HACETTEPE UNIVERSITY
INSTITUTE OF POPULATION STUDIES

THE INFLUENCE OF COVID-19 PANDEMIC ON FERTILITY PREFERENCES OF TURKISH AND POLISH MIGRANTS IN GERMANY

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The Influence of COVID-19 Pandemic on Fertility Preferences of Turkish and Polish Migrants in Germany

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ABSTRACT

COVID-19 pandemic is a serious multi-faceted crisis which showed its effects in various areas of life such as mental and physical health, economy, human rights, and security. These effects were felt all over the world since it was a global pandemic that reached everywhere on this planet if humans live there. Although the effects were felt throughout the world, each country and each subpopulation in a country felt these effects in their own unique way, some feeling the effects harsher than the others. In this thesis, the impact of COVID-19 pandemic on the fertility preferences is studied to contribute to this area of research. The data obtained from German Family Panel (pairfam) study is used to make related descriptive and multivariate analyses to measure the effect of COVID-19 crisis in different groups of the population residing in Germany. To compare the effects of COVID-19 on different groups, two migrant population is selected: Turkish and Polish migrants. These populations were compared with German native population and with each other. Four research questions were answered through analyses: "What are the effects of COVID-19 pandemic on fertility preferences in Germany?", "What are the effects of migration on COVID-19 outcomes on fertility preferences in Germany with a focus on Turkish and Polish migrant groups?", "How did the factors affecting the fertility preferences, including migration status, change between before and after the COVID-19 pandemic in Germany?", "What factors, including migration status, were effective in changes of fertility ideals and intentions in Germany?". The results showed that these different groups of migrants have, in some cases, along with different levels of parity and different sexes, experienced the effects of COVID-19 in different ways and different magnitudes. Although mean ideal number of children has not changed overall, a substantial increase occurred for 1st generation Turkish migrants, whose high fertility norm was prevalent in the logistic regression model for the post-COVID-19 period as well. Among the 2nd generation Turkish migrants, ideal fertility higher than 2 was also more likely compared to natives. For realistic birth intentions, share of respondents with positive intentions decreased among all groups except for 1st generation Polish migrants. Migration status was not significantly associated with abandonment of high norm fertility reflected in ideals. However, abandonment of birth intentions was less likely among the 2nd generation Turkish migrants. The results are interpreted through the lens of uncertainty and terror management hypotheses.

Keywords: fertility preferences, migration, COVID-19, crisis, Germany

ÖZET

COVID-19 salgını, ruh ve beden sağlığı, ekonomi, insan hakları ve güvenlik gibi hayatın çeşitli alanlarında etkilerini gösteren, çok yönlü, ciddi bir krizdir. Bu etkiler, COVID-19 eğer bir yerde insanlar yaşıyorsa oraya ulaşmış, küresel ölçekte etkili bir pandemi olduğu için, tüm dünyada hissedilmiştir. Etkileri tüm dünyada hissedilse de her ülke ve her ülkedeki her alt nüfus, bu etkileri kendine özgü bir şekilde, bazıları diğerlerinden daha şiddetli bir şekilde, hissetmiştir. Bu tezde, bu araştırma alanına katkı sağlamak amacıyla, COVID-19 pandemisinin doğurganlık tercihleri üzerindeki etkisi incelenmiştir. Alman Aile Paneli (pairfam) çalışmasından elde edilen veriler, Almanya'da ikamet eden nüfusun farklı gruplarında COVID-19 krizinin etkisini ölçmek amacıyla ilgili betimsel ve çok değişkenli analizlerin yapılması için kullanılmıştır. COVID-19'un farklı gruplar üzerindeki etkilerini karşılaştırmak için iki göçmen popülasyonu seçilmiştir: Türk ve Leh göçmenler. Bu popülasyonlar Alman yerli nüfusuyla ve birbirleriyle karşılaştırılmıştır. Yapılan analizlerle dört araştırma sorusuna yanıt aranmıştır. "COVID-19 pandemisinin Almanya'da doğurganlık tercihlerini etkisi nelerdir?", "Türk ve Leh göçmen gruplarına odaklanarak, göç olgusu COVID-19 pandemisinin doğurganlık tercihleri üzerine olan sonuçlarını ne şekilde etkilemiştir?", "COVID-19 pandemisinden önce ve sonra doğurganlık tercihlerini etkileyen faktörler, göç dahil olmak üzere, ne şekilde değişmiştir?", "Hangi faktörler, göç dahil olmak üzere, Almanya'da doğurganlık idealleri ve niyetlerinin değişiminde etkili olmuştur?". Sonuçlar, bazı durumlarda farklı çocuk sayısı düzeylerine ve farklı cinsiyetlere sahip bu farklı göçmen gruplarının, COVID-19'un etkilerini farklı şekillerde ve farklı boyutlarda deneyimlediklerini göstermiştir. Ortalama ideal çocuk sayısı genel olarak değişmese de lojistik regresyon modelinde de görüldüğü gibi yüksek doğurganlık normunun COVID-19 sonrası dönemde de etkili olduğu birinci. nesil Türk göçmenler için önemli ölçüde bir artış görülmüştür. Yerli Almanlara kıyasla ikinci nesil Türk göçmenlerin ikiden fazla çocuk idealine sahip olmaya daha meyilli oldukları saptanmıştır. Gerçekçi şekilde doğum niyetlerine sahip cevaplayıcıların, 1. nesil Leh göçmenler dışında, bütün gruplarda payı azalmıştır. Göç durumunun yüksek doğurganlık idealinden vazgeçilmesi ile istatistiksel olarak anlamlı bir ilişkisi bulunmamıştır. Ancak, gerçekçi doğum niyetlerinden vazgeçmeye yatkınlığın 2. nesil Türk göçmenler arasında yerli Alman nüfusa kıyasla daha az olduğu görülmüştür. Sonuçlar belirsizlik ve terör yönetimi hipotezleri çerçevesinde yorumlanmıştır.

Anahtar kelimeler: doğurganlık tercihleri, göç, COVID-19, kriz, Almanya

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ABBREVIATIONS

Gen	Generation
DESTASIS	Statistisches Bundesamt (German Federal Statistical Office)
pairfam	Panel Analysis of Intimate Relationships and Family Dynamics
TDHS	Turkey Demographic and Health Survey
TFR	Total Fertility Rate

CHAPTER 1. INTRODUCTION

Migration is undeniably one of the subjects with utmost importance in the world nowadays, with a spike in significance especially after the recent wars occurring all around the world. The migrant receiving countries tend to be the first world countries with a big labour market and a stable economy. Therefore, Germany is one of the most migrant receiving countries in the world. According to the numbers of the Federal Statistical Office of Germany (DESTATIS, 2021a), Germany has 13,895.865 foreign population as of 31 December 2023, which denotes a 2,078,075 increase from 31 December 2021, when Germany had 11,817,790 foreign population. Within this population 5,113,875 are from European Union States and 8,781,990 are from Non-European States. This denotes an increase of 128,385 and 1,946,690 from 2021's figures which are respectively 4,985,490 European Union migrants and 6,832,300 Non-European Union migrants. The biggest migrant population in Germany is Turkish migrants with a population of 1,548,095, which was 1,458,360 people in 2021, followed by Ukrainian migrants as second with a population of 1,239,705, which was merely 155,310 in 2021. Third highest migrant population is Syrian with 972,460 people, which was 867,585 in 2021, Romanian with 909,795 people, which was 844,535 in 2021. Fifth biggest migrant population Germany hosts are the Polish with 887,715, a number which used to be 870,995 in 2021. These increases are expected since Germany is a first world country with many pull effects migrants find attractive. German labour market offers higher earning jobs compared to many migrants' country of origin offers. Sudden peak at Ukrainian migrant population can be explained with the 24th of February 2022 Russian invasion of Ukraine. According to German Federal Office for Migration and Refugees (2024) foreigners need a residence permit to arrive and stay in Germany. However, an exception has been made for the Ukrainian case. Due to the Russian invasion of Ukraine, Ukrainians who flee their country accepted by Germany if they are "Ukrainian citizens with a biometric passport", "Third-country citizens who have been granted international or equivalent protection in Ukraine", and "Persons who have a Ukrainian ID card, provided this is the 2015 model (valid until 23/02/2025)". This has allowed Ukrainians to seek refuge in Germany more easily,

resulting in a sudden peak in Ukrainian migrant numbers. The Turkish case is fundamentally different from the Ukrainian case since the main cause for Turkish migration was not to seek refuge but to earn wages. Even though it is a very popular topic as recent, the Turkish migration to Europe has a long history. Although there is precursory migration, the "bilateral labour recruitment agreement" signed with West Germany in 1961 pinpoints the vast amount of labour migrant movement from Türkiye to Germany. After the agreement, the migration flow from Türkiye to Europe became Germany focused. The vast majority of Turkish migrants went to Germany. According to the Turkish Employment Service, between the years 1961 and 1974, 649,000 (81%) migrants out of 800,000 went to Germany (İçduygu, 2012). After the year 1975, migration has continued in different forms than labour recruitment such as "family reunion, refugee movement, and clandestine labour migration" (İçduygu, 2012). Therefore, a large Turkish population still resides in Germany.

Since Turkish population is the biggest minority group residing in Germany it is at utmost importance to understand the differing points between German and Turkish population's reaction regarding their fertility preferences in times of big scale crises such as during a worldwide pandemic, namely, COVID-19. It is also of importance to compare and contrast distinct migrant populations' fertility preferences to identify the differing points in their particular responses during the crisis. Thus, one of the other migrant groups of interest is the Polish migrants in Germany. A report by DESTATIS (2021b) stated that seasonal workers in German agricultural work made up one thirds of the total agricultural labourers. Nearly 272,000 of agricultural labourers in the total agricultural work force of 937,000 were seasonal workers. According to Biaback Anong (2023), Germany holds a "wanted migrant" standpoint regarding the seasonal workers. During the COVID-19 pandemic in March 2020 a policy prohibiting the entry of seasonal workers caused a lack of workers in agriculture. This policy was short-lived and ended in June of 2020. During this period of time no political party was found to be in opposition regarding seasonal workers. Biaback Anong, in line with the report of Federal Statistical Office of Germany (DESTATIS), mentions that approximately 300,000 seasonal workers arrive at Germany annually. It is also predicted that 95% of the seasonal workers consists of

external migrant workers. The seasonal workers conventionally consisted of mostly Polish migrants although for the past ten years Romanian population has become the majority. This is a major opportunity to compare and contrast the Turkish migrant population with another migrant population with a similar goal to those of Turkish, although slightly different. The German Family Panel pairfam (Panel Analysis of Intimate Relationships and Family Dynamics) study allows us to compare people with Turkish background and Polish background, although Romanian comparison is not as possible due to the inferior observation count compared to the observation count of people with Polish background. Therefore studying the Polish population in Germany is important not only because they are the fifth most populous migrant group in Germany, a country that attracts many migrant groups from all over the world, but also because they have a bigger representation in the pairfam study compared to the other countries in the top five populous migrant group except from the Turkish migrant group.

The studies done in this area show that there are differences between countries as well as within countries. Also, different data around the world reveal that the migrant groups in countries are typically the most affected populations from COVID-19. Thus, differences between a country's different subgroups might be as prevalent as differences across countries. Zeman and Sobotka (2021), state that the migrant groups in Austria experienced an idiosyncratically bigger decline in the birth numbers during the COVID-19 pandemic. Nevertheless, authors could not identify any differences in the number of births between migrant and native populations in Spain in the same period. Hence, it is important to study the situation in the Germany for understanding the German case and the underlying factors in play. This study will be contributing to the area of research that native population and migrant groups might have different responses regarding their fertility preferences during the times of crises and the different migrant groups may also differ from each other in the respective area.

The main research questions are as follows:

1 – What are the effects of COVID-19 pandemic on fertility preferences in Germany?

2 – What are the effects of migration on COVID-19 outcomes on fertility preferences in Germany with a focus on Turkish and Polish migrant groups?

3 – How did the factors affecting the fertility preferences, including migration status, change between before and after the COVID-19 pandemic in Germany?

4 – What factors, including migration status, were effective in changes of fertility ideals and intentions in Germany?

To answer these questions the data collected by the German Family Panel pairfam will be used. Since the study's focus is the effect of the COVID-19 pandemic, the waves 10 and 11 will be used to detect ongoing trends in Germany regarding different nationalities' fertility preferences. Waves 13 and 14 will be used to detect any disruption to the ongoing trends during the pandemic's peak and the normalization process. The wave 12 is intentionally skipped due to the field research being disrupted by the COVID-19 pandemic lockdown. The multivariate analyses will be conducted for just before COVID-19 and one year later COVID-19 breakout happened. Since the COVID-19 breakout happened during the wave 12 of pairfam, the wave 11 of the survey will be used for before pandemic period and wave 13 will be used for after pandemic. By using these two waves an early response to a global pandemic without a chance of normalisation which might be in effect by the wave 14 will be detected. Finally, the findings will be interpreted using uncertainty and terror management hypotheses.

The next section presents literature review on fertility preferences, fertility history of Türkiye and Poland, fertility of migrant groups in Europe and the theoretical frameworks on the COVID-19 and fertility preferences nexus, namely uncertainty and terror management hypotheses. The third section is composed of data and methodology used in the study, while the fourth section provides the results of descriptive and multivariate analyses. Finally in the fifth section, a discussion and conclusion of the thesis is presented with recommendations for future work.

CHAPTER 2. LITERATURE REVIEW

2.1. Fertility Preferences

Fertility preferences are about the preference of the respondent in any area related to their fertility, for instance, the respondent's desire for more children, ideal family size, child-spacing, etc. According to Trinitapoli and Yeatman (2017), even though fertility preferences might be dynamic in their nature they are still important for determining the fertility. Some people might change their preferences according to the changes in their lives such as changes in the marital status. They argue that these changes are far from being random, they are "frequently patterned". Also, the dynamic nature of the fertility preferences has an inherent power of predicting short-term fertility which has important implications for overall fertility. Another study reveals that three quarters of interviewees in the Netherlands, 55% of interviewees in Switzerland, and 40% of interviewees in Hungary that reported they intend to have a kid in the next three years, were able to achieve this fertility goal (as cited in Philipov & Bernardi, 2012). This finding supports the importance of the self-reported fertility intentions are important for detecting future fertility behaviour and therefore, an area that requires further emphasis and further study.

It is also important to note that fertility ideals and desires are even though highly studied, does not always give a perfect image of fertility. Girard and Roussel (1982) state that ideal number of children has the advantage of being an individual opinion for their family. This means that it may be more freed from the societal norms and values. The reported ideal number of children tends to be lower than the actual number of children. Firstly, this could be explained by not yet completed fertility since most of the fertility studies are done on period fertility with women aged 15 to 49. Secondly, it might be due to the conditions and hardships the people face. For example, economic hardships may cause people, especially women due to the discrepancies between male and female wages, to work harder to achieve a satisfactory carrier to earn enough money to live by. The rising cost of children reinforces this hardship and further weight down on people to achieve their ideal number of children. Philipov and

Bernardi (2012) also state that disparities between ideal and actual fertility may shed light upon the effects of current conditions. Hence, in this thesis, the effects of COVID-19 can be seen.

The pairfam waves that will be used in this thesis will enable the ability to see the current conditions' effect on the answers to the ideal number of children. The COVID-19, while affecting different people in differing levels, may or may not change people's fertility preferences. As another perspective, Gustavus and Nam (1970) state that ideal may reflect a societal norm on how many children a family should have. This is mainly because it was seen that most of the couples tend to state 2 to 4 children at that time, which was mainly the norm in the society. If this perspective is used to interpret any change in the ideal number of children after the COVID-19 pandemic, it would be fair to argue that COVID-19 pandemic might have had an effect on the societal norm change. Although more studies should be done before stating such an effect might be the case since many other phenomena might be happening at the same time in a society, COVID-19 pandemic was one of the biggest things happening at that time.

