the limitations of this thesis are as follows. First, in Chapter 1 we utilised Eurostat data on natural population change and net migration at NUTS-3 level. Some of the NUTS-3 regions have missing data for a period spanning from 2000 to 2013. The missing data precluded efforts to map year-specific population dynamics of the subnational regions in Europe. The lack of data on policy variables has also limited the analytical prowess in exploring the connection between policies and average population dynamics. Second, in the analytical part of Chapter 1 and Chapters 2 and 3 we focused primarily on correlations between policies and average population dynamics, life course event intentions and associations between family status, gender and migratory experience to subjective well-being. The dependent and independent variables chosen to measure these associations were collected with restricted subsequent attempts to collect data on fulfilled intentions or more objective measures of well-being. While this limit prevents us from drawing causational conclusions or generalising the findings, the use of such data sheds light on potential mechanisms defining policies, life course choices, and related outcomes. Future research could first enquire deeper

on the causal connection between population policies and demographic dynamics, second link life course event intentions to fulfilled intentions, and third look at causal relationship between family statuses, gender and migration experience, and subjective well-being.

Consequently, we outline three research ideas that could address the limitations and link the findings of this thesis. First, by complementing Eurostat data with the missing NUTS-3 data from national statistics offices and using data on economic development, labour markets as well as social welfare provision we could provide a more nuanced picture of both population dynamics in Europe and establish potential drivers of such dynamics using the methods of spatial econometrics. This approach could also be complimented by a model fitting annual data on regions in connection to population dynamics rather than average data used in this thesis. Second, the fulfilment of life course intentions calls for a closer investigation in order to understand whether the linked life course intentions result in a joint fulfilment. The realisation of intentions may depend not only on previously discussed factors of gender or education, but on such elements as rural and urban residence as well. The questions of intention realisation and its defining factors could be answered with the use of a longitudinal data set with a balanced sample of different types of intentions. The use of GGP2020 data and its upcoming second wave of data collection could solve these issues (GGP, 2019b). Third, the connection between family status and subjective well-being requires a broader research agenda. In a nutshell, longitudinal data that measures well-being before and after such life course events as marriage, childbearing or migration would lead to a better understanding of the connection through a causal framework. The Survey of Health, Ageing and Retirement in Europe (SHARE) could a possible data source for such project.

In this thesis, we have relied on the framework combining different aspects of life course and demographic change to explore the connection between life course events and their relationship to subjective well-being. By making use of broader NUTS-3 data and data sets capturing major life events, this thesis can contribute to a broader research agenda in the field of life course and population dynamics. Following this goal would support the European Commission's effort to address "one of [the] deepest lying challenges" for Europe, the demographic change (von der Leyen 2019b, 4).

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Appendices

Appendix A – Chapter 1

Average population dynamics in NUTS-3, 2000-2017

https://www.dropbox.com/s/2rog7eb7sc1p18q/Appendix%20A1.html?dl=0

Please download Appendix A by clicking or copying on the hyperlink above. Then open it with your browser to access the interactive map of the average population dynamics in NUTS-3, 2000-2017.

Appendix B - Table 1 Descriptive statistics

	Bulgaria		Czechia		Estonia		Lithuania		Romania		Total	
	Observations	Mean (Std. Dev.)	Observations	Mean (Std. Dev.)	Observations	Mean (Std. Dev.)	Observations	Mean (Std. Dev.)	Observations	Mean (Std. Dev.)	Observations	Mean (Std. Dev.)
Focal dependent variables												
Intention to marry within next 3 years	4,103	1.9066	731	2.3036	1,254	2.3309	991	2.4894	3,823	1.8427	10,902	2.0126
Intention to have a child within next 3 years	7,856	1.7334	4,813	1.7197	2,226	1.6581	4,916	1.7455	5,938	1.6645	25,749	1.7107
Intention to move within next 3 years	12,830	1.5547	9,922	1.5438	7,854	1.4749	9,995	1.6068	11,986	1.3826	52,587	1.5114
Covariates												
Age	12,855	42.725 (16.3380)	10,006	44.7577 (17.2470)	7,855	48.3303 (16.5125)	10,036	46.4341 (17.6102)	11,986	49.0332 (16.2520)	52,738	46.0851 (16.9403)
Gender	12,858	0.455	10,006	0.4794	7,855	0.3591	10,036	0.4981	11,986	0.4986	52,741	0.4634
Highest education level (ISCED)	12,698	3.0344	9,851	3.1569	7,855	3.4884	10,036	3.3177	11,986	2.6868	52,426	3.1002
Father's highest education level (ISCED)	11,619	2.2926	8,223	3.0846	7,461	2.4516	7,338	2.1999	11,052	1.7701	45,693	2.3198
Number of children	12,858	1.3778 (1.0997)	10,006	1.3547 (1.2487)	7,855	1.6252 (1.2271)	10,036	1.3272	11,986	1.596	52,741	1.45027 (1.2310)
Cohabiting partner	12,819	0.6671	9,991	0.552	7,855	0.6385	10,036	0.571	11,986	0.7091	52,687	0.6323
Non-cohabiting partner	12,819	0.0537	9,991	0.0809	7,855	0.0092	10,036	0.047	11,986	0.0341	52,687	0.0465
No partner	12,819	0.2791	9,991	0.3669	7,855	0.3521	10,036	0.3819	11,986	0.2567	52,687	0.3211

Source: GGS wave 1, own calculations.

Appendix B - Table 2 Relationship between marriage and spatial mobility

	(1) Baseline	(2) Baseline, full controls	(3) Female	(4) Female, full controls	(5) Male	(6) Male, full controls	(7) Baseline, full controls + education
DV: Intention to marry							
Age	0.269***	0.234***	0.193***	0.163***	0.359***	0.318***	0.212***
	(0.0151)	(0.0156)	(0.0218)	(0.0226)	(0.0216)	(0.0221)	(0.0162)
Age^2	-0.00448***	-0.00380***	-0.00359***	-0.00297***	-0.00560***	-0.00487***	-0.00352***
	(0.000236)	(0.000243)	(0.000343)	(0.000354)	(0.000333)	(0.000341)	(0.000249)
Gender (male=1)	0.0316	0.0225					0.0481
	(0.0321)	(0.0331)					(0.0337)
Father's education (ISCED)	-0.00354	-0.0102	0.0283	0.0148	-0.0266	-0.0256	-0.0447**
	(0.0132)	(0.0140)	(0.0190)	(0.0205)	(0.0188)	(0.0196)	(0.0156)
Number of children		-0.220***		-0.215***		-0.203***	-0.197***
		(0.0185)		(0.0261)		(0.0267)	(0.0190)
Partnership status							
(reference = cohabiting partner)							
Non-cohabiting partner		-0.377***		-0.272**		-0.432***	-0.407***
		(0.0588)		(0.0836)		(0.0841)	(0.0593)
No partner		-1.033***		-1.028***		-0.998***	-1.063***
		(0.0542)		(0.0772)		(0.0774)	(0.0546)
Individual education (ISCED)							0.0983***
							(0.0184)
DV: Intention to move							
Age	0.0230	0.0192	-0.0153	-0.0131	0.0657**	0.0609**	-0.00491
	(0.0157)	(0.0160)	(0.0218)	(0.0224)	(0.0226)	(0.0232)	(0.0167)
Age^2	-0.000914***	-0.000799**	-0.000342	-0.000292	-0.00156***	-0.00146***	-0.000489
	(0.000247)	(0.000253)	(0.000343)	(0.000352)	(0.000358)	(0.000368)	(0.000260)
Gender (male=1)	-0.112***	-0.118***					-0.0963**
	(0.0329)	(0.0333)					(0.0338)
Father's education (ISCED)	0.0805***	0.0571***	0.0770***	0.0427*	0.0845***	0.0685***	0.0227
	(0.0136)	(0.0141)	(0.0192)	(0.0204)	(0.0192)	(0.0198)	(0.0156)
Number of children		-0.0562**		-0.0911***		-0.0146	-0.0317
		(0.0196)		(0.0269)		(0.0292)	(0.0202)
Partnership status							
(reference = cohabiting partner)							
Non-cohabiting partner		0.411***		0.450***		0.405***	0.394***
		(0.0580)		(0.0820)		(0.0830)	(0.0582)
No partner		-0.0577		-0.109		0.0184	-0.0672
		(0.0544)		(0.0757)		(0.0792)	(0.0547)
Individual education (ISCED)							0.0937***
							(0.0186)
Correlation coefficient	0.199***	0.182***	0.244***	0.217***	0.149***	0.143***	0.175***
	(0.0214)	(0.0220)	(0.0305)	(0.0314)	(0.0304)	(0.0312)	(0.0221)
N	6711	6701	3262	3257	3449	3444	6663