2.2. Fertility of Türkiye and Poland in a Historical Perspective

According to Abbasoğlu Özgören et al. (2022), Türkiye's policies on fertility changed throughout the history. Until the year 1955, the policies were directed to the goal of increasing the fertility. In line with this goal any kind of contraceptive methods, including abortion was banned and the minimum age requirement for married was decreased to 15 for females and 17 for males. From 1955 to 1980 antinatalist policies were introduced to reduce the high fertility. To achieve a decrease in fertility, the ban on contraceptive methods was revoked and abortion was legalised only when the mother's life was threatened, or the embryo was found to be "defected". Abortion was further legalised for mothers who wished to have an abortion before the fetus became 10-weeks-old. After 2008, a pronatalist approach was accepted by the government officials. Some pronatalist policies were introduced and these policies were reinforced with attitudes and speeches of the policy makers. Using the Turkey Demographic and Health Survey (TDHS) data from 1993, 1998, 2003, 2008, 2013, 2018, Abbasoğlu-Özgören et al. (2022) state that the ideal number of children, which was 2.4 in 1993,

rose to 2.5 in 2003, 2.7 in 2013, and 2.8 in 2018. However, the desired number of children continuously fell at the same time. In 1993, the desired number of children was 3.1, while in 1998 it was 2.9. It fell further in 2008 to 2.8, in 2013 to 2.7, and in 2018 to 2.4. Meanwhile the total fertility rate (TFR) of Turkish women was 2.5 in 1993, 2.6 in 1998, 2.2 in 2003 and 2008, and 2.3 in 2013 and 2018. The adjusted TFR was 4.1 in 1993, 3.8 in 1998, 3.2 in 2003, 3.0 in 2008, 2.7 in 2018. The increase in the ideal number of children is in line with the politicians' speeches that is directed towards the fertility starting from 2008. However, the decrease in the fertility during that period of time widened the gap between ideal number of children and the actual number of children. The percentage of women having less children than their ideal number of children has increased from 30% to 54%. This is a substantial rise to be considered delicately. The most recent TFR in Türkiye is reported as 1.51 in 2023 by the Turkish Statistical Institute (2024). This points out to a possibility of further widened gap between ideal number of children and actual number of children in Türkiye.

In the case of Poland, Sobotka (2011) argues that profound changes came to effect in Central and Eastern Europe after the crash of the socialist system. There were many new emerging aspects changing peoples' lives. In Sobotka's words (2011: 247), "*new political and social freedoms, harsh realities of the transition to market economy, the emerging poverty, income inequalities and unemployment; new consumer choices and opportunities as well as constant changes in social and welfare policies*" were some of those profound changes. Additionally, long-lasting changes emerged in every aspect of life such as fast development of universities. These long-lasting changes caused more diversified lifestyles and more solid social strata to sprout with two new strata, namely "rich people and the very poor". These lifestyles were more incompatible with children and familial life; hence, postponement of marriage and fertility occurred. After some time when the social and economic life started picking up, a relative increase in total fertility rates could be seen in some countries. Understanding the fertility decline around the 1990s with this political, social, and economic changes in mind is important to have a holistic grasp on the issue of fertility.

Poland maintained a 4-5 total fertility rate until 1920s (Sobotka, 2011). After the Second World War, some countries, including Poland, were under the Soviet influence. In these Soviet satellite countries, imposed political and institutional structure robbed them of democracy and freedom causing a relative convergence of family and fertility norms due to the isolation from the outside world. This caused the Central and Eastern European countries to experience a quicker decline in fertility rates before 1970s compared to the Western European countries. In 1970s with the emergence of second demographic transition characterized by cohabitation in the Northwestern Europe (Lesthaeghe, 1995), Western Europe experienced lower fertility rates compared to Central and Eastern European countries. The collapse of socialist regime between the years 1989 and 1991 in the Central and Eastern Europe led to many political and demographic events happening in the area. These events caused a major remapping of the European political atmosphere which paved the way for the European Union to accept more countries in their organization, one of which was Poland. After the collapse of the socialist system, the once state-socialist satellite countries of the Soviet Union experienced before mentioned turmoil which led to a substantial decline in their fertility. In the words of Sobotka (2011: 260), "*Within a decade, the CEE (Central and Eastern European) region has shifted from being a highest-fertility region of Europe to being one with the lowest-low fertility rates*". After the fall of state-socialist regimes and the substantial decrease in fertility, Central and Eastern Europe started to approximate, but not converge, with the rest of Europe in terms of total fertility rates, mean age at first birth, teenage fertility rates, non-marital births and cohabitation, decline in abortion rates and rise of the usage of other contraceptive methods. Poland had a total fertility rate of 2.10 in 1989. The lowest TFR for Poland was 1.22 in 2003 and their fertility level stayed below 1.3 for 5 years. However, in 2009 the TFR for Poland was 1.40 which means that there has been a 0.18 increase and 20% recovery of the decline in TFR (Council of Europe, 2006, Eurostat, 2010 and 2011, VID-IIASA, 2010, Human Fertility Database, 2010, national statistical offices, as cited in Sobotka, 2011). Sobotka (2011) then argues that these changes in fertility patterns and behaviours can be explained by four major phenomena, namely, "economic crisis and uncertainty", "second demographic transition", "postponement transition", and "contraceptive revolution". For economic crisis and uncertainty, the

author mentions that the level of effect of the economic crisis were different for every country. There were different levels of emerging poverty, increasing income disparities, decreasing living standards, shortcomings of provision of fundamental social and healthcare services. These negative effects were reflected as reasons to decrease fertility as a result.

Macura (2000) argues that in the post-Soviet countries, fertility decline was caused by decreasing wages, increasing unemployment, decreasing state support for families, increasing traditional understanding of roles of women in the family, increasing numbers of people obtaining university education, and increasing use of modern contraception methods other than formerly mainly used method which is abortion. First three of the above-mentioned reasons can be understood as a result of economic crisis and it is clear that these are also causing an increase in (economic) uncertainty. Another work by Ranjan (1999) on former Soviet countries and Eastern Europe holds proof for the uncertainty phenomena. In his work he finds that any rise in income uncertainty causes further postponement in the decision for having a child. He argues that there is a threshold income level, and this threshold shapes the fertility behaviour of individuals. For instance, if someone is above that said threshold, they might want to have a child instantly; whereas people under that threshold level of income most likely to wait for the uncertainty to diminish. This threshold rises or recesses directly with the uncertainty in the country. Therefore, the fertility decline in the post-soviet satellite countries in their recovery period might be associated with rising uncertainty and decrease in wages during this period. Philipov (2003), mentions two basic explanations to the fertility changes that happens in post-soviet countries: “the economic approach” and “the ideational approach”. Under the economic approach, he argues that relative deprivation where people see themselves worse-off compared to many others were at play as one of the economic explanations which is both a social and an economic phenomenon. Another socio-economic factor, according to Philipov, is the longer education trend due to a rising human capital requirement. He accepts this as a socio-economic aspect instead of being an ideational change due to the changing labour market demands and the tendency of people with higher education to choose a career path over a domestic family life, hence the

postponement of family building decisions. He also mentions economic uncertainty, increasing housing problem due to the decreasing wages. In the case of ideational approach, "secularization, rising female autonomy, rising expressive individualism" are mentioned to have played a role in loosening the norm of high fertility. Another important aspect the author mentions is Durkheim's theory of "anomie". Philipov uses the term "discontinuity" to include related phenomena to anomie such as alienation, lack of order, orientation, or satisfaction. He acknowledges anomie's role in creating uncertainty and fall of old norms and values. In his study, anomie is said to cause a decrease in the desire to have children. It is important to note that such big discontinuities in times of crises are important to understand the changes in fertility intentions and behaviours.

2.3. Selected Literature on Fertility of Migrant Groups in Europe

A study by Wolf (2014), looks at the difference between native German fertility rates and Turkish descent fertility rates in Germany as well as fertility rates in Türkiye. According to this study there were 3 million people of Turkish ancestry constituting 3.6% of all population in 2011 in Germany. The author also emphasizes that understanding the Turkish fertility behaviour is at the utmost importance since the Turkish population is the most populated migrant group in Germany. The result of the study shows that there is a big difference between German and Turkish population's fertility behaviours. The first difference is that German fertility and Turkish migrant fertility reaches different peaks at different ages. The German age specific fertility rate reaches its peak approximately at 28 years of age at around 0.125 for females and 30 years of age at around 0.085 for males, whereas Turkish migrant age specific fertility rate reaches its peak approximately at 22 years of age at 0.165 with a second rise at 27 with 0.145 for female and 26 years of age around 0.16 for males in 2005/06 derived from the data of German Gender and Generations Survey 2005/06. The second big difference between the two populations is their mean age at first childbirth. The German population has a mean age at first childbirth of 29.7 while the Turkish migrant population has a mean age at first childbirth of 25.7. This enables Turkish migrant group to experience a longer period of childbearing which is one of the factors that contributes to higher fertility rates in general. An interesting finding the study unearths

is that Turkish migrants' duration of stay affects the fertility risk of having a first birth to the extent that it decreases below the German fertility risk. This finding also makes it much more important to study the Turkish migrants since the situation is not simply a cohesion with the German fertility level. There is still a difference between the two fertility behaviours whether it is towards a negative or a positive direction. Another finding of this study is the higher risk of having a higher birth order of Turkish migrant population. Their birth order is constantly higher throughout the time period of their stays. This shows that apart from the changing risk of first birth, there are still constant differences between the two populations which points out some inherent differences' existence. Therefore, from this perspective it can be expected that these two populations will have different reactions regarding their fertility preferences in times of crises.

Another study in the field is done by Krapf & Wolf (2015) making use of 2005 and 2009 German Mikrozensus. This study shows the difference between Germans, 1.5 Turkish migrants which means people who migrated before age 15, and second-generation Turkish migrants. In this study, the median age at first birth for Germans were found to be 31.3, for 1.5 generation of Turkish migrants 24.3, and for the second-generation migrants 27.3 years of age. When they look at the level of childlessness, they found that by the age 37, it was higher for the German population, lower for the second-generation of Turkish migrants, and lowest for the 1.5 generation of Turkish migrants. Another finding they reached was that Turkish migrant women tend to begin their childbearing process earlier and have longer child-spacing when compared to German origin women. The discrete-time hazard model they use show that the second-generation Turkish migrants have a higher annual risk of first birth than the German origin population and a lower annual risk of first birth than that of the 1.5 generation of Turkish migrant population. In their endeavour the authors found that "*family values learnt through childhood socialisation are of great importance and play a role in later fertility behaviour of migrants' descendants*". Therefore, it can be inferred that although there is an adaptation factor at play, the German population and Turkish migrant population still has their differences regarding their fertility behaviours.

A study done by Guarin Rojas et al. (2018), show that different migrant groups may have different fertility patterns in the same country. This study done in Switzerland show that the migrant groups may only follow the country of residence's fertility trends. According to the authors, different migrant groups had different fertility rates both when compared to each other and compared to the Swiss population. For instance, the Turkish, ex-Yugoslavian, and African migrant population had total fertility rates between 2.01 and 2.3, which is higher than that of native Swiss population with 1.81, whereas Southern European, German, and French migrant population had total fertility rates of 1.6 and 1.7 which are lower than that of native Swiss population. Therefore, it is important to look at different migrant populations in the receiving country to detect the similar and different fertility preferences to understand the general scenery for the case of Germany better and to detect the "similar populations" in terms of their responses in times of crises and which factors might be the reasons for the similar or different preferences.

A study done by Cygan-Rehmn (2014) which makes use of German Socio-Economic Panel Study (SOEP), shed some light on Germany case regarding the fertility differences between native and migrant populations. The foreign population in Germany constituted 9 percent of the population and 19 percent of the population had a migrant background in 2010. After ruling out the German-born migrants and only studying the 45 years old and older women who had completed their fertilities, the author found that the migrant population has approximately 0.776 more children compared to natives in the same birth cohort. The author states that there is a link between the country of origin and the migrant population. In the study, it is found that 1-point increase in the TFR of country of origin equals a 0.45-point increase in completed fertility of migrant population in Germany. Therefore, even though there might be differences between the country of origin's TFR and migrant population's TFR, there is still a big difference between migrant population's TFR and native population's TFRs.

Regarding the case of Polish population, a study on the fertility of Polish immigrants in United Kingdom done by Waller et al. (2014) revealed that the Polish population in UK has lower age specific fertility rates than the immigrants of Pakistan,

Bangladesh, India, and also the people born in United Kingdom, making the Polish immigrants the lowest fertility group. This finding is important because it is a different finding than the study of Zumpe et al. suggested in 2012. The authors acknowledge that this differentiation might be due to the use of different methods. Another important finding of Waller et al. (2014) is that Polish immigrant population in the United Kingdom are slightly delaying the births compared to the women in Poland. The authors point out that this might be due to the characteristics of Polish migrant population compared to those who stayed. Also, the total fertility rate of the Polish migrant population is higher compared to the women in Poland even if it is a small difference. This might be an indicator of cohesion since people born in the United Kingdom has higher fertility than both women in Poland and Polish immigrants. Studying Polish immigrants in the United Kingdom is said to of importance by the authors due to the fact that Polish immigrants are the second most populous migrant groups in the country.

2.4. COVID-19 Pandemic and the Theoretical Framework

When studying the effects of COVID-19 pandemic on fertility preferences a need to define COVID-19 pandemic as a crisis arises. It is without a doubt one of the biggest challenges the humanity had to face. According to Abdelrahman (2022), it was a unique crisis in the sense that policy makers had to make a hard decision between saving people or the economy. Another importance of the COVID-19 pandemic as a crisis is that it made the border between mental wellbeing, "economic, political, social and moral crisis" with the countries that had to close its borders, had to set a curfew, and with many lives lost. According to ILO, FAO, IFAD and WHO (2020), "*In COVID-19 crisis, food security, public health, and employment and labour issues, in particular workers' health and safety, converge.*". This statement points out to a multi-faceted crisis. The UN (n.d.), defined COVID-19 pandemic in their own words: "*The COVID-19 pandemic is more than a health crisis; it is an economic crisis, a humanitarian crisis, a security crisis, and a human rights crisis.*". Therefore, it can be said that COVID-19 crisis was not a one crisis but a multitude of crisis in merged in one global crisis. The multi-layered nature of COVID-19 pandemic makes it even

more important to study its effects in every related area of study. Hence, I will try to summarise its effect on the area of fertility.

According to the Organization of Economic Co-operation and Development (OECD, 2022), the first months of COVID-19 pandemic had a severely higher impact on immigrants compared to the native populations. Even after a long time has passed from the start of the pandemic, the consequences are still much more severe for migrants than natives. OECD states that for nearly all countries with available data on COVID-19 including Canada, Denmark, France, Germany, Italy, the Netherlands, Norway, Portugal, Sweden, the United Kingdom and the United States, with the exception of Ireland, migrant populations are at a higher risk of catching the corona virus compared to the native population. Along the factors causing this gap between the two populations are "poorer housing conditions with higher incidences of overcrowding" and "overconcentration in areas with higher population density" which are related to fertility and fertility preferences. Another finding that is at the utmost importance is that the migrant populations are much more reluctant to have the vaccine compared to the native population. This finding might further reinforce the difference between the effects the COVID-19 pandemic has on the migrant populations and native population in the long term. The vulnerability of migrant populations is also higher in the work environment than that of native population due to the migrant populations generally being at the lower levels of hierarchy in the workplaces and due to the nature of migrant work being less stable. This is also important because childbearing is not only a biological phenomenon but also a phenomenon that is highly related to the cost of children. According to Espanshade (1972), demographers had been theorizing that the rising cost of children has played a part on the decreasing family size which can be seen as early as in the 1946 work of Dublin and Lotka's "The Money Value of Man". Therefore, it can be hypothesized that COVID-19 has an indirect effect on fertility preferences by directly affecting the economic conditions of people. Since the effects of COVID-19 pandemic are generally more drastic for migrant populations than for native population, it can be expected that migrant and native populations might have different responses regarding the changes in their fertility preferences after the pandemic. According to Centers for Disease Control and

Prevention (CDC, 2022), COVID-19 might cause various physical and mental health problems to the people contacted for a short or a long period of time. The changes to their health conditions and well-beings might cause the affected person to change their fertility preference in short term or permanently. Hence, it can be argued that COVID-19 might not only have an indirect effect on fertility preferences by affecting the economic conditions of the people but also have a direct effect by affecting the physical and mental health of the people for a short or a long period of time. As mentioned before, since the size of this effect differ for different populations with different backgrounds, the fertility preferences are expected to differ as well.

Uncertainty Hypothesis and Terror Management Hypothesis

The two frameworks that can used to understand the COVID-19 and fertility preferences nexus are uncertainty hypothesis and terror management hypothesis.