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 Notes: All estimations include country and year fixed effects. In columns (3) - (6) gender is excluded due to multicollinearity. Source: GGS wave 1, own calculations.

Appendix B - Table 3 Relationship between childbearing and spatial mobility

	(1) Baseline	(2) Baseline, full controls	(3) Female	(4) Female, full controls	(5) Male	(6) Male, full controls	(7) Baseline, full controls + education
DV: Intention to have children							
Age	0.350***	0.415***	0.329***	0.433***	0.410***	0.440***	0.394***
	(0.0118)	(0.0130)	(0.0177)	(0.0197)	(0.0165)	(0.0180)	(0.0133)
Age^2	-0.00635***	-0.00695***	-0.00636***	-0.00751***	-0.00699***	-0.00709***	-0.00669***
	(0.000190)	(0.000205)	(0.000292)	(0.000318)	(0.000261)	(0.000280)	(0.000208)
Gender (male=1)	0.195***	0.0554*					0.0791***
	(0.0217)	(0.0233)					(0.0236)
Father's education (ISCED)	0.0557***	-0.0253**	0.0889***	0.00194	0.0245	-0.0508***	-0.0574***
	(0.00890)	(0.00964)	(0.0123)	(0.0133)	(0.0132)	(0.0142)	(0.0106)
Number of children		-0.776***		-0.734***		-0.818***	-0.755***
		(0.0175)		(0.0230)		(0.0274)	(0.0178)
Non-cohabiting partner		-0.360***		-0.153*		-0.565***	-0.353***
		(0.0429)		(0.0599)		(0.0631)	(0.0431)
No partner		-0.767***		-0.652***		-0.875***	-0.746***
		(0.0308)		(0.0416)		(0.0472)	(0.0311)
Individual education (ISCED)							0.0969***
							(0.0118)
DV: Intention to move							
Age	-0.0246**	0.00705	-0.0651***	-0.0166	0.0209	0.0370*	-0.0160
	(0.00931)	(0.00994)	(0.0128)	(0.0138)	(0.0137)	(0.0145)	(0.0103)
Age^2	-0.000247	-0.000583***	0.000305	-0.000278	-0.000863***	-0.000980***	-0.000308*
	(0.000143)	(0.000150)	(0.000196)	(0.000208)	(0.000210)	(0.000219)	(0.000153)
Gender (male=1)	0.0379	0.00501					0.0238
	(0.0211)	(0.0215)					(0.0217)
Father's education (ISCED)	0.0881***	0.0655***	0.0759***	0.0505***	0.103***	0.0843***	0.0305**
	(0.00857)	(0.00878)	(0.0114)	(0.0117)	(0.0130)	(0.0133)	(0.00956)
[1em] Number of children		-0.104***		-0.106***		-0.0930***	-0.0783***
		(0.0129)		(0.0166)		(0.0207)	(0.0132)
Non-cohabiting partner		0.494***		0.587***		0.406***	0.501***
		(0.0393)		(0.0543)		(0.0584)	(0.0395)
No partner		0.0133		0.0535		-0.0111	0.0379
		(0.0267)		(0.0347)		(0.0430)	(0.0269)
Individual education (ISCED)							0.103***
							(0.0108)
Correlation coefficient	0.177***	0.134***	0.208***	0.158***	0.130***	0.0959***	0.125***
	(0.0140)	(0.0148)	(0.0192)	(0.0203)	(0.0207)	(0.0218)	(0.0149)
N	20754	20745	11618	11614	9136	9131	20654

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 Notes: All estimations include country and year fixed effects. In columns (3) - (6) gender is excluded due to multicollinearity. Source: GGS wave 1, own calculations.

Appendix C – Chapter 3

Table C.1 – Life satisfaction of the cohabiting across different levels of education

	Baseline			All controls		
	Lower education	Medium education	Higher education	Lower education	Medium education	Higher education
In union	-0.297	0.074	0.399	-0.078	0.467	0.452
	(0.336)	(0.312)	(0.355)	(0.641)	(0.358)	(0.484)
Cohabiting X Migrant	-1.273	0.084	0.54	-1.425	-0.05	0.994
	(0.797)	(0.772)	(0.907)	(1.751)	(1.022)	(1.173)
Cohabiting X Gender	-0.492	0.3	-0.281	0.298	0.075	-0.631
	(0.572)	(0.406)	(0.485)	(0.780)	(0.512)	(0.653)
Cohabiting X Migrant X Gender	0.591	0.676	-1.406	-0.511	0.435	-2.192
	(1.20)	(0.981)	(1.044)	(2.492)	(1.251)	(1.419)
Migrant X Gender	0.46	-0.279	1.279	1.744	-0.407	2.285**
	(0.964)	(0.713)	(0.787)	(1.748)	(0.882)	(1.077)
Gender (1 = female)	0.007	-0.234	-0.315	0.251	-0.069	0.081
	(0.420)	(0.307)	(0.337)	(0.668)	(0.374)	(0.485)
Migrant	0.336	-0.563	-1.007	0.222	0.085	-1.6*
	(0.577)	(0.530)	(0.700)	(0.791)	(0.720)	(0.872)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Socio-Demographic Controls	No	No	No	Yes	Yes	Yes
N	220	380	301	149	257	202
Prob > F	0.1592	0.4874	0.3944	0.0072	0.0000	0.0229

Ordered logistic regression, robust standard errors in parentheses

*p < 0.10, **p < 0.05, ***p < 0.01

Table C.2 – Life satisfaction of the married across different levels of education

	Baseline			All controls		
	Lower education	Medium education	Higher education	Lower education	Medium education	Higher education
Married	0.261	0.338**	-0.106	0.155	0.408*	-0.379
	(0.214)	(0.166)	(0.187)	(0.259)	(0.238)	(0.268)
Married X Migrant	0.091	0.284	0.045	-0.131	-0.049	0.455
	(0.367)	(0.282)	(0.298)	(0.450)	(0.363)	(0.372)
Married X Gender	-0.181	0.008	0.568**	0.056	0.116	0.413
	(0.275)	(0.208)	(0.238)	(0.320)	(0.257)	(0.301)
Married X Migrant X Gender	-0.52	1.127**	-0.161	-1.212	0.286	-1.439**
	(0.738)	(0.482)	(0.433)	(1.075)	(0.555)	(0.555)
Migrant X Gender	0.872	-1.122**	0.22	1.409	-0.364	1.593**
	(0.752)	(0.212)	(0.447)	(1.060)	(0.564)	(0.576)
Gender (1 = female)	0.352	0.04	-0.377*	0.212	0.07	-0.202
	(0.250)	(0.195)	(0.222)	(0.287)	(0.244)	(0.283)
Migrant	-0.084	-0.134	-0.317	0.024	0.25	-0.785**
	(0.370)	(0.288)	(0.305)	(0.447)	(0.374)	(0.386)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Socio-Demographic Controls	No	No	No	Yes	Yes	Yes
N	1,009	2,479	1,977	737	1,847	1,453
Prob > F	0.0855	0.0000	0.0001	0.0000	0.0000	0.0000