Vignoli et al. (2020: 26), argues that uncertainty of the future, in any area of life, intervenes in long-term life decisions, one of which is the fertility choices. They argue that "*recent economic developments in Europe—namely, the increasing speed and volatility of outcomes of globalization, and the new wave of technological changes—have amplified uncertainty in people's life, adding a contingent component of economic uncertainty.*" The economic uncertainty creates further difficulties for choosing between two or more options for the future. The authors continue mentioning that there are many other uncertainties in different areas of life such as Beckert's "Social interaction uncertainty", Elster's "Information gathering uncertainty", and Lane and Maxfield's "Ontological uncertainty" (Beckert, 2016, Elster, 2009, Lane and Maxfield, 2005, as cited in Vignoli et al., 2020). Even though there are many other types of uncertainty, the economic uncertainty has been at the centre of demography as a discipline. The uncertain times were found to be the times when the fertility decreases by many scholars. For instance, Kohler et al. (2002), argue that uncertainty about value of children, economy, and marriage may cause the emergence of postponement of fertility, which causes a decrease in completed fertility due to the narrowing span of fertility window. The COVID-19 pandemic caused uncertainties in many areas or increased the effects of already existing uncertainties. A big uncertainty

that was caused by COVID-19 was the economic uncertainty. Many people feared they might lose their job while some people actually lost their jobs. Some jobs were able to adapt to the curfews that was put into effect by turning the nature of the work to work-from-home; however, not every job allows such an adaptation due to their one-on-one or manual work nature. Therefore, this hypothesis is important to test to make COVID-19 pandemic's effects more visible or understandable.

The terror management hypothesis is a psychologically rooted theory created from the work of Becker, titled "The Denial of Death" (as cited in Fritsche et al, 2007). At the base of the terror management hypothesis lies a fear of death in the face of its crushing unavoidability. It is theorised that when people are reminded of their inevitable demise, they tend to change their behaviour to cope with the anxiety created through the fear of mortality. Fritsche et al. (2007) mention that one of the coping mechanisms to the anxiety is to increase one's self-esteem. Reproducing becomes a way to achieve that through creating a human and transmitting one's values and biological traits. The child, in a sense, becomes a younger version of the parents. Hence, the parents achieve a symbolic immortality through their kids. Even though they do not think they believe they are achieving immortality, the kids tend to live longer than the parents, which means that even after the passing of the parents, the impact of their kids in the world lives on, and they live on through that impact. Therefore, it is theorised that feelings like fear of death and anxiety might cause an increase in fertility preferences and behaviours. The COVID-19 crisis surely increased such feelings all around the world in every age group and generation. Due to the fact that these feeling were surely caused by a pandemic which had various negative effects in multiple areas of life, this hypothesis also needs to be tested when one talks about COVID-19 pandemic's effects on fertility preferences.

Nitsche and Lee (2022), show in their recent work "Emotion and Fertility Intentions in Times of Disaster: Conceptualizing Fertility Responses to the COVID-19 Pandemic and Beyond" which uses The German Family Panel (pairfam) that the feelings created by COVID-19 pandemic such as anxiety, anger, loneliness while having an effect on the fertility desire of the respondents, this relation is not statistically significant. They find some support for terror management hypothesis

which argues that general anxiety, loneliness and anger will increase fertility desires. Their study supported this hypothesis for feelings of anxiety and anger but not for loneliness. The results also supported uncertainty hypothesis to a limited extent which argues that worrying about economic conditions, health, and social stability decreases the fertility desires. This weak support for uncertainty hypothesis was only for economic worries. Even though there is a weak support for economic worries causing a decrease in fertility desires, the authors find out a non-significant but positive relation between worrying about finances or health and higher fertility desire which is a further support for terror management hypothesis.

CHAPTER 3. DATA AND METHOD

3.1. Data

The data from The German Family Panel (pairfam – Panel Analysis of Intimate Relationships and Family Dynamics) will be used to make use of the descriptive statistics and multivariate analyses to answer the research questions. The German Family Panel is "a multi-disciplinary, longitudinal study for researching partnership and family dynamics in Germany.". The survey data is collected annually nationwide with a randomized sampling method from "more than 12,000 persons of the three birth cohorts 1971-73, 1981-83, 1991-93 and their partners, parents, and children". There are 14 waves of collected data in the panel. In wave 11, a new birth cohort of 2001-03 was added. The German Family Panel is a cooperation project between University of Bremen, Friedrich Schiller University Jena, University of Cologne, and LMU Munich. To gain a full understanding of the family life, the respondents who are called "anchors" are interviewed and asked for consent to conduct additional interviews with their partners, parents, and children older than 8 years of age.

3.2. Method

The data will first be used to have an understanding of the distribution of the sample and general characteristics and background of the respondents. Since the study's goal is to detect the different responses of natives and migrant groups in

Germany to COVID-19 pandemic the migrant groups with enough cases for appropriate analyses will be included in the study. As expected, observation numbers of Turkish migrants are able to fulfil this precondition given that they are the biggest migrant group in Germany[4]. Polish migrants is the migrant group in the top five in Germany which also has enough representation in the pairfam study. Hence, Polish population which is the fifth biggest migrant population in Germany has been found to have enough representation to run the relevant tests. The Polish population holds a potential to compare with Turkish migrant population for several reasons. First of all, as mentioned before it is a migrant population known for doing agricultural seasonal work in Germany. Secondly, they differ from Turkish population in terms of religion. According to the Office of International Religious Freedom (2022a; 2022b), 85% of the people living in Poland are Roman Catholics whereas 99% of the people living in Türkiye are Muslim. This enables a religious background comparison between two different migrant populations both of which are famously known to migrate to Germany for work whether, in Turkish case, as a "Gastarbeiter" or in Polish case, as a seasonal worker.

After the descriptive statistics are used to detect the distribution of the respondents' characteristics and migrant groups are selected, the research questions will be answered by using related statistical methods. To answer the first research question which is "What are the effects of COVID-19 pandemic on fertility behaviours and preferences in Germany?" the trends on fertility preferences will be detected by using the waves 10 and 11 to see the prevalent preferences before the COVID-19 pandemic. After the before pandemic period is understood, the waves 13 and 14 will be used to detect if there are any changes to the pre-existing fertility preferences and trends. To assess the fertility preferences, the variables of "ideal number of children,

[44] It was first thought the Syrian migrant population would be the second migrant group; unfortunately, this was not possible due to the fact that Syrian population is underrepresented in the pairfam study. The main reason for that is the pairfam panel study first started at year 2008. Years before the Syrian Civil War in 2011 which set into motion a huge migration movement from Syria to Europe. Since pairfam is a panel study and it continued with the same set of people annually with the exception of a refreshment sample in wave 11 the Syrian population has not enough representation to enable any analysis.

"realistic birth intention", and "birth intention in the next 2 years" are used. The questions in the questionnaire to retrieve this information are as follows:

- For ideal number of children:

"Assuming ideal circumstances: How many children would you like to have altogether?"

- For realistically additional children:

  - to the childless respondents:

"When you think realistically about having children: How many biological or adoptive children do you think you will have?"

  - to the respondents with children:

"When you think realistically about having additional children: Do you think that you will have further biological or adopted children in addition to your current (step)children?"

- For intention to become a parent in 2 years:

"Do you intend to have another child within the next two years? Meaning, another child after the one you are currently expecting."

The trends in these variables will be assessed according to the migration status of the individuals. Therefore, the second research question "What are the effects of migration on COVID-19 outcomes on fertility preferences with a focus on migrant groups, specifically Turkish and Polish in Germany?" is answered.

In the multivariate analyses employing logistic regression, mainly determinants of the two fertility preference outcomes will be analysed: fertility ideals higher than the norm of two children, and realistic birth intention for the periods before and just after the COVID-19 pandemic. These analyses will answer the third research question of "How did the factors affecting the fertility preferences, including migration status, change between before and after the COVID-19 pandemic in Germany?". Finally, the changes in the variables of ideal fertility and realistic birth intention in the sample will

be assessed by generating new variables from the change in the answers to the same questions between Wave 11 and Wave 13. The variable of interest and covariates used in the analyses are migration background (variable of interest), age group, sex, region, type of settlement, number of children ever born, employment status, and education. These analyses will answer the last research question of "What factors, including migration status, were effective in changes of fertility ideals and intentions in Germany".

Six models are constructed in multivariate analyses, and their dependent variables are as follows:

Model 1 (determinants of high ideal fertility before the COVID-19 pandemic):

Y=0 if ideal number of children ≤ 2 in wave 11

Y=1 if ideal number of children > 2 in wave 11

Model 2 (determinants of high ideal fertility after the COVID-19 pandemic):

Y=0 if ideal number of children ≤ 2 in wave 13

Y=1 if ideal number of children > 2 in wave 13

Model 3 (determinants of realistic intention for birth before the COVID-19 pandemic):

Y=0 if no realistic birth intention in wave 11

Y=1 if there is realistic birth intention in wave 11

Model 4 (determinants of realistic intention for birth after the COVID-19 pandemic):

Y=0 if no realistic birth intention in wave 13

Y=1 if there is realistic birth intention in wave 13

Model 5 (determinants of abandonment of high norm of ideal number of children; analysis group: high fertility norm population):

Y=0 if ideal > 2 in wave 11 → ideal >2 in wave 13 (Persistently high fertility norm)

Y=1 if ideal > 2 in wave 11 → Ideal ≤ 2 in wave 13 (Abandoners)

Model 6 (determinants of change of intention to become a parent from positive to negative; analysis group: realistically planning birth population):

Y=0 if birth intention in wave 11 → birth intention in wave 13 (Still planning)

Y=1 if birth intention in wave 11 → no birth intention in wave 13 (Abandoners)

As mentioned before, the independent variables are migration background, age group, sex, region type of settlement, number of children ever born, and are X_1 to X_k and β_0 to β_k are the regression coefficients in Equation (1). The odds ratio of the logistic regression which is the ratio of probabilities of the event happening and not happening is used after taking the natural algorithm of the ratio to interpret the results. The end value to base the interpretation is therefore the value of the odds ratio which is denoted as exp(β).

The above mentioned dependent variables and independent variables of migration background (Natives, 1st generation Turkish, 2nd generation Turkish, 1st generation Polish, 2nd generation Polish), age groups (14-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-51), sex (Male, Female), newly generated Germany regions (East, West), Type of Settlement (Rural, Urban), children ever born (0, 1, 2, 3, 4+), work status (Employed, Unemployed), and education level (No education, Lower Secondary, Upper and Post Secondary, Tertiary) are shown. The reference group for each independent variable are as follows:

For migration background, natives are selected as the reference group to compare the two different migrant groups with two different generation level more easily. For age groups, 25-29 category is selected because it is the highest fertility group in developed countries like Germany. For sex, males are selected as the reference group to enable talking about female fertility more easily. For German regions, west is selected as the reference groups because it is the one with the more observations between the two. For type of residence, rural was selected to be able to talk about urban more easily. For parity, 2 children category is selected as reference due to the prevalent 2 children norm. For work status, unemployed is selected to be able to talk about employed more easily. For education level, "No education" category

is selected as reference to compare education levels starting from the no education level.

CHAPTER 4. RESULTS

This section is composed of two subsections: results of the descriptive analyses and results of the multivariate analyses based on the logistic regression results of the six models presented in the previous section.

4.1. Descriptive Analyses

Table 4.1.1. Males and Females by Waves

Wave		Males	Females	Total
Wave 10	2017/2018	2,176	2,573	4,749
Wave 11	2018/2019	4,412	5,022	9,434
Wave 12	2019/2020	3,530	4,099	7,629
Wave 13	2020/2021	3,227	3,781	7,008
Wave 14	2021/2022	2,383	3,017	5,400

To have a general understanding about respondent numbers for each waves Table 4.1.1 shows the number of males, females and the total number of people in the pairfam study by waves. It can be seen that for every wave, from wave 10 to wave 14, females are higher in number than males. The increase in wave 11 can be explained by the inclusion of the refreshment sample; a sample that was brought to compensate the diminishing number of interviewees (Brüderl et al, 2023).

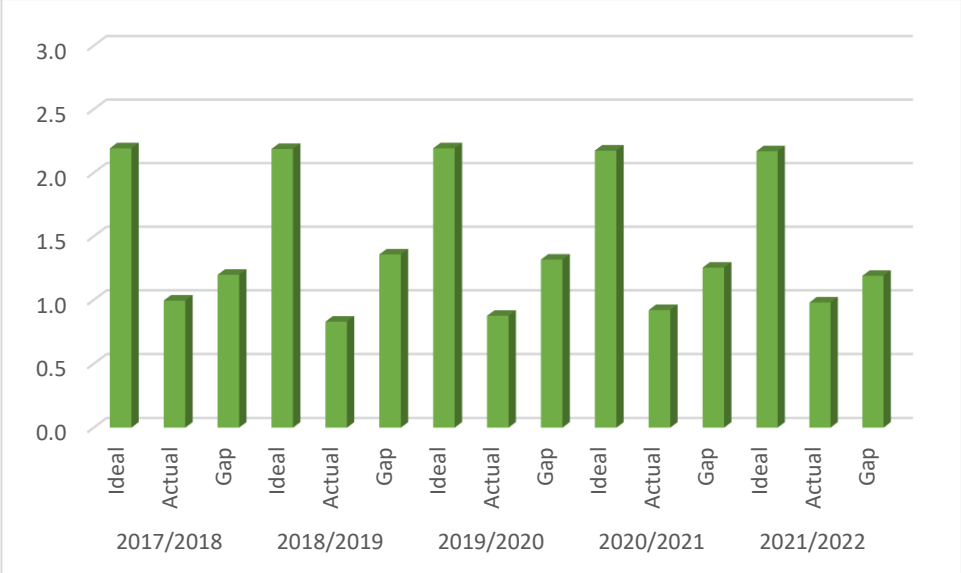
Table 4.1.2. Mean Ideal Number of Children and Mean Actual Number of Children, Both Sexes, Germany 2017-2022

	2017/2018			2018/2019			2019/2020		
	Ideal	Actual	Gap	Ideal	Actual	Gap	Ideal	Actual	Gap
All	2.2	1.0	1.2	2.2	0.8	1.4	2.2	0.9	1.3
Natives	2.1	1.0	1.1	2.1	0.8	1.3	2.1	0.8	1.3
1st Gen Turkish	2.6	1.8	0.8	2.4	1.9	0.6	2.4	1.7	0.8
2nd Gen Turkish	2.7	0.9	1.8	2.6	0.9	1.7	2.5	0.9	1.7
1st Gen Polish	2.3	1.3	1.0	2.1	1.0	1.1	2.1	1.0	1.0
2nd Gen Polish	2.4	1.0	1.4	2.1	0.7	1.4	2.0	0.8	1.2

	2020/2021			2021/2022		
	Ideal	Actual	Gap	Ideal	Actual	Gap
All	2.2	0.9	1.3	2.2	1.0	1.2
Natives	2.1	0.9	1.2	2.1	0.9	1.1
1st Gen Turkish	2.9	1.9	1.0	3.0	1.9	1.1
2nd Gen Turkish	2.6	0.9	1.7	2.5	1.0	1.5
1st Gen Polish	2.0	0.9	1.1	2.0	0.9	1.1
2nd Gen Polish	2.2	1.0	1.2	2.0	1.0	1.0

Table 4.1.2 shows the mean ideal number of children and mean actual number of children for both sexes for each wave and migration background. When we look at all the respondents without making any differentiation between migration backgrounds, we see that the mean ideal number of children does not change, and the mean actual number of children stays at around 1 child with fluctuation between the waves wave 10 and wave 14. Figure 4.1.1 shows the gap between the mean ideal number of children and mean actual number of children of all respondents. In the figure, the child gap is more prominently seen. The gap average reported by respondents are larger than the actual number of children which means that there are lesser children than what people deem ideal number of children. To achieve the ideal number, individuals have to have more children than they actually have. This might point out a current situation that disfavours having children that normally people would have wanted to have; although, it cannot be associated to COVID-19 because the gap was already high in the wave 11.