Ordered logistic regression, robust standard errors in parentheses

*p < 0.10, **p < 0.05, ***p < 0.01

Table C.3 – Life satisfaction of parents across different levels of education

	Baseline			All controls		
	Lower education	Medium education	Higher education	Lower education	Medium education	Higher education
Number of children	0.031	0.114**	0.144**	0.236**	0.131	0.052
	(0.064)	(0.052)	(0.067)	(0.117)	(0.093)	(0.124)
Number of children X Migrant	-0.043	0.133	0.011	-0.059	0.307	0.282
	(0.172)	0.099	(0.144)	(0.246)	(0.196)	(0.210)
Number of children X Gender	-0.118	-0.026	0.018	0.012	-0.1	0.122
	(0.082)	(0.066)	(0.091)	(0.136)	(0.106)	(0.136)
Number of children X Migrant X Gender	0.088	0.089	-0.105	-0.084	-0.073	-0.335
	(0.233)	(0.160)	(0.184)	(0.368)	(0.224)	(0.248)
Migrant X Gender	0.352	-0.222	0.192	0.499	-0.076	0.653*
	(0.357)	(0.269)	(0.257)	(0.667)	(0.408)	(0.392)
Gender (1 = female)	0.211	-0.006	-0.006	0.168	0.319*	-0.003
	(0.131)	(0.107)	(0.126)	(0.261)	(0.187)	(0.206)
Migrant	-0.149	-0.097	-0.236	-0.047	-0.242	-0.725**
	(0.270)	(0.185)	(0.200)	(0.453)	(0.311)	(0.322)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Socio-Demographic Controls	No	No	No	Yes	Yes	Yes
N	1,724	3,489	2,653	737	1,847	1,453
Prob > F	0.0053	0.0000	0.0000	0.0000	0.0000	0.0000

Ordered logistic regression, robust standard errors in parentheses

*p < 0.10, **p < 0.05, ***p < 0.01

Table C.4 – Depressive symptoms of the cohabiting across different levels of education

	Baseline			All controls		
	Lower education	Medium education	Higher education	Lower education	Medium education	Higher education
In union	0.11	-0.835**	0.123	-0.439	-0.557	0.294
	(0.449)	(0.355)	(0.499)	(0.662)	(0.470)	(0.631)
Cohabiting X Migrant	0.842	0.345	-0.728	0.562	0.723	-0.691
	(1.056)	(0.760)	(0.848)	(1.260)	(0.864)	(1.055)
Cohabiting X Gender	-0.137	1.153**	-0.431	0.9	1.025	-0.964
	(0.634)	(0.477)	(0.617)	(0.866)	(0.654)	(0.779)
Cohabiting X Migrant X Gender	0.39	-1	1.575	0.089	-2.012	1.793
	(1.488)	(1.199)	(1.133)	(2.082)	(1.407)	(1.464)
Migrant X Gender	-1.416	0.167	-1.785**	-1.488	1.335	-1.543
	(1.121)	(0.979)	(0.806)	(1.725)	(1.154)	(1.097)
Gender (1 = female)	0.651	0.149	0.973**	0.02	-0.384	1.437**
	(0.492)	(0.341)	(0.404)	(0.730)	(0.503)	(0.555)
Migrant	0.09	0.538	1.169*	-0.178	0.166	0.996
	(0.745)	(0.567)	(0.598)	(0.931)	(0.166)	(0.798)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Socio-Demographic Controls	No	No	No	Yes	Yes	Yes
N	220	386	303	149	260	202
Prob > F	0.5674	0.028	0.3329	0.6884	0.1126	0.5839

Ordered logistic regression, robust standard errors in parentheses

*p < 0.10, **p < 0.05, ***p < 0.01

Table C.5 – Depressive symptoms of the married across different levels of education

	Baseline			All controls		
	Lower education	Medium education	Higher education	Lower education	Medium education	Higher education
Married	-0.453**	-0.367**	-0.222	-0.147	-0.367	0.143
	(0.008)	(0.176)	(0.232)	(0.309)	(0.248)	(0.359)
Married X Migrant	0.355	-0.157	0.037	0.648	-0.136	-0.069
	(0.435)	(0.311)	(0.329)	(0.520)	(0.350)	(0.406)
Married X Gender	-0.005	-0.04	-0.085	-0.093	0.199	-0.551
	(0.318)	(0.230)	(0.277)	(0.406)	(0.287)	(0.356)
Married X Migrant X Gender	0.527	-0.214	0.232	-0.165	-0.52	0.555
	(0.773)	(0.693)	(0.526)	(1.016)	(0.872)	(0.697)
Migrant X Gender	-0.75	0.411	-0.418	-0.287	0.696	-0.658
	(0.777)	(0.699)	(0.531)	(0.998)	(0.874)	(0.693)
Gender (1 = female)	0.493*	0.579***	0.538**	0.521	0.216	0.866**
	(0.287)	(0.214)	(0.260)	(0.375)	(0.272)	(0.340)
Migrant	0.008	0.322	0.354	-0.268	0.259	0.409
	(0.424)	(0.305)	(0.325)	(0.506)	(0.343)	(0.399)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Socio-Demographic Controls	No	No	No	Yes	Yes	Yes
N	1,020	2,508	1,996	741	1,860	1,463
Prob > F	0.0017	0.0000	0.0003	0.001	0.0000	0.0007

Ordered logistic regression, robust standard errors in parentheses

*p < 0.10, **p < 0.05, ***p < 0.01

Table C.6 – Depressive symptoms of parents across different levels of education

	Baseline			All controls		
	Lower education	Medium education	Higher education	Lower education	Medium education	Higher education
Number of children	-0.1	-0.163***	-0.149*	-0.064	-0.16	-0.234*
	(0.064)	(0.058)	(0.080)	(0.117)	(0.106)	(0.138)
Number of children X Migrant	-0.06	0.112	0.151	-0.07	0.022	0.321
	(0.172)	(0.151)	(0.169)	(0.285)	(0.213)	(0.237)
Number of children X Gender	0.109	0.033	0.042	0.155	0.039	0.019
	(0.091)	(0.081)	(0.107)	(0.162)	(0.124)	(0.161)
Number of children X Migrant X Gender	-0.068	0.074	-0.324	-0.153	0.158	-0.570*
	(0.229)	(0.190)	(0.223)	(0.398)	(0.257)	(0.311)
Migrant X Gender	-0.367	0.073	0.206	-0.173	-0.121	0.593
	(.0.390)	(0.318)	(0.302)	(0.788)	(0.476)	(0.477)
Gender (1 = female)	0.463***	0.47***	0.498***	0.194	0.35	0.367
	(0.154)	(0.131)	(0.149)	(0.327)	(0.223)	(0.250)
Migrant	0.414	-0.015	0.141	0.362	0.133	-0.046
	(0.268)	(0.232)	(0.220)	(0.520)	(0.371)	(0.359)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Socio-Demographic Controls	No	No	No	Yes	Yes	Yes
N	1,742	3,524	2,675	741	1,860	1,463
Prob > F	0.0000	0.0000	0.0000	0.0018	0.0000	0.0001

Ordered logistic regression, robust standard errors in parentheses

*p < 0.10, **p < 0.05, ***p < 0.01

Table C.7 – Loneliness of the cohabiting across different levels of education

	Baseline			All controls		
	Lower education	Medium education	Higher education	Lower education	Medium education	Higher education
Cohabiting	-0.399	-0.228	-0.866**	-0.955	0.137	-1.702***
	(0.375)	(0.304)	(0.435)	(0.612)	(0.405)	(0.524)
Cohabiting X Migrant	-0.437	-1.597**	0.893	0.027	-1.997**	2.477***
	(0.976)	(0.648)	(0.845)	(1.354)	(0.882)	(0.883)
Cohabiting X Gender	0.309	0.385	0.618	0.298	0.316	0.692
	(0.591)	(0.435)	(0.538)	(0.819)	(0.566)	(0.660)
Cohabiting X Migrant X Gender	2.164	1.114	-0.443	2.127	1.025	-2.51*
	(01.366)	(1.157)	(1.056)	(2.034)	(1.398)	(1.385)
Migrant X Gender	-0.496	-0.966	0.515	-0.541	-0.896	2.386***
	(1.004)	(1.024)	(0.689)	(1.642)	(1.218)	(0.858)
Gender (1 = female)	-0.729	-0.212	-0.491	-0.926	-0.097	-0.694*
	(0.456)	(0.322)	(0.303)	(0.703)	(0.421)	(0.399)
Migrant	-0.471	1.914***	-0.436	-0.652	2.204***	-1.994***
	(0.644)	(0.547)	(0.567)	(0.888)	(0.750)	(0.576)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Socio-Demographic Controls	No	No	No	Yes	Yes	Yes
N	219	384	302	149	260	202
Prob > F	0.1801	0.0062	0.5351	0.1375	0.0000	0.0015