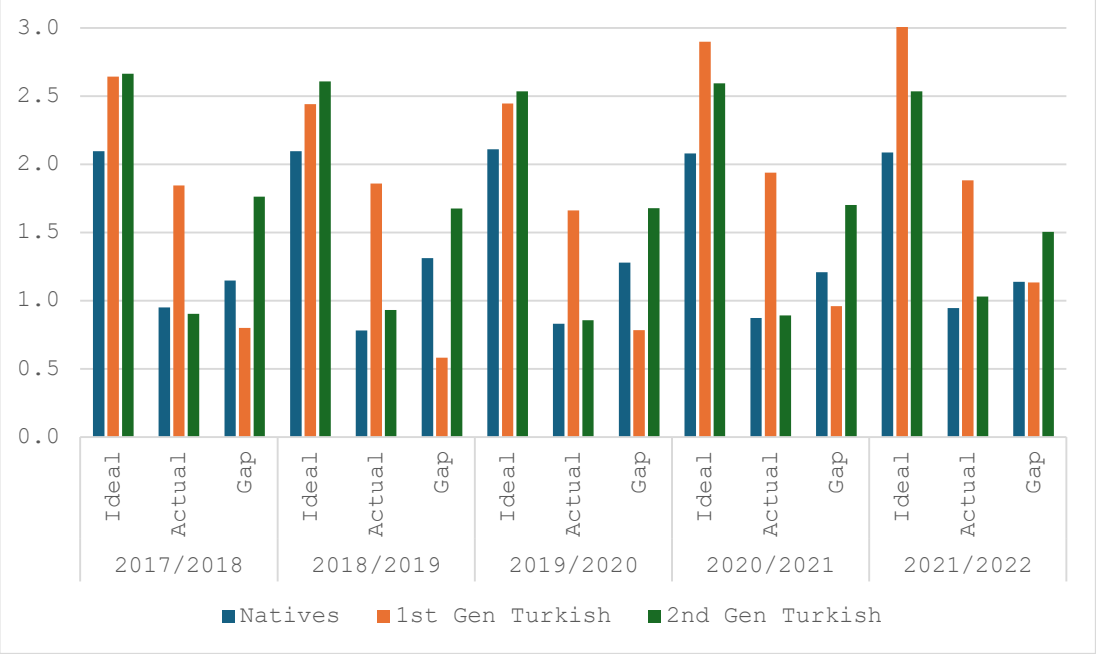
Figure 4.1.1. Total Mean Ideal Number of Children and Mean Actual Number of Children



For the German native population, the mean ideal number of children does not change as well but there is a 0.2 decrease from 2017/2018 in 2018/2019 and a 0.1 increase in 2020/2021 (Table 4.1.2). In the last wave, the mean actual number of children stays at 0.9, the same with the previous wave. For the native population we can say that there is not much of a difference between pre-covid and post-covid period regarding the mean ideal number of children and mean actual number of children. An interesting change occurs when we focus on 1st generation Turkish migrants. With the introduction of the refreshment sample the mean ideal number of children decreases by 0.2 but after the COVID-19 outbreak and lockdown happened in 2019/2020, which corresponds to the wave 12, their mean ideal number of children increases by 0.5 point in 2020/2021 and then it increases again by 0.1 in 2021/2022, which might point out to a shift in fertility preferences. Their mean actual number of children cannot catch up with this sudden increase and the gap between mean ideal number of children and mean actual number of children widens by 0.2 points. This is a slightly surprising finding if we consider the uncertainty hypothesis. The uncertainty hypothesis suggests that due to the uncertainty mainly in the economic sense the fertility preferences and

behaviours should decrease. This finding is more in favour of terror management hypothesis. In terror management hypothesis negative feelings experienced during a time of crisis increases the desire for fertility much like a coping mechanism which might be an explanation for the 1st generation Turkish migrants. However, this phenomenon cannot be observed among the 2nd generation Turkish migrants. For the 2nd generation Turkish migrants, the mean ideal number of children decreases by 0.1 until the wave 12, 2019/2020. After wave 12, it fluctuates by 0.1 point again to return back to the 2019/2020 value which is 2.5. Since their overall mean ideal number of children decreases and their mean actual number of children increases in the last wave, their child gap decreases from 1.8 to 1.5. To illustrate, Figure 4.1.2. shows the native, 1st generation Turkish and 2nd generation Turkish values. It is clear that the 2nd generation Turkish migrants are similar to 1st generation Turkish migrants in terms of their mean ideal number of children especially before the COVID-19 outbreak, while they are more similar to German Natives in terms of mean actual number of children.

Figure 4.1.2. Mean Ideal Number of Children and Mean Actual Number of Children – Natives and 1st and 2nd Generation Turkish Migrants



1st generation Polish migrants seem to be unaffected by the COVID-19 in terms of the mean ideal number of children (Table 4.1.2). Their mean ideal number of children were already in decline before the COVID-19 outbreak happened and this

decline slowly but surely continued after the COVID-19. The 2nd generation Polish migrants' mean ideal number of children decreases until 2019/2020 and it's met with an unexpected 0.2-point increase after the wave 12 when the COVID-19 outbreak emerged. However, this increase meets its end in the last wave which points out a return to wave 12 value which is 2.0. To compare natives and 1st and 2nd generation Polish migrants Figure 4.1.3. can be used. Figure 4.1.3. shows that although both 1st and 2nd generation Polish migrants were above the native mean ideal number of children it did not take too long for them to meet the native mean ideal number of children and experience a decline further behind the native values.

Figure 4.1.3. Mean Ideal Number of Children and Mean Actual Number of Children – Natives and 1st and 2nd Generation Polish Migrants

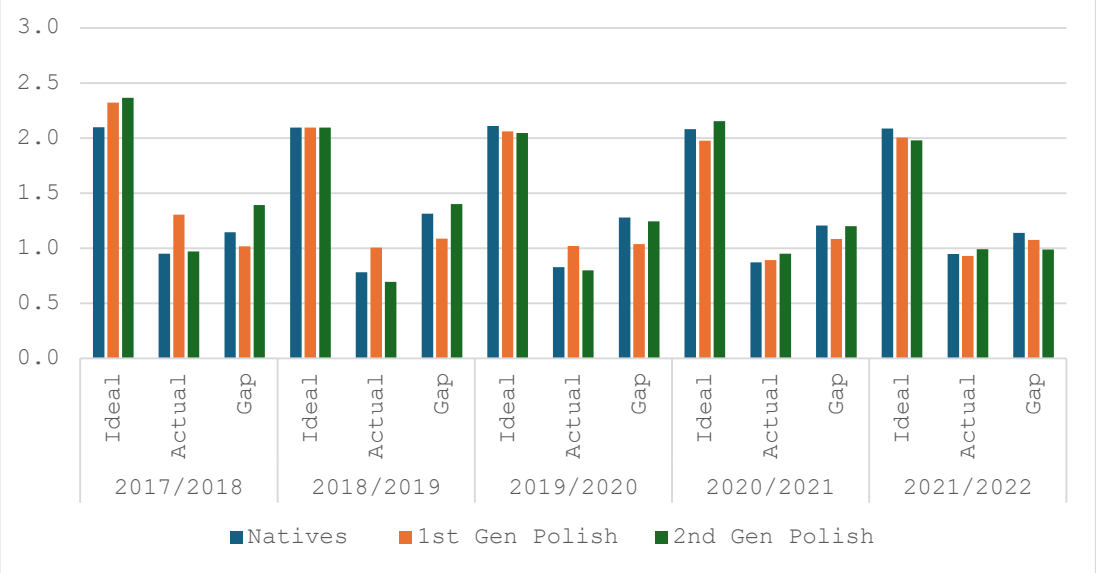


Table 4.1.3. Mean Ideal Number of Children and Mean Actual Number of Children, Males, Germany 2017-2022

	2017/2018			2018/2019			2019/2020		
	Ideal	Actual	Gap	Ideal	Actual	Gap	Ideal	Actual	Gap
All	2.2	0.9	1.3	2.2	0.7	1.4	2.2	0.7	1.4
Natives	2.1	0.9	1.2	2.1	0.7	1.4	2.1	0.7	1.4
1st Gen Turkish	2.7	2.0	0.7	2.5	2.0	0.5	2.6	2.0	0.5
2nd Gen Turkish	2.9	1.0	1.9	2.6	1.0	1.6	2.7	1.0	1.6
1st Gen Polish	2.2	0.9	1.4	2.0	0.4	1.5	2.2	0.5	1.6
2nd Gen Polish	2.3	0.8	1.4	2.0	0.6	1.5	2.0	0.6	1.4

	2020/2021			2021/2022		
	Ideal	Actual	Gap	Ideal	Actual	Gap
All	2.2	0.8	1.4	2.1	0.9	1.3
Natives	2.0	0.8	1.3	2.0	0.8	1.2
1st Gen Turkish	3.2	2.3	0.9	2.7	1.8	0.9
2nd Gen Turkish	2.6	1.1	1.5	2.7	1.0	1.7
1st Gen Polish	1.9	0.4	1.6	1.1	0.2	0.9
2nd Gen Polish	2.1	0.8	1.3	1.8	0.8	1.0

Table 4.1.4. Mean Ideal Number of Children and Mean Actual Number of Children, Females, Germany 2017-2022

	2017/2018			2018/2019			2019/2020		
	Ideal	Actual	Gap	Ideal	Actual	Gap	Ideal	Actual	Gap
All	2.2	1.1	1.1	2.2	0.9	1.3	2.2	0.9	1.3
Natives	2.1	1.1	1.1	2.1	0.9	1.3	2.2	0.9	1.3
1st Gen Turkish	2.6	1.7	0.9	2.4	1.7	0.7	2.2	1.7	0.5
2nd Gen Turkish	2.4	0.8	1.6	2.6	0.8	1.8	2.4	0.8	1.6
1st Gen Polish	2.4	1.6	0.8	2.2	1.3	0.9	2.0	1.4	0.6
2nd Gen Polish	2.5	1.1	1.4	2.2	1.0	1.2	2.1	1.0	1.1

	2020/2021			2021/2022		
	Ideal	Actual	Gap	Ideal	Actual	Gap
All	2.2	1.0	1.2	2.2	1.1	1.1
Natives	2.1	1.0	1.1	2.1	1.1	1.1
1st Gen Turkish	2.6	1.5	1.0	3.4	2.0	1.5
2nd Gen Turkish	2.6	0.7	1.8	2.4	1.1	1.3
1st Gen Polish	2.0	1.3	0.7	2.6	1.5	1.2
2nd Gen Polish	2.2	1.1	1.1	2.2	1.2	1.0

Table 4.1.3 and Table 4.1.4 gives the mean ideal number of children and mean actual number of children of all respondents, natives, 1st and 2nd generation Turkish and Polish migrants of males and females separately. Looking at all male and all female respondents irrespective of migration background, there is no difference in mean ideal number of children of females and males except for the year 2021/2022 with just a 0.1-point decline in males' mean ideal number of children. The mean actual number of children points out for a trend that females have more children than males. For each and every year females have 0.2 children more than their male counterparts. For native males and native females the difference in their mean ideal number of children is that the males' mean ideal number of children stays at 2.1 until COVID-19 outbreak and drops 0.1-points only after that, while females' mean ideal number of children starts at 2.1 like their male counterparts increases during the COVID-19 outbreak by 0.1 and then decreasing by 0.1, returning back to the their starting value of 2.1. The differences between mean actual number of children are the same with all respondents' differences. The Figure 4.1.4 and Figure 4.1.5 depict the main difference

between all male and all female respondents and the main difference is caused by the constant difference in their mean actual number of children values.

Figure 4.1.4. Mean Ideal Number of Children and Mean Actual Number of Children - Males

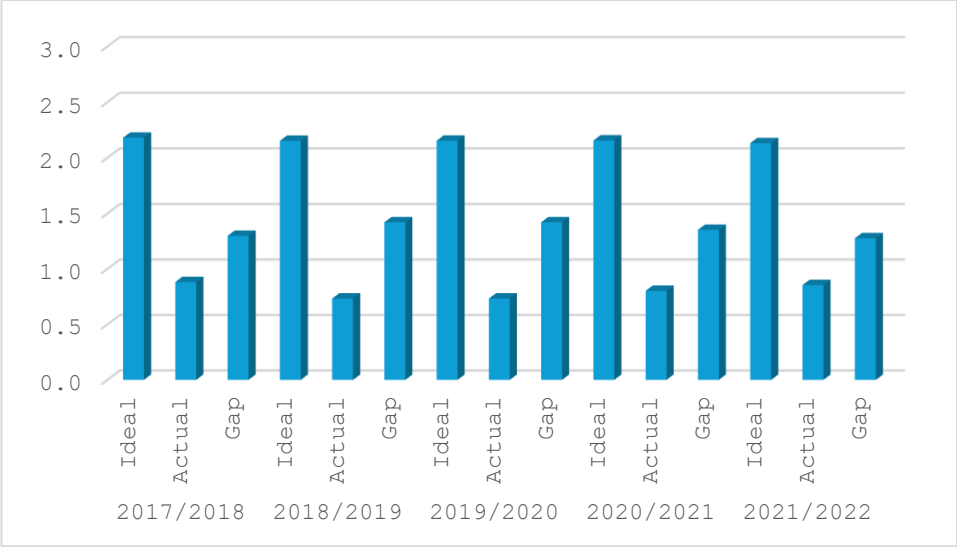
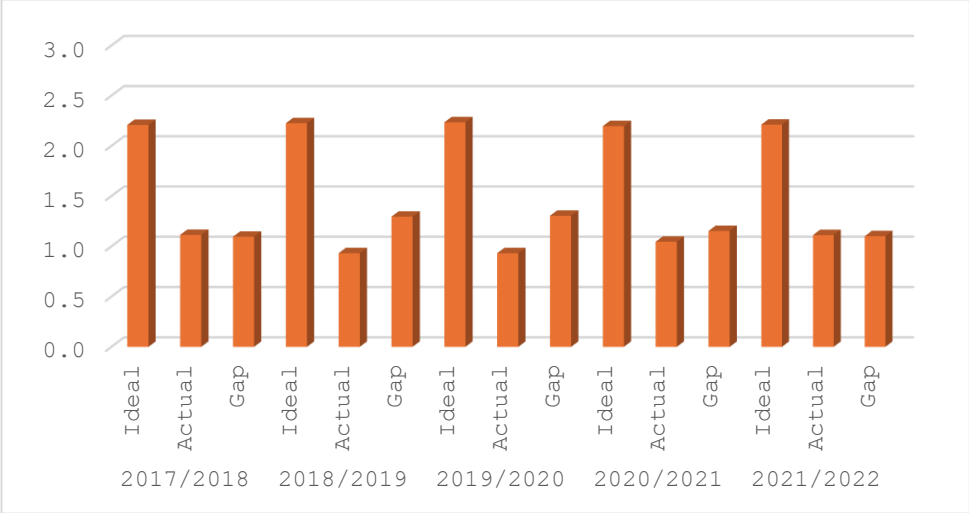


Figure 4.1.5. Mean Ideal Number of Children and Mean Actual Number of Children - Females



When we look at the 1st generation Turkish male migrants and 1st generation Turkish female migrants, we see that for wave 10 and wave 11 there is a 0.1 difference in mean ideal number of children but the wave 12, when the COVID-19 outbreak happens, females seem to have decreased their mean ideal number of children by 0.2 compared to an increase in males' mean ideal number of children by 0.1 (Table 4.1.3 and Table 4.1.4). One year after the COVID-19 outbreak, males have increased their mean ideal number of children by 0.6 and females increased their respective value by

0.4. However, while males decrease their mean ideal number of children by 0.5 in 2021/2022, females continued to increase their mean ideal number of children by 0.8. This may be due to a delayed response to COVID-19's effects compared to an immediate response of the 1st generation Turkish male migrants. This response is also in line with the terror management hypothesis where negative feelings experiences cause the fertility desire in the respondents. The mean actual number of children of the 1st generation Turkish males are higher than those of females except for the 2021/2022 wave. Therefore, the gap between ideal number of children and actual number of children is higher for females with the exception of 2019/2020 wave during the COVID-19 outbreak and lockdown. 2nd generation Turkish male migrants have generally higher mean ideal number of children than females. The two exceptions are right before the COVID-19 outbreak in 2018/2019 wave and right after the COVID-19 outbreak in 2020/2021. However, it can be seen that 2nd generation Turkish males have experienced a 0.2 decline from 2017/2018 to 2021/2022 while their female counterparts fluctuated between 2.4 and 2.6 only to return to 2.4 in 2021/2022. Because there is an approximately 1 children difference between 1st and 2nd generation Turkish migrants both for males and females, the child gap widens in 2nd generation. This might be due to the fact that their ideal number of children stayed similar to their 1st generation ancestors' "habitus" (Bourdieu, 1990), their actual fertility has undergone an integration process and approximated the natives' actual number of children. According to Kulu (2006), "socialisation hypothesis" argues that a person's upbringing, in which the person is subjected to the values and norms of the social environment, their "habitus", plays a crucial role in shaping their fertility actions and preferences in their future. I argue that this can be seen here just for the ideal number of children as a value of their parent's habitus which becomes their habitus at a lower level. Hence, the 2nd generation respondents state a higher number of ideal number of children than natives and a closer number to 1st generation migrants. On the other hand, "adaptation hypothesis" argues that the present social environment is more important than the past in shaping the person's preferences and actions regarding fertility. I argue that this might be the case for the actual number of children of 2nd generation Turkish migrants since they show a much closer number of actual number of children. Even though in their house they are subjected to high level fertility values and norms, their

socialisation with German natives, arguably, shapes their actual fertility behaviour. However, the values they are used to in their childhood homes with their parents or their trip back to their country with their families are still able to show themselves through the norm of high ideal number of children. It is important to note that the 2nd generation Turkish migrants are not the ones who actually migrated. Therefore, this theory is only used to paint a relevant picture of how the socialisation might be affecting the ideal and actual fertility behaviours, and not the adaptation process.