Ordered logistic regression, robust standard errors in parentheses
*p < 0.10, **p < 0.05, ***p < 0.01

Table C.8 – Loneliness of the married across different levels of education

	Baseline			All controls		
	Lower education	Medium education	Higher education	Lower education	Medium education	Higher education
Married	-0.309	0.056	0.111	-0.431	0.055	0.35
	(0.213)	(0.168)	(0.211)	(0.268)	(0.235)	(0.307)
Married X Migrant	0.184	-0.528*	0.151	0.024	-0.435	0.263
	(0.431)	(0.286)	(0.322)	(0.557)	(0.338)	(0.422)
Married X Gender	0.291	-0.002	-0.118	0.371	-0.105	-0.219
	(0.299)	(0.223)	(0.259)	(0.369)	(0.268)	(0.324)
Married X Migrant X Gender	0.547	-0.532	-0.512	-0.051	-0.359	-0.359
	(0.849)	(0.693)	(0.463)	(1.324)	(0.927)	(0.658)
Migrant X Gender	-0.428	0.264	0.333	-0.076	0.213	0.232
	(0.861)	(0.696)	(0.468)	(1.335)	(0.927)	(0.645)
Gender (1 = female)	-0.329	-0.039	-0.191	-0.332	0.057	0.014
	(0.274)	(0.211)	(0.245)	(0.338)	(0.255)	(0.304)
Migrant	-0.28	0.817	0.087	-0.083	0.668**	-0.106
	(0.427)	(0.280)	(0.320)	(0.577)	(0.329)	(0.410)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Socio-Demographic Controls	No	No	No	Yes	Yes	Yes
N	1,018	2,500	1,991	741	1,860	1,461
Prob > F	0.001	0.0000	0.0000	0.001	0.0000	0.0001

Ordered logistic regression, robust standard errors in parentheses

*p < 0.10, **p < 0.05, ***p < 0.01

Table C.9 – Loneliness of parents across different levels of education

	Baseline			All controls		
	Lower education	Medium education	Higher education	Lower education	Medium education	Higher education
Number of children	0.006	-0.126***	0.01	-0.203*	-0.158*	-0.202*
	(0.063)	(0.046)	(0.066)	(0.114)	(0.080)	(0.111)
Number of children X Migrant	-0.022	0.058	0.037	-0.084	0.058	0.295
	(0.186)	(0.116)	(0.150)	(0.281)	(0.145)	(0.206)
Number of children X Gender	0.152*	-0.027	-0.092	0.097	0.096	-0.027
	(0.085)	(0.068)	(0.089)	(0.140)	(0.107)	(0.128)
Number of children X Migrant X Gender	-0.172	0.069	-0.102	-0.026	0.108	-0.48*
	(0.231)	(0.151)	(0.192)	(0.368)	(0.204)	(0.267)
Migrant X Gender	0.166	-0.314	-0.006	-0.058	-0.38	0.533
	(0.361)	(0.259)	(0.282)	(0.706)	(0.389)	(0.432)
Gender (1 = female)	-0.273**	0.032	-0.069	-0.155	-0.167	-0.139
	(0.137)	(0.118)	(0.130)	(0.263)	(0.195)	(0.208)
Migrant	0.134**	0.225	0.164	0.078	0.224	-0.246
	(0.058)	(0.184)	(0.213)	(0.541)	(0.279)	(0.321)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Socio-Demographic Controls	No	No	No	Yes	Yes	Yes
N	1,739	3,514	2,666	741	1,860	1,461
Prob > F	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000

Ordered logistic regression, robust standard errors in parentheses

*p < 0.10, **p < 0.05, ***p < 0.01