When we look at the 1st generation Polish male and female migrants, we see that with the exception of wave 12 in 2019/2020, during the COVID-19 outbreak, the females' mean ideal number of children is higher than their male counterparts 1 (Table 4.1.3 and Table 4.1.4). This difference between mean ideal number of children is directly seen in the mean actual number of children, meaning females, without any exception, have always higher mean actual number of children in the respective waves. This causes the child gap for 1st generation Polish males to be higher than females except for the last wave in which the 1st generation Polish males has experienced a sharp decline in ideal number of children. Even though the first reason to come to mind is the Russian invasion of Ukraine in February 24th, 2022, the fieldwork was done before this date (Brüderl et al, 2023). Therefore, this decline cannot be explained by the Ukrainian War. Therefore, it can be associated with the uncertainty hypothesis. The 1st generation male Polish migrants had an ideal number of children fluctuating between 2.2 and 2.0 before the COVID-19 outbreak. However, their ideal number started to decrease after the COVID-19 outbreak and fell by 0.3 in wave 13 and a further 0.8 in the last wave, wave 14. This might a clear case of uncertainty decreasing the fertility desire and if the uncertainty was not solved for the Polish migrant population in Germany by the wave 14 it is only natural for a further much harder decrease to occur. 2nd generation Polish males have smaller mean ideal number of children than females for every respective wave. However, when we look at the overall change from 2017/2018 to 2021/2022, we see that while males experienced a 0.5 decrease, females experienced a 0.3 decrease. Therefore, it can be said that 2nd generation Polish males are experiencing a faster decrease in mean ideal number of children compared to their female counterparts. If one tries to explain this via the

uncertainty theory, one can theorise that uncertainty of the economic situation might have affected the males more. This might be due to the different nature of the works done by males and females. It may be that while the work sector Polish males were dominantly working for affected by the COVID-19 more compared to the work sector Polish females were dominantly working for. It is an area that needs further study to unravel. The mean actual number of children is higher in female 2nd generation Polish migrants compared to males. This causes the former child gap to be higher but with the faster decline in male ideal number of children the child gap of males and females were equalized at 1.0 child.

Table 4.1.5 depicts the realistically additional children planning by parity. For a better comparison between before COVID-19 outbreak and after the COVID-19's effects are diminished, I chose wave 11 and wave 14 to compare realistic intentions of prospective biological parents. To make this comparison possible, the variable consisting of number of all kids born was recoded into a categorical variable. The number of children in this table depicts number of children from 0 to 3 and 4, and more children are included in the row 4+. According to the wave 11 numbers, 34.2% of all people included in the pairfam study who has "0" children regardless of their any other characteristics said that they do not realistically want any additional, or any children whatsoever in this case since they do not already have any children. The percentage of people who do not have any children and realistically do not want any children went from 34.2% to 47.9% which is a substantial change. While in 2018/2019, before COVID-19, approximately one third of people who has no children wanted to stay childless, this ratio increased to approximately one out of two childless people wanting to stay that way. While the increase in realistically not wanting additional children is prominent in every parity category with different levels of strength, another finding that is worth to mention is that the people who realistically do not want additional children regardless of their already existing number of children has risen from 55.5% to 67.6% after COVID-19. The percentages of native population in 2018/2019 is really similar to the percentages of all respondents. However, different parity levels have different results after the COVID-19 period. While the percentage of native people who realistically do not want any children has risen by approximately 14 percentage

points, the percentage stayed relatively the same for native people with 1 child then increased for people with 2 children but decreased for native people with 3 and 4+ children. However, the overall percentages for native people who realistically do not want any additional children has risen by approximately 12 percentage points, a rise similar to all respondents' rise. Unfortunately, the observation counts do not give a chance to make this kind of detailed inspection for migrant groups. Still some parity categories or some comments for total of the migrant group regardless of their parity can be made. For instance, the 2nd generation Turkish migrants with 0 parity that realistically do not want any children met with an approximately 17% increase. The increase for all 2nd generation Turkish migrants is an approximately 15 percentage points increase from 45.6, less than half, to 60.5, more than half. The situation for 1st generation Polish migrants points out to a different direction. While before COVID-19, 71% of 1st generation Polish migrants did not want additional children, this number has met with an approximately 13-point decrease down to 58%. For 2nd generation Polish migrants without any children the percentage of people who said no to realistically additional children has risen from 39% to 66%, meaning that after COVID-19 two thirds of 2nd generation Polish migrants decided they do not want any children. All of the 2nd generation Polish migrants with 2 children did not want any additional children both before and after COVID-19. For all 2nd generation Polish migrants, there is a substantial 23 percentage points increase in the percentage of people who realistically do not want any additional children. While summarising this table, it becomes clear that COVID-19 caused a decrease in planning for additional children realistically except for natives with 3 or more children and total of 1st generation Polish migrants. It is safe to say that people from different migration background are affected differently. In this table it looks like the desire for additional children might have been affected by uncertainty created by COVID-19 pandemic for majority of people except for natives with 3 or more children and 1st generation Polish migrants. For natives with 3 or more children and 1st generation Polish migrants, it can be said that other explanations were effective for their decision to have additional children realistically or not where one explanation may be terror management hypothesis.

Table 4.1.5. Realistically Additional Children by Parity, Both Sexes, Germany, 2018/2019 – 2021/2022

	Number of Children	2018/2019			2021/2022		
		Realistically Additional Children		Total Unweighted Count	Realistically Additional Children		Total Unweighted Count
		No	Yes		No	Yes	
All	0	34.2	65.8	5664	47.9	52.1	2923
	1	71.2	28.8	1268	74.1	26.0	793
	2	91.6	8.4	1641	92.6	7.4	1129
	3	94.9	5.1	585	94.4	5.6	400
	4+	94.1	5.9	216	94.2	5.8	103
	Total	55.5	44.5	9374	67.6	32.4	5348
Natives	0	34.8	65.2	4285	49.2	50.8	2338
	1	72.9	27.1	980	72.6	27.4	641
	2	92.6	7.4	1254	93.9	6.1	891
	3	98.0	2.0	438	95.5	4.6	330
	4+	96.8	3.2	161	90.8	9.2	85
	Total	55.7	44.3	7118	67.5	32.5	4285
1st Gen Turkish	0	*	*	16	*	*	4
	1	*	*	5	*	*	2
	2	*	*	20	*	*	7
	3	*	*	7	*	*	2
	4+	*	*	4	*	*	1
	Total	74.5	25.5	52	*	*	16
2nd Gen Turkish	0	19.8	80.2	125	36.4	63.6	43
	1	*	*	19	*	*	7
	2	82.1	17.9	26	*	*	11
	3	*	*	10	*	*	4
	4+	*	*	4	*	*	0
	Total	45.6	54.4	184	60.5	39.6	65
1st Gen Polish	0	47.5	52.5	35	*	*	19
	1	*	*	16	*	*	2
	2	*	*	23	*	*	14
	3	*	*	10	*	*	2
	4+	*	*	0	*	*	0
	Total	70.6	29.4	84	57.7	42.4	37
2nd Gen Polish	0	38.6	61.4	111	66.1	33.9	51
	1	*	*	24	*	*	16
	2	100.0	0	41	100.0	0	31
	3	*	*	11	*	*	8
	4+	*	*	2	*	*	1
	Total	58.8	41.2	189	81.5	18.6	107

For realistically additional children decision for males Table 4.1.6 should be inspected. For all of the male respondents without any separation by their other background characteristics there has been an approximately 14 percentage points increase for males with 0 children. In terms of realistically not wanting additional children, for males with 1 child 7%, for males with 2 children 5%, and for males with 3 children 1% increase have been found. For males with 4 or more children 3 percentage-point decrease is detected. In total, the ratio of males not wanting additional children has increased from slightly more than half of the males to two thirds of the male respondents which is a substantial increase. For all of the female respondents the increase in not wanting additional children is seen at the margin parities, namely 0 and 4+ (Table 4.1.7). The biggest increase in not wanting additional children realistically is at 0 level parity with 14 percentage point increase. For females with 1, 2, and 3 children the decrease in the response "No" to realistically wanting additional children is not bigger than 2%; therefore, the effect these decreases have is really low. The increase in the answer "No" at 4+ parity is 4 percentage points. Overall, there is an increase of approximately 11 percentage points for all female respondents. These results may imply uncertainty effects among both males and females.

Male native population that does not any children experienced a 15 percentage point increase in their figures while female native population experienced an 13 percentage point increase in the same category. While the native male respondents with no children who do not want any is slightly more than half of them while native female respondents with no children who do not want any children are at 45% which is really close to half. However, native males and females differ when we look at native males and females with 1 child. While native males with one child who do not want any additional children realistically nearly reached three quarters, native females with 1 child who do not want additional children used to be more than three quarters (77%) but when down to 71% in wave 14. For the males and females with 2 children there is a slight increase in the response "No"; however, while for native males with 3 children there is a slight decrease in answer "No", native females with 3 children experienced a 4 percentage point decrease. This difference gets reverse in 4+ children. The native males who do not want realistically additional children with 4 or more children

experienced approximately 10 percentage point decrease, whereas native females with 4 or more children who do not want realistically additional children decreased by 3 percentage points.

Due to the low observation count, 1st generation Turkish males and females cannot be compared. Thankfully, the observation count allows a 2nd generation Turkish male and female comparison in total number, although comparison by parity is not possible, again due to low observation count. The number of 2nd generation Turkish males who do not realistically want additional children increased by 10 percentage points, while for females this increase is 19 points. A comparison between 1st generation Polish males and females is not possible, again, due to low observation count. Thankfully, 2nd generation Polish male and female comparison is possible, although, without comparing by parity. The number of 2nd generation Polish males has increased from approximately half (50%) of them not wanting additional children to approximately 4 out of 5 (80%) not wanting additional children. With a 30-percentage point increase, this is the biggest change that was recorded for realistically wanting additional children. This shows that not every segment of the population experiences changes at the same way or the same magnitude. People with different characteristics have different responses to COVID-19 crisis. In this case, 2nd generation male Polish migrant population seems to have been affected the most in terms of realistically wanting additional children. The number of 2nd generation female Polish migrants, also, increased by 16 percentage points. Both for male and female 2nd generation Polish migrant uncertainty hypothesis seems to have been in effect.

Table 4.1.6. Realistically Additional Children by Parity, Males, Germany, 2018/2019 – 2021/2022

	Number of Children	2018/2019			2021/2022		
		Realistically Additional Children		Total Unweighted Count	Realistically Additional Children		Total Unweighted Count
		No	Yes		No	Yes	
All	0	36.0	64.0	2951	49.9	50.1	1449
	1	66.4	33.6	529	73.8	26.3	307
	2	90.0	10.0	609	94.7	5.3	409
	3	96.4	3.6	207	97.6	2.4	142
	4+	96.4	3.6	86	93.4	6.6	48
	Total	53.2	46.8	4382	66.7	33.3	2355
Natives	0	36.7	63.3	2283	52.1	47.9	1175
	1	69.0	31.0	430	74.2	25.8	246
	2	91.6	8.4	488	93.3	6.7	333
	3	97.1	2.9	164	96.6	3.4	120
	4+	97.8	2.2	63	88.3	11.7	39
	Total	53.7	46.3	3428	67.0	33.0	1913
1st Gen Turkish	0	*	*	8	*	*	3
	1	*	*	4	*	*	1
	2	*	*	8	*	*	3
	3	*	*	3	*	*	1
	4+	*	*	3	*	*	1
	Total	77.7	22.3	26	*	*	9
2nd Gen Turkish	0	17.9	82.1	61	*	*	19
	1	*	*	6	*	*	3
	2	*	*	8	*	*	5
	3	*	*	5	*	*	1
	4+	*	*	3	*	*	0
	Total	50.2	49.8	83	60.6	39.4	28
1st Gen Polish	0	*	*	19	*	*	9
	1	*	*	4	*	*	1
	2	*	*	3	*	*	2
	3	*	*	3	*	*	0
	4+	*	*	0	*	*	0
	Total	55.6	44.4	29	*	*	12
2nd Gen Polish	0	32.5	67.5	51	71.8	28.2	27
	1	*	*	9	*	*	4
	2	*	*	12	*	*	8
	3	*	*	3	*	*	2
	4+	*	*	1	*	*	1
	Total	49.2	50.8	76	79.4	20.6	42

Table 4.1.7. Realistically Additional Children by Parity, Females, Germany, 2018/2019 – 2021/2022

	Number of Children	2018/2019			2021/2022		
		Realistically Additional Children		Total Unweighted Count	Realistically Additional Children		Total Unweighted Count
		No	Yes		No	Yes	
All	0	31.9	68.1	2712	45.1	55.0	1473
	1	75.4	24.6	739	74.3	25.7	486
	2	92.8	7.2	1032	91.1	8.9	720
	3	93.9	6.1	378	92.1	7.9	258
	4+	91.3	8.7	130	95.3	4.7	55
	Total	58.0	42.0	4991	68.6	31.4	2992
Natives	0	32.3	67.8	2001	44.9	55.1	1162
	1	77.0	23.0	550	71.2	28.9	395
	2	93.5	6.5	766	94.4	5.6	558
	3	98.8	1.2	274	94.4	5.6	210
	4+	95.9	4.1	98	93.4	6.7	46
	Total	57.9	42.1	3689	68.1	31.9	2371
1st Gen Turkish	0	*	*	8	*	*	1
	1	*	*	1	*	*	1
	2	*	*	12	*	*	4
	3	*	*	4	*	*	1
	4+	*	*	1	*	*	0
	Total	69.8	30.2	26	*	*	7
2nd Gen Turkish	0	21.7	78.3	64	*	*	24
	1	*	*	13	*	*	4
	2	*	*	18	*	*	6
	3	*	*	5	*	*	3
	4+	*	*	1	*	*	0
	Total	41.2	58.8	101	60.3	39.7	101
1st Gen Polish	0	*	*	16	*	*	10
	1	*	*	12	*	*	1
	2	*	*	20	*	*	12
	3	*	*	7	*	*	2
	4+	*	*	0	*	*	0
	Total	78.2	21.8	55	65.1	35.0	25
2nd Gen Polish	0	44.7	55.3	60	*	*	24
	1	*	*	15	*	*	12
	2	100.0	0.0	29	*	*	23
	3	*	*	8	*	*	6
	4+	*	*	1	*	*	0
	Total	66.7	33.3	113	83.2	16.9	65

When the answers to the intention to become a father/mother in the next two years, a change is detected for the most parity levels. The percentage of all the people, without differentiating by any other characteristics, who have no children and no intention to become a parent in the next two years increases by approximately 6 percentage points (pp) after the COVID-19 pandemic. This points out to an increasing trend of people who are childless to stay that way. It becomes more prominent when the decrease in the answers "No" in people with 1 child (2 pp), 2 children (4 pp), and 3 children (2 pp). The percentage stayed exactly the same for 4+ parity. However, in total there is a 2 percentage point increase in people not intending to become a parent. For natives with no children there is an approximately 6 percentage point increase, a finding that supports the before mentioned childlessness trend. Native people with 1 child who reported they do not have an intention to become a parent fell by approximately 6 percentage points. In native people with 2 children there is a much slighter fall in the answers "No", which is a 1 pp fall. Native people with 3 children who reported they do not intend to become a parent in the next two years fell from 98.6% to 95.2%, a 3 percentage point fall after the COVID-19 pandemic. Native people with 4 or more children who do not intend to become a parent, like native people with 2 children, met with a 1 percentage point fall. Due to the rise in native people without any children who do not intend to become a parent in the next two years an overall 1.5 increase is seen in people who do not intend to become a parent. Unfortunately, the observation count makes it impossible to comment on 1st generation Turkish migrants. A comparison is possible between wave 11 and wave 14 2nd generation Turkish migrants who do not have any children. The share of 2nd generation Turkish migrants with no children rose from approximately 81% to 98%. This is a 17 percentage point increase after the COVID-19 pandemic, and it is much bigger than the native German without any children has experienced. The total 2nd generation Turkish population who said "No" to the question when they were asked if they intend to become a parent in the next two years rose by 8 percentage points. This is also a larger rise compared to the total of native German population (1.5%). It is clear that the uncertainty the COVID-19 pandemic created affected the 2nd generation Turkish migrant population much more than it affected the native German population. The opposite seems to be the case for the total 1st generation Polish migrants. The 1st

generation Polish migrants in total, experienced an approximately 2.5 percentage point fall in their percentage who answered “No” to intention to become a parent question. The 2nd generation Polish migrants without any children who said they do not intend to become a parent has increased by 15 percentage points. The 2nd generation Polish migrants in total also experienced a rise in losing their intention to become a parent by 7 percentage points. The numbers show that the 2nd generation Polish migrants may be the second most affected group by the uncertainty COVID-19 caused in the sense of intention to become a parent.

Table 4.1.8. Intention to Become a Parent and Mean Ideal Number of Children by Parity, Both Sexes, Germany, 2018/2019 – 2021/2022

		2018/2019				2021/2022			
	Number of Children	Intention to Become a Parent		Total Unweighted Count	Mean Ideal Number of Children	Intention to Become a Parent		Unweighted Count	Mean Ideal Number of Children
		No	Yes			No	Yes	No	
All	0	80.7	19.3	4308	2.0	86.6	13.4	2614	1.8
	1	77.4	22.6	1269	2.0	75.8	24.2	700	2.0
	2	94.2	5.8	1641	2.3	90.6	9.4	1011	2.4
	3	97.4	2.6	586	3.1	95.0	5.0	335	3.2
	4+	96.3	3.7	219	4.1	96.3	3.7	103	4.3
	Total	84.5	15.5	8023	2.2	86.4	13.6	4763	2.2
Natives	0	80.5	19.5	3337	1.9	86.2	13.8	2091	1.7
	1	79.5	20.5	980	1.9	73.8	26.2	572	2.0
	2	94.4	5.6	1255	2.3	93.1	6.9	794	2.3
	3	98.6	1.4	438	3.1	95.2	4.8	275	3.1
	4+	95.7	4.3	163	3.9	94.2	5.8	85	4.5
	Total	84.6	15.4	6173	2.1	86.1	13.9	3817	2.1
1st Gen Turkish	0	*	*	14	1.9	*	*	3	0.8
	1	*	*	5	3.4	*	*	2	2.0
	2	*	*	20	2.5	*	*	6	3.1
	3	*	*	8	2.8	*	*	2	4.2
	4+	*	*	4	2.2	*	*	1	5.0
	Total	94.3	5.7	51	2.4	*	*	14	3.0
2nd Gen Turkish	0	80.8	19.2	78	2.5	97.9	2.1	33	2.1
	1	*	*	19	2.7	*	*	6	3.2
	2	85.7	14.3	26	2.2	*	*	10	2.5
	3	*	*	10	3.1	*	*	2	3.0
	4+	*	*	4	4.1	*	*	0	0.0
	Total	83.1	16.9	137	2.6	91.0	9.0	51	2.5
1st Gen Polish	0	88.0	12.0	27	1.8	*	*	19	1.2
	1	*	*	16	2.0	*	*	2	2.0
	2	*	*	23	2.3	*	*	8	2.9
	3	*	*	10	3.4	*	*	2	3.7
	4+	*	*	0	*	*	*	0	*
	Total	86.0	14.0	76	2.1	83.6	16.5	31	2.0
2nd Gen Polish	0	77.3	22.7	78	1.8	92.6	7.4	43	1.5
	1	*	*	24	2.5	*	*	14	1.9
	2	90.1	9.9	41	2.4	91.0	9.0	29	2.4
	3	*	*	11	3.0	*	*	7	3.1
	4+	*	*	2	5.1	*	*	1	5.0
	Total	83.5	16.5	156	2.1	90.2	9.8	94	2.0

The comparison between males and females for the intention to become a parent in the next two years is only possible at the level all respondents, natives, and total 2nd generation Polish migrants due to the low observation count in all the other subcategories. Male respondents without any children who stated they do not intend to become a parent in the next two years rose 5 percentage points after the COVID-19 pandemic while the rise in this proportion is 7 percentage points in females. Males with 1 child who do not intend to become a parent rose 2 pp. On the other hand, females with 1 child who do not intend to become a parent decreased by 5 pp. It is an important finding that females and males experienced the COVID-19 pandemic's effect differently. The uncertainty hypothesis is apparent for males with 1 child while the terror management hypothesis seems to be in effect for females more. There is a slight fall in males with two children who do not intend to become a parent (1 pp), while females experienced a much bigger fall (6 pp). The males and females with 3 children experienced approximately the same fall from wave 11 to wave 14 which is a 2% fall. The situation seems to have gotten reversed between the males and females with 4 or more children. While males with 4 or more children experienced a 3 percentage point decrease in the share of the ones who do not intend to become a parent in the next two years, the share of females who do not intend to become a parent increased by 4 percentage points. This might be due to the traditional gender roles, meaning that because the child raising is seen as traditionally a "woman's job" as the number of children raises the domestic work on the women's shoulders increases more. Therefore, it is expected the women to be more reluctant to intend to become a parent by additionally reproducing as the parity rises. The males and females both experienced an increase in the share of the ones who do not intend to become a parent, males by 3 pp and females by 1 pp. As for the natives, the males with no children that do not intend to become a parent increased by 5 pp, while females in the same category increased by 7 pp. Native males with 1 child who do not intend to become a parent in the next two years decreased by approximately 4 pp, whereas females who do not intend to become a parent decreased by 6 pp. The percentages of native males with 2 children did not change between the wave 11 and wave 14. The female natives with 2 children who do not intend to become a parent decreased by approximately 3 percentage points. The native males with 3 children who said "No" to the respective

question decreased by approximately 1.5 percentage points. The native females with 3 children who responded the respective question with "No" decreased by 5 percentage points. The same reverse trend for people with 4 or more children that was mentioned for all respondents is also valid for native population. While the percentage of males with 4 or more children who stated that they do not intend to become a parent in the next two years fell from 100% to 92% while the native female percentages rose from 92% to 97%. Overall, native males' percentage who do not intend to become a parent next two years increased by 2 percentage points while this increase in the respective female population is less than 1 percentage point (negligible). Shares of both for the total 2nd generation Polish migrant males and females who do not intend to become a parent increased by approximately 7 percentage points. This increase is bigger compared to the 2 pp increase in native males and females. Therefore, it is clear that in the sense of intending to become a parent native and 2nd generation Polish migrant population experienced the effect of COVID-19 in different magnitudes.

Appendix A contains the tables Table A1 and Table A2. These tables show mean ideal number of children by background characteristics (age groups, regions, type of settlement, work status, and education), migration, and sex for the years 2018/2019 and 2020/2021, before and after COVID-19 outbreak. An interesting picture this tables give is that for native male German population, both before and after COVID-19, the higher the education level is the bigger the ideal number children while for the native female German population the reverse seems to be the case even if the numbers are close to each other. Also, apart from the 1st generation Polish migrant population a general trend seems to be that employed males have higher ideal number of children compared to unemployed males while the unemployed females have higher ideal number of children compared to employed females. Appendix B contains Table B1, Table B2, and Table B3. These tables show timing for the next child by parity. Due to the observation counts detailed comments cannot be made but one trend seems to be that 3 to 5 years being split into either 0 to 2 years or 6+ years after COVID-19. However, it is not the case for every subgroup which means the fertility behaviour changes. For instance, while the before mentioned trend seems to be the case for native German population, for 2nd generation Turkish migrants 6+ years decreased.

Table 4.1.9. Intention to Become a Parent and Mean Ideal Number of Children by Parity, Males, Germany, 2018/2019 – 2021/2022

		2018/2019				2021/2022			
	Number of Children	Intention to Become a Parent		Unweighted Count	Mean Ideal Number of Children	Intention to Become a Parent		Unweighted Count	Mean Ideal Number of Children
		No	Yes			No	Yes		
All	0	82.4	17.6	2253	1.98	87.6	12.5	1297	1.85
	1	74.0	26.0	530	2.06	76.2	23.8	279	1.99
	2	94.2	5.8	609	2.32	93.3	6.7	381	2.31
	3	97.6	2.4	207	3.01	95.0	5.0	125	3.32
	4+	98.8	1.2	88	3.64	95.2	4.8	48	4.34
	Total	84.5	15.5	3687	2.15	87.3	12.7	2130	2.13
Natives	0	82.3	17.7	1789	1.89	87.4	12.6	1051	1.80
	1	76.9	23.1	430	1.99	73.0	27.0	225	1.87
	2	93.5	6.5	488	2.26	93.7	6.4	310	2.25
	3	98.1	1.9	164	2.92	96.7	3.3	107	3.05
	4+	100.0	0.0	65	3.42	91.6	8.4	39	4.52
	Total	84.6	15.4	2936	2.05	86.9	13.2	1732	2.05
1st Gen Turkish	0	*	*	7	1.94	*	*	2	0.85
	1	*	*	4	4.03	*	*	1	2.00
	2	*	*	8	2.45	*	*	2	2.52
	3	*	*	3	3.00	*	*	1	5.00
	4+	*	*	3	2.20	*	*	1	5.00
	Total	93.7	6.3	25	2.47	*	*	7	2.67
2nd Gen Turkish	0	74.6	25.4	40	2.50	*	*	16	2.30
	1	*	*	6	3.81	*	*	2	3.93
	2	*	*	8	1.41	*	*	4	2.19
	3	*	*	5	2.79	*	*	0	3.00
	4+	*	*	3	4.00	*	*	0	*
	Total	83.6	16.4	62	2.62	*	*	22	2.65
1st Gen Polish	0	*	*	15	1.89	*	*	9	0.97
	1	*	*	4	2.13	*	*	1	2.00
	2	*	*	3	2.00	*	*	2	2.00
	3	*	*	3	3.00	*	*	0	*
	4+	*	*	0		*	*	0	*
	Total	75.2	24.8	25	1.98	*	*	12	1.08
2nd Gen Polish	0	78.5	21.5	94	1.61	*	*	22	1.15
	1	*	*	9	3.46	*	*	4	2.00
	2	*	*	12	2.49	*	*	8	2.56
	3	*	*	3	3.00	*	*	2	3.00
	4+	*	*	1	5.00	*	*	1	5.00
	Total	83.6	16.4	59	2.03	90.2	9.8	37	1.75

Table 4.1.10. Intention to Become a Parent and Mean Ideal Number of Children by Parity, Females, Germany, 2018/2019 – 2021/2022

		2018/2019				2021/2022			
	Number of Children	Intention to Become a Parent		Unweighted Count	Mean Ideal Number of Children	Intention to Become a Parent		Unweighted Count	Mean Ideal Number of Children
		No	Yes			No	Yes		
All	0	78.4	21.6	2054	1.97	85.2	14.8	1316	1.80
	1	80.3	19.7	739	2.02	75.4	24.6	421	2.03
	2	94.2	5.8	1032	2.35	88.5	11.5	630	2.47
	3	97.2	2.8	379	3.22	95.0	5.0	210	3.18
	4+	93.4	6.7	131	4.62	97.7	2.3	55	4.23
	Total	84.5	15.5	4335	2.22	85.3	14.7	2632	2.21
Natives	0	77.9	22.1	1547	1.89	84.3	15.7	1039	1.68
	1	82.1	17.9	550	1.90	74.6	25.4	347	2.05
	2	95.1	4.9	767	2.34	92.5	7.5	484	2.38
	3	98.9	1.1	274	3.25	93.9	6.1	168	3.16
	4+	91.8	8.3	98	4.40	96.7	3.3	46	4.38
	Total	84.5	15.5	3236	2.15	85.3	14.7	2084	2.13
1st Gen Turkish	0	*	*	7	1.97	*	*	1	2.00
	1	*	*	1	1.00	*	*	1	3.53
	2	*	*	12	2.50	*	*	4	3.73
	3	*	*	5	2.73	*	*	1	*
	4+	*	*	1	4.00	*	*	0	*
	Total	95.0	5.0	26	2.39	*	*	7	3.45
2nd Gen Turkish	0	88.2	11.9	38	2.49	*	*	17	1.98
	1	*	*	13	2.26	*	*	4	2.35
	2	*	*	18	2.71	*	*	6	2.87
	3	*	*	5	3.58	*	*	2	2.98
	4+	*	*	1	5.00	*	*	0	*
	Total	82.5	17.5	75	2.59	85.1	14.9	29	2.43
1st Gen Polish	0	*	*	12	1.65	*	*	10	1.69
	1	*	*	12	1.97	*	*	1	2.00
	2	*	*	20	2.32	*	*	6	2.95
	3	*	*	7	3.45	*	*	2	3.72
	4+	*	*	0	*	*	*	0	*
	Total	91.2	8.8	51	2.15	*	*	19	2.63
2nd Gen Polish	0	16.2	23.8	44	2.05	*	*	21	2.01
	1	*	*	15	1.93	*	*	10	1.83
	2	85.4	14.6	29	2.28	*	*	21	2.26
	3	*	*	8	2.95	*	*	5	3.09
	4+	*	*	1	6.00	*	*	0	*
	Total	83.4	16.6	97	2.15	90.2	9.8	57	2.16

4.2. Multivariate Analyses

For multivariate analyses new variables are generated as mentioned in Section 3.2. First of all, a new variable consisting of individuals who stated their ideal number of children as equals to 2 or less than 2, and individuals who stated their ideal number of children as more than 2. The former group is considered as "Low Fertility Norm" while the latter is considered as "High Fertility Norm" groups. This dummy variable is created for wave 11 and wave 13 to compare the changes between the two regression results. Secondly, another logistic regression is run for the realistically additional children variable. This was already created as a Yes-No dichotomous variable from various questions in pairfam. The two groups are the people who said "no" to realistically having additional children and people who stated they would like to realistically have additional children. This regression is also run for wave 11 and wave 13 to compare the results of two regressions. Thirdly, another variable is created from the ideal number of children question. In this new variable, first group of people are the people who had ideal number of children more than 2 ($x>2$) in both wave 11 and wave 13. They are called "Persistent High Fertility Norm" individuals since they did not change their ideal number of children between the two waves; after COVID-19 outbreak. The second group in this variable is the "Abandoners". This group consists of the respondents who used to have a more than 2 ($x>2$) ideal number of children in wave 11, but they have abandoned this ideal number of children and changed it to less than or equal to 2 children ($x\leq2$). Lastly, another variable is created using the realistic intention to become a father/mother variable. In this variable first category of people are the ones stated they have an intention to become a father/mother in both wave 11 and wave 13. These people belong in the "Still Planning" category. The other group is consisting of people who said they have an intention to become a father/mother in wave 11 but abandoned this plan and stated they do not have an intention to become a father/mother in wave 13.

According to the results of logistic regression on the determinants of high ideal fertility before the COVID-19 pandemic among the migrant groups, only the coefficient of the 2nd generation Turkish migrants is significant at 0.95 level (Table 4.2.1). In wave 11, before COVID-19 pandemic, compared to native people, 2nd

generation Turkish migrants are 1.82 times more likely to state more than 2 children as their ideal number of children. It shows that 2nd generation Turkish migrants are different from the native population in Germany. Between the age groups, results of 35-39 and 45-51 age groups were found to be statistically significant at 0.99 level while 40-44 age group was found to be significant at 0.90 level. Compared to the age group 25-29, the respondents between the ages 35-39 are 61% less likely to report more than 2 children as their ideal number of children while the 40-41 age group is 69% less likely to do so. The 45-51 age group is 75% less likely to state more than 2 children as their ideal number of children. The other age groups were not found to be statistically significant. The regression did not detect any statistically significant difference between sexes. When we look at the differences between East and West Germany regions, we detect a statistical significance at 0.95 level. The results suggest that compared to West, the residents of East region are 26% less likely to state more than 2 children as their ideal number of children. The result of the logistic regression showed no statistically significant difference between rural and urban type of settlements regarding their ideal number of children. The results show statistical significance for every parity category at 0.99 level. The results point to a clear difference between people with less than 2 children and people with more than two children. Compared to people with 2 children, people without any children are 69%, people with 1 child are 52% less likely state their ideal number of children as more than 2, whereas people with 3 children are 21.9 times, and people with 4 or more children are 14 times more likely to state more than 2 children as their ideal number of children. Therefore, it can be clearly seen that there is a direct relation between parity and ideal number of children. The results of logistic regression on ideal number of children were not statistically significant for work status or any education level.

The second logistic regression is done for the ideal number of children variable after COVID-19 outbreak, in wave 13 (Table 4.2.2). For migration background, the results show a statistical significance for 1st and 2nd generation Turkish migrants. The 1st generation Turkish migrants are 2.76 times, and 2nd generation Turkish migrants are 2.87 times more likely to state more than 2 children as their ideal compared to the German natives. This finding suggests that the gap between natives and Turkish

migrants widened after the COVID-19 outbreak since the before result showed no statistically significant difference between 1st generation Turkish migrants and German natives and the difference between 2nd generation Turkish migrants and natives was much smaller. This finding also supports the idea that COVID-19 affected different segments of population in different ways and magnitudes. Among the age groups, statistical significance is found except for 20-24 and 30-34 age groups. While 14-19 age group is found to be 1.30 times more likely to state more than 2 children as their ideal number of children compared to the age group of 25-29; 35-39 age group is 63%, 40-44 age group is 74%, and 45-51 age group is 75% less likely to state their ideal number of children as more than 2. The result for sex differences is not statistically significant. For German regions, East region was found to be statistically significantly %28 less likely to state more than 2 children as their ideal compared to the West. There is not any significant difference between urban and rural areas in terms of their ideal number of children being more than 2 or being equal to 2 or less than 2. The parity levels are found to be all statistically significant with the same trend of people less than 2 children being less likely to state more than 2 children as their ideal and people with more than 2 children being more likely to state more than 2 children as their ideal compared to the people with 2 children. In wave 13, years of 2020/2021, people with no children were 75% less likely to state their ideal as more than 2 children. People with one child are 49% less likely to state more than 2 children as ideal. People with 3 children are 24.4 times, people with 4 or more children are 33.3 times more likely to state their ideal number of children as more than 2. The model could not find a statistical significance for work status or any level of education.

Table 4.2.1. Logistic regression results of determinants of high ideal fertility before the COVID-19 pandemic

Ideal Number of Children 2018/2019	Odds Ratio	Std. Err.	t	P>|t|	[95% Conf.	Interval]	Sig
Migration Background							
1st Gen Turkish	0.84	0.589	-0.250	0.803	0.21	3.32	
2nd Gen Turkish	1.82	0.543	2.000	0.046	1.01	3.27	**
1st Gen Polish	0.47	0.237	-1.500	0.134	0.17	1.27	
2nd Gen Polish	1.49	0.565	1.050	0.292	0.71	3.13	
Age Groups							
20-24	0.77	0.466	-0.430	0.664	0.23	2.52	
30-34	0.63	0.376	-0.780	0.438	0.20	2.03	
35-39	0.39	0.071	-5.170	0.000	0.27	0.56	***
40-44	0.31	0.208	-1.750	0.081	0.08	1.16	*
45-51	0.25	0.060	-5.810	0.000	0.16	0.40	***
Sex							
Female	1.01	0.121	0.090	0.931	0.80	1.28	
Region							
East	0.74	0.091	-2.470	0.014	0.58	0.94	**
Type of Settlement							
Urban	1.19	0.166	1.240	0.213	0.91	1.57	
Children Ever Born							
0	0.31	0.071	-5.130	0.000	0.20	0.48	***
1	0.48	0.095	-3.690	0.000	0.33	0.71	***
3	21.90	5.098	13.260	0.000	13.87	34.57	***
4+	14.00	5.000	7.390	0.000	6.95	28.20	***
Work Status							
Employed	0.82	0.149	-1.080	0.280	0.58	1.17	
Education							
Lower Secondary	0.45	0.307	-1.170	0.243	0.12	1.71	
Upper and Post-Secondary	0.60	0.356	-0.860	0.387	0.19	1.92	
Tertiary	1.00	0.589	0.010	0.995	0.32	3.17	
_cons	1.49	0.935	0.640	0.525	0.44	5.10	.935
Mean dependent var		0.289		SD dependent var		0.453	
Number of obs		3730		F-test		16.687	

*** p<.01, ** p<.05, * p<.1

Table 4.2.2. Logistic regression results of determinants of high ideal fertility after the COVID-19 pandemic

Ideal Number of Children 2020/2021	Odds Ratio	Std. Err.	t	P>|t|	[95% Conf.	Interval]	Sig
Migration Background							
1st Gen Turkish	2.76	1.293	2.170	0.030	1.10	6.91	**
2nd Gen Turkish	2.87	0.701	4.330	0.000	1.78	4.64	***
1st Gen Polish	0.56	0.226	-1.440	0.150	0.25	1.23	
2nd Gen Polish	1.37	0.315	1.370	0.170	0.87	2.15	
Age Groups							
14-19	1.30	0.166	2.040	0.042	1.01	1.67	**
20-24	1.41	0.523	0.930	0.355	0.68	2.92	
30-34	0.78	0.336	-0.570	0.569	0.34	1.81	
35-39	0.37	0.054	-6.780	0.000	0.27	0.49	***
40-44	0.26	0.121	-2.870	0.004	0.10	0.65	***
45-51	0.25	0.044	-7.780	0.000	0.17	0.35	***
Sex							
Female	1.12	0.094	1.400	0.160	0.96	1.33	
Region							
East	0.72	0.077	-3.050	0.002	0.59	0.89	***
Type of Settlement							
Urban	0.95	0.091	-0.580	0.563	0.78	1.14	
Children Ever Born							
0	0.25	0.041	-8.410	0.000	0.18	0.35	***
1	0.51	0.076	-4.480	0.000	0.38	0.69	***
3	24.39	5.214	14.940	0.000	16.04	37.09	***
4+	33.32	12.680	9.210	0.000	15.80	70.26	***
Work Status							
Employed	0.90	0.101	-0.920	0.357	0.73	1.12	
Education							
Lower Secondary	0.83	0.385	-0.410	0.684	0.33	2.06	
Upper and Post-secondary	0.98	0.414	-0.050	0.956	0.43	2.24	
Tertiary	1.64	0.699	1.150	0.249	0.71	3.78	
_cons	0.96	0.424	-0.100	0.921	0.40	2.28	
Mean dependent var		0.282		SD dependent var		0.450	
Number of obs		5658		F-test		23.714	

*** p<.01, ** p<.05, * p<.1

The logistic regression model for realistically additional children variable in wave 11 did not show any statistical significance according to migration background (Table 4.2.3). A much-excepted result is that compared to the age group 25-29, there is statistical significance for age groups 35-39, 40-44 and 45-51. 35-39 age group is 82% less, 40-44 age group is 97% less, 45-51 age group is 98% less likely to state they realistically want additional children to the ones they currently have. This finding is much expected due to the later age groups are more likely to have been achieved their wanted fertility or they might be afraid of possible complications that might occur due to their late ages. This model could not find any statistical significance for sex, region, or type of settlement. For the parity levels, the model detected statistical significance for people with no children or 1 child. People with no children are 7.5 times more likely to state they realistically want additional children while people with 1 child are 3.8 times more likely to state that. This might point out a 2 children norm even though he German total fertility rate is 1.46 children, a number well below the replacement level (2.1) and 2 children norm (DESTATIS, 2023). This is safer to argue because the model found at 0.90 level, people with 3 children are 66% less likely to state they realistically want additional children compared to the people with 2 children. The model could not find statistical significance for employment status or education levels.

The logistic regression for realistically additional children variable in wave 13, also, could not detect any statistical significance for migration background (Table 4.2.4). For age groups another expected finding was revealed. The age group 40-44 is 84% less, 45-51 age group is 98% less likely to state they realistically want additional children. The model was successful at detecting a statistical significance for the sex groups. Compared to males, females are found to be 23% less likely to state they realistically want additional children. It is important to note that before COVID-19 outbreak there was no statistically significant difference between males and females. Therefore, it can be argued that males and females were affected differently by COVID-19 crisis. For region and type of settlement there is no statistical significance. When parity is looked at, it is seen that people without any children are 6.7 times more likely to state they realistically want additional children while people with one child are 5 times more likely to state they realistically want additional children compared to

people with 2 children. Compared to people with no education, people with lower education are 79% less likely to state they realistically want additional children with a significance at 0.99 level. At 0.90 level, people with upper and post-secondary education are 53% less likely to state that they realistically want additional children.

Table 4.2.3. Logistic regression results of determinants of realistic intention for birth before the COVID-19 pandemic

Realistically Additional Children 2018/2019	Odds Ratio	Std. Err.	t	P>|t|	[95% Conf.	Interval]	Sig
Migration Background							
1st Gen Turkish	2.19	1.933	0.890	0.372	0.39	12.34	
2nd Gen Turkish	1.79	0.862	1.210	0.227	0.70	4.60	
1st Gen Polish	1.05	0.497	0.110	0.910	0.42	2.66	
2nd Gen Polish	1.01	0.489	0.010	0.989	0.39	2.61	
Age Groups							
20-24	2.05	2.141	0.690	0.493	0.26	15.91	
30-34	0.50	0.305	-1.130	0.257	0.15	1.66	
35-39	0.18	0.024	-13.020	0.000	0.14	0.23	***
40-44	0.03	0.037	-2.960	0.003	0.00	0.31	***
45-51	0.02	0.004	-17.310	0.000	0.01	0.03	***
Sex							
Female	0.85	0.107	-1.250	0.210	0.67	1.09	
Region							
East	1.21	0.188	1.250	0.211	0.90	1.64	
Type of Settlement							
Urban	1.12	0.205	0.630	0.529	0.78	1.61	
Children Ever Born							
0	7.48	1.568	9.610	0.000	4.96	11.28	***
1	3.76	0.910	5.460	0.000	2.34	6.04	***
3	0.34	0.191	-1.910	0.056	0.11	1.03	*
4+	0.76	0.547	-0.390	0.700	0.18	3.12	
Work Status							
Employed	1.23	0.288	0.890	0.375	0.78	1.95	
Education							
Lower Secondary	0.67	0.460	-0.590	0.557	0.17	2.58	
Upper and Post-secondary	1.28	0.614	0.520	0.607	0.50	3.28	
Tertiary	1.94	0.928	1.380	0.168	0.76	4.96	
_cons	0.33	0.186	-1.970	0.049	0.11	1.00	**
Mean dependent var		0.339		SD dependent var		0.474	
Number of obs		3790		F-test		40.924	

*** p<.01, ** p<.05, * p<.1

Table 4.2.4. Logistic regression results of determinants of realistic intention for birth after the COVID-19 pandemic

Realistically Additional Children 2020/2021	Odds Ratio	Std. Err.	t	P>|t|	[95% Conf.	Interval]	Sig
Migration Background							
1st Gen Turkish	0.88	1.529	-0.070	0.943	0.03	26.32	
2nd Gen Turkish	3.20	2.404	1.550	0.122	0.73	13.96	
1st Gen Polish	0.77	0.408	-0.500	0.616	0.27	2.18	
2nd Gen Polish	0.94	0.350	-0.150	0.878	0.46	1.96	
Age Groups							
14-19	0.97	0.148	-0.190	0.848	0.72	1.31	
20-24	2.60	1.776	1.390	0.163	0.68	9.92	
30-34	1.30	0.601	0.570	0.568	0.53	3.22	
35-39	0.20	0.026	-12.280	0.000	0.15	0.26	***
40-44	0.16	0.088	-3.330	0.001	0.05	0.47	***
45-51	0.02	0.005	-14.300	0.000	0.01	0.03	***
Sex							
Female	0.77	0.078	-2.620	0.009	0.63	0.94	***
Region							
East	0.86	0.107	-1.190	0.234	0.68	1.10	
Type of Settlement							
Urban	1.12	0.134	0.930	0.350	0.89	1.41	
Children Ever Born							
0	6.70	1.450	8.790	0.000	4.38	10.24	***
1	5.00	1.167	6.900	0.000	3.17	7.90	***
3	0.82	0.312	-0.530	0.595	0.39	1.73	
4+	1.26	0.828	0.350	0.729	0.35	4.58	
Work Status							
Employed	1.03	0.143	0.190	0.848	0.78	1.35	
Education							
Lower Secondary	0.21	0.119	-2.750	0.006	0.07	0.64	***
Upper and Post-secondary	0.47	0.215	-1.660	0.097	0.19	1.15	*
Tertiary	0.60	0.278	-1.110	0.268	0.24	1.49	
_cons	1.10	0.572	0.180	0.858	0.40	3.05	
Mean dependent var		0.437		SD dependent var		0.496	
Number of obs		4338		F-test		39.867	

*** p<.01, ** p<.05, * p<.1

The model created for testing the change in the response for the ideal number of children could not find statistical significance between migration background groups (Table 4.2.5). Between the age groups the only statistically significant result was the 35-39 age group being 1.75 times more likely to change their ideal number of children to equal to or less than 2 children compared to the 25-29 age group. For sex, region, and type of settlement there is no statistical significance found. When parity levels are studied it is seen that for no children and one child there is no statistical significance but for 3 and 4 or more children there is a 95% level significance. Compared to people with 2 children, the people with 3 children are 87% less likely to change their response to ideal number of children from more than 2 children to equal to or less than 2 children, whereas people with 4 or more children are 94% less likely to do so. It is an expected outcome since they already have more than 2 children; however, it can be theorised that even after the COVID-19 pandemic they are less likely to regret their already achieved fertility. The model could not detect any statistical significance for work status or any education level.

Table 4.2.5. Logistic regression results of determinants of abandonment of high norm of ideal number of children; analysis group: high fertility norm population

Ideal Number of Children Change 2020/2021	Odds Ratio	Std. Err.	t	P>|t|	[95% Conf.	Interval]	Sig
Migration Background							
1st Gen Turkish	0.35	0.426	-0.860	0.389	0.03	3.86	
2nd Gen Turkish	0.60	0.236	-1.290	0.196	0.28	1.30	
1st Gen Polish	2.27	1.524	1.230	0.220	0.61	8.47	
2nd Gen Polish	0.96	0.452	-0.090	0.929	0.38	2.42	
Age Groups							
14-19	1.04	0.251	0.170	0.865	0.65	1.67	
20-24	1.93	1.552	0.820	0.411	0.40	9.34	
30-34	1.47	1.044	0.540	0.586	0.37	5.91	
35-39	1.75	0.459	2.120	0.034	1.04	2.92	**
40-44	1.17	1.439	0.130	0.895	0.11	12.98	
45-51	1.49	0.508	1.170	0.242	0.76	2.91	
Sex							
Female	0.84	0.135	-1.060	0.288	0.62	1.15	
Region							
East	1.31	0.248	1.410	0.159	0.90	1.90	
Type of Settlement							
Urban	1.32	0.256	1.420	0.155	0.90	1.93	
Children Ever Born							
0	1.60	0.479	1.560	0.118	0.89	2.88	
1	1.38	0.376	1.170	0.243	0.81	2.35	
3	0.13	0.043	-6.320	0.000	0.07	0.25	***
4+	0.06	0.033	-4.990	0.000	0.02	0.18	***
Work Status							
Employed	1.19	0.243	0.860	0.392	0.80	1.78	
Education							
Lower Secondary	0.66	0.549	-0.500	0.620	0.13	3.36	
Upper and Post-secondary	0.48	0.360	-0.980	0.327	0.11	2.10	
Tertiary	0.36	0.277	-1.330	0.185	0.08	1.64	
_cons	0.50	0.383	-0.900	0.366	0.11	2.25	
Mean dependent var		0.241		SD dependent var		0.428	
Number of obs		1579		F-test		4.813	

*** p<.01, ** p<.05, * p<.1

When the regression for the change in the responses for realistically wanting additional children is studied it is seen that the results are significant for 2nd generation Turkish respondents at 0.90 level. Compared to the native population, 2nd generation Turkish migrants are 60% less likely to change their response for the question where they are asked about their realistic intention to have another child. This means that 2nd generation Turkish migrants are much more likely to not to lose their intention to have another child compared to the native German population. The age groups give statistically significant results at 0.99 level for the age groups 35-39, 40-44, and 45-51. Compared to the 25-29 age group, the 35-39 age group is 2.26 more likely to lose their realistic fertility plans while the 40-44 age group is 7.17 more likely to do so. The 45-51 age group is 8.51 times more likely to change their realistic plans after the COVID-19 pandemic. This result can be due to the COVID-19 virus affecting the older population more intensely than the younger population. Therefore, the uncertainty about their health might have been much more influential to their decisions. The regression is not statistically significant for sex, region, and type of settlement. People with no children are found to be 90% less likely to lose their abandon their realistic plans for fertility while people with one child are 79% less likely to lose their intentions. Coefficient for work status is not statistically significant. In the case of education, the regression model found significance at 0.99 level for people with lower secondary education. The results show that compared to the people with no education, people with lower secondary education are 4.60 times more likely to abandon their realistic plans for having additional children.

Table 4.2.6. Logistic regression results on determinants of change of realistically planning to have additional children from positive to negative; analysis group: realistically planning birth population

Change of Realistically Planning to Have Additional Children 2020/2021	Odds Ratio	Std. Err.	t	P>|t|	[95% Conf.	Interval]	Sig
Migration Background							
1st Gen Turkish	0.79	0.590	-0.320	0.752	0.18	3.42	
2nd Gen Turkish	0.40	0.190	-1.930	0.054	0.16	1.02	*
1st Gen Polish	0.83	0.444	-0.340	0.731	0.29	2.37	
2nd Gen Polish	0.89	0.387	-0.270	0.785	0.38	2.09	
Age Groups							
14-19	1.07	0.185	0.370	0.712	0.76	1.50	
20-24	0.25	0.252	-1.370	0.172	0.03	1.84	
30-34	0.95	0.471	-0.110	0.910	0.36	2.51	
35-39	2.26	0.395	4.680	0.000	1.61	3.19	***
40-44	7.17	4.431	3.190	0.001	2.13	24.09	***
45-51	8.51	3.673	4.960	0.000	3.65	19.84	***
Sex							
Female	1.09	0.133	0.670	0.504	0.85	1.38	
Region							
East	1.00	0.158	0.010	0.991	0.74	1.37	
Type of Settlement							
Urban	0.95	0.132	-0.390	0.696	0.72	1.24	
Children Ever Born							
0	0.10	0.026	-8.970	0.000	0.06	0.17	***
1	0.21	0.058	-5.670	0.000	0.12	0.36	***
3	1.36	0.705	0.590	0.554	0.49	3.76	
4+	2.94	3.070	1.030	0.302	0.38	22.79	
Work Status							
Employed	0.83	0.123	-1.240	0.215	0.62	1.11	
Education							
Lower Secondary	4.60	2.687	2.610	0.009	1.46	14.46	***
Upper Secondary and Post-Secondary	2.27	1.230	1.520	0.129	0.79	6.57	
Tertiary	1.96	1.065	1.250	0.213	0.68	5.69	
_cons	0.81	0.483	-0.350	0.723	0.25	2.61	
Mean dependent var			0.216	SD dependent var		0.411	
Number of obs			2710	F-test		12.558	

*** p<.01, ** p<.05, * p<.1

CHAPTER 5. DISCUSSION AND CONCLUSION

This thesis analysed how fertility preferences in Germany changed due to the COVID-19 pandemic having a specific focus on Turkish and Polish 1st and 2nd generation migrants using the German Family Panel pairfam (Panel Analysis of Intimate Relationships and Family Dynamics) data. The descriptive and multivariate analyses using logistic regressions done for the different subpopulations in Germany showed that different subpopulations are affected by the COVID-19 crisis in different ways and different magnitudes. Although ideal fertility remained around 2.2 overall and among natives in Germany through the pandemic, migrants responded differently. The mean ideal number of children for the 1st generation Turkish migrants increased after COVID-19 compared to pre-COVID-19 times from 2.0 to 3.0, and slight fluctuations were observed for 2nd generation Turkish migrants in Germany. On the other hand, a small decline was observed among the 1st generation Polish migrants from 2.1 to 2.0 in mean ideal number of children, while among the second generation first an increase to 2.2 in 2020-2021, and then a decline to 2.0 occurred in 2021-2022. These results, at first glance, suggests that terror management hypothesis might be valid for 1st generation Turkish migrants. Results by gender suggest a decline among 1st generation Polish males. Hence the uncertainty hypothesis, might be in play for the 1st generation Polish males. This finding is in line with Nitsche and Lee's (2021) findings which supported that worrying about economic conditions, health, and social stability decreases fertility desires. Although their support was only for economic conditions the COVID-19 pandemic incorporates health and social stability worries too due to it being a deadly virus and curfews. Another finding was, for the Polish migrants, a gender difference is prominent. The numbers pointed out to a case where the uncertainty was more powerful for the male Polish migrants compared to female Polish migrants. This might be because of the different natures of work predominantly done by male Polish migrants and female Polish migrants. It requires further in-depth study to see if that is actually the reason behind or if something else is the cause of this difference.

In the case of realistically wanting to have additional children, overall a decline occurred in the share of respondents who realistically intended to have another child through the pandemic. Put differently, the uncertainty hypothesis found support for the majority of the respondents where a decline occurred in the proportion who realistically intended for another birth. The only exceptions were the natives with 3 or more children, and 1st generation Polish migrants. Share of 1st generation Polish migrants who realistically planned for another birth increased, hence their motivations might have been in line with the terror management hypothesis in this case. The male and female figures in total also pointed out to uncertainty hypothesis in general. For both male and female 2nd generation Polish migrants, uncertainty was, again, found to be the case.

In the case of intention to become a parent in 2 years, it is found that the uncertainty affected 2nd generation Turkish migrant population more than it affected the native German population whose intention were not affected. Another difference between genders were detected in males and females with one child. Males were found to be more in line with the uncertainty while females were more likely to be affected by terror management hypothesis. Coverage of 2nd generation Polish migrants' intention to have a child within 2 years also decreased similar to 2nd generation Turkish migrants, while a slight increase in the share of individuals with positive intention among the 1st generation Polish migrants.

Results on multivariate analyses on high norm of fertility reflected in ideal number of children higher than 2 with respect to migration status indicate that 2nd generation Turkish migrants are more likely to have a high norm fertility compared to natives in Germany. 1st generation Turkish migrants have also become more likely to have high ideal fertility compared to natives in the post-COVID-19 period, although this was not the case prior to COVID-19. Being a Polish migrant is not significantly associated with high norm fertility, although the odds is lower among the 1st generation Polish migrants, and higher among the 2nd generation. The significant determinants of high norm fertility have not changed when regression results of pre-COVID-19 period and post-COVID-19 period are compared. Significant factors that are associated with high ideal fertility are migration status, age, number of children ever born, and region.

Results of the regression on abandonment of high norm of fertility indicated that being in the age group of 35-39 increased the odds of abandonment and having 3 or more children decreased the odds compared to those of natives. Turkish migrants were less likely to abandon high fertility norm compared to natives, while 1st generation Polish migrants were more likely to abandon the high norm and 2nd generation migrants showed no big difference compared to natives.

The regression models on realistic birth plans, or birth intentions, indicated that migration status was not a significant factor in explaining birth intentions neither pre- or post-COVID-19 periods. Despite being insignificant, Turkish migrants' odds to have intention for a birth were higher compared to natives before the COVID-19 pandemic for both 1st and 2nd generations. For the 1st generation Turkish migrants this relationship has changed in the post-COVID-19 regression. In the post-COVID-19 period, 1st generation Turkish migrants were less likely to have positive birth intention compared to natives. As noted before, however, the coefficients were insignificant. The significant determinants of realistic birth intention were age and number of children ever born for both periods of pre- and post-COVID-19, however in the post-pandemic model, sex and education have become significant variables as well. The regression model for the change in the responses for the realistic plans for having additional children question showed that 2nd generation Turkish migrants were 60% less likely to abandon their birth intentions compared to natives after the pandemic. Other migrant groups (1st generation Turkish, and 1st and 2nd generation Polish) were also less likely to abandon their positive birth intentions compared to natives, despite being insignificant. Being in the age group of 35 and over and having lower secondary education were positively associated, while being childless or having one child was negatively associated with abandonment of birth intention.

The results imply that terror management may be more prevalent in 2nd generation Turkish migrants compared to native Germans. Another finding was that because COVID-19 affects the health of older people, the uncertainty weighing on their health caused them to change their responses in favour of realistically not planning to have additional children anymore. The coefficients are getting higher as

the age groups are getting older. For 35-39 the coefficient is 2.3 while at 40-44 age group it gets 7.2 and at 45-51 age group it gets as high as 8.5.

The findings in this thesis show that the different demographics in a country are affected differently. Even if the different subpopulations are affected at the same way, their level of getting effected can be really different. More research needs to be done in the area because this thesis was only able to scratch the surface of a vast area that needs to be carefully and deeply studied. An area for further study might be on why males and females tend to be affected differently, especially in the Polish migrant case. Additionally, even though COVID-19 had huge economic impacts, employment status never gave any significant results. What dimensions of the pandemic; economic, psychological or health-related outcomes, and to what extent these were in effect in shaping fertility aspirations and plans is an area that has to be studied further.

REFERENCES

Abbasoğlu Özgören, A., Yayla Enfiyeci, Z., & Türkyılmaz, A. S., (2022). Türkiye'de Doğurganlık Tercihleri: İdealler, Niyetler ve Doğurganlık Farklarındaki Eğilimler. *Üreme Sağlığı Konularında Tematik Analizler 1993-2018* (pp.21-82), Ankara: Emsal Matbaası.

Adbelrahman, M., (2022). COVID-19 and the Meaning of Crisis. *Development and Change 53*(6). 1151–1176. DOI: 10.1111/dech.12744

Becker, E. (1973). *The denial of death.* New York: Free Press

Beckert, J. (2016). *Imagined futures. Fictional expectations and capitalist dynamics.* Cambridge: Harvard University Press.

Biaback Anong, D. (2023, May 8). *Seasonal workers wanted! Germany's seasonal labour migration regime and the COVID-19 pandemic*. National Library of Medicine. Retrieved May 24, 2024, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10183330/#bibr19-02633957231168039

Bourdieu, P. (1990). *The Logic of Practice*. Stanford University Press: Stanford.

Brüderl, J., Schmiedeberg C., Castiglioni L., Arránz Becker O., Buhr P., Fuß D., Ludwig V., Schröder J., & Schumann N. (2022). *The German Family Panel: Study Design and Cumulated Field Report (Waves 1 to 13), Release 13.0. pairfam Technical Paper No. 01*. https://doi.org/10.5282/ubm/epub.91983

Brüderl, J., Schmiedeberg C., Castiglioni L., Arránz Becker O., Buhr P., Fuß D., Ludwig V., Schröder J., & Schumann N. (2023). *The German Family Panel: Study Design and Cumulated Field Report (Waves 1 to 14), Release 14.0. pairfam Technical Paper No. 01*.

Centers for Disease Control and Prevention. (2022, December 16). *Post-COVID Conditions*. Retrieved January 10, 2023, from https://www.cdc.gov/coronavirus/2019-ncov/long-term-effects/index.html

Council of Europe. (2006). *Recent demographic developments in Europe 2005.* Strasbourg: Council of Europe Publishing

Cygan-Rehmn, K. (2014). Immigrant Fertility in Germany: The Role of Culture. *Schmollers Jahrbuch, 134*(3), 305–340. https://doi.org/10.3790/schm.134.3.305

Elster, J. (2009). Excessive ambitions. *Capitalism and Society, 4*(2), 1–30.

Espenshade, T. J. (1972). The Price of Children and Socio-Economic Theories of Fertility. *Population Studies, 26*(2), 207. https://doi.org/10.2307/2173578

Eurostat. (2010). *Data on live births, fertility rates and population size.*

Eurostat. (2011). *Data on population by age, sex and marital status.*

Fritsche, I., Jonas, E., Fischer, P., Koranyi, N., Berger, N., & Fleischmann, B. (2007). Mortality salience and the desire for offspring. *Journal of Experimental Social Psychology, 43*(5), 753-762.

German Federal Statistical Office (DESTATIS) (2021a). *Nowcast foreign population.* DESTATIS. Retrieved January 10, 2023, from https://www.destatis.de/EN/Themes/Society-Environment/Population/Migration-Integration/Tables/nowcast-foreigner-citizenship-time-series.html

German Federal Statistical Office. (DESTATIS) (2021b). *Seasonal workers accounted for nearly a third of the labour force in agriculture in 2019/2020*. DESTATIS. Retrieved May 24, 2024, from https://www.destatis.de/EN/Press/2021/05/PE21_N028_411.html

German Federal Statistical Office. (DESTATIS) (2023). *Fertility rate down to 1.46 children per woman in 2022*. Retrieved May 27, 2024, from https://www.destatis.de/EN/Press/2023/07/PE23_290_12.html

German Federal Office for Migration and Refugees. (n.d.). *Entry*. Retrieved May 24, 2024, from https://www.germany4ukraine.de/hilfeportal-en/entry-residence-and-return/entry#:~:text=Due%20to%20the%20special%20situation,citizens%20with%20a%20biometric%20passport

German Federal Office for Migration and Refugees. *Entry*. (2024). Germany4ukraine. https://www.germany4ukraine.de/hilfeportal-en/entry-residence-and-return/entry#:~:text=Due%20to%20the%20special%20situation,citizens%20with%20a%20biometric%20passport

Girard, A., & Roussel, L. (1982). Ideal Family Size: Fertility, and Population Policy in Western Europe. *Population and Development Review 8*(2), 323-345.

Gustavus, S., & Nam, C. (1970) The Formation and Stability of Ideal Family Size Among Young People. *Demography. 7*(1). 43-51.

Guarin Rojas, E. A., Bernardi, L., & Schmid, F. (2018). First and second births among immigrants and their descendants in Switzerland. *Demographic Research, 38*, 247–286. https://doi.org/10.4054/demres.2018.38.11

Human Fertility Database. 2011. *Period fertility rates, cohort parity distribution and census input data on parity distribution in the Czech Republic, East Ger- many, Estonia, the Netherlands, Russia, Slovenia, and Slovakia*

İçduygu, A. (2012). 50 Years after the labour recruitment agreement with germany:

The consequences of emigration for Turkey. *Perceptions: Journal of International Affairs, 17*(2), 11–36. https://doi.org/10.1007/s11577-015-0331-8

Kohler, H. P., Billari, F. C., & Ortega J. A., (2002). The emergence of lowest-low fertility in Europe during the 1990s. *Population and Development Review 28*(4), 641-680.

Krapf, S., & Wolf, K. (2015). Persisting Differences or Adaptation to German Fertility Patterns? First and Second Birth Behavior of the 1.5 and Second Generation Turkish Migrants in Germany. *KZfSS Kölner Zeitschrift Für Soziologie Und Sozialpsychologie, 67*(S1), 137–164.

Kulu, H. (2006). Fertility of Internal Migrants: Comparison between Austria and Poland. *Population, Space and Place, 12*, 147–170. https://doi.org/10.1002/psp.406

Lane, D., & Maxfeld, R. (2005). Ontological uncertainty and innovation. *Journal of Evolutionary Economics, 15*(1), 3–50.

Lesthaeghe, R. (1995). The second demographic transition in Western countries: An interpretation. *Gender and family change in industrialized countries*, ed. K. O. Mason, and A.-M. Jensen, 17-62. Oxford: Clarendon Press.

Macura, M., (2000). Fertility decline in the transition economies, 1989-1998: Economic and social factors revisited. *Economic Survey of Europe 2000, No. 1*, ed. Economic Commission for Europe, United Nations, 189-205. New York and Geneva.

Nitsche, N., & Lee, D. S. (2022). Emotion and fertility in times of disaster: conceptualizing fertility responses to the COVID-19 pandemic and beyond. https://doi.org/10.4054/mpidr-wp-2022-020

Office of International Religious Freedom. (2022a). *2022 Report on International Religious Freedom: Poland*. U.S. DEPARTMENT OF STATE. Retrieved May 26, 2024, from https://www.state.gov/reports/2022-report-on-international-religious-freedom/poland

Office of International Religious Freedom. (2022b). *2022 Report on International Religious Freedom: Turkey (Türkiye)*. U.S. DEPARTMENT OF STATE. Retrieved May 26, 2024, from https://www.state.gov/reports/2022-report-on-international-religious-freedom/turkey/#:~:text=Religious%20Demography,-The%20U.S.%20government&text=According%20to%20the%20Turkish%20

government,to%20the%20government%2C%20includes%20Alevis.

pairfam – The German Family Panel. (n.d.). *Pairfam*. Retrieved January 10, 2023, from https://www.pairfam.de/en/

Philipov, D., (2003). Fertility in times of discontinuous societal change. *Population of Central and Eastern Europe. Challenges and Opportunities,* ed. I. Kotowska, and J. Jóźwiak, 665-689. Warsaw: Statistical Publishing Establishment

Philipov, D., & Bernardi, L. (2012). Concepts and operationalisation of reproductive decisions implementation in Austria, Germany and Switzerland. *Comparative Population Studies, 36*(2–3), 495–530.

Ranjan, P., (1999). Fertility behaviour under income uncertainty. *European Journal of Population, 15*(1), 25-43.

Sobotka, T. (2011). Fertility in Central and Eastern Europe after 1989: collapse and gradual recovery. *Historical Social Research, 36*(2), 246-296. https://doi.org/10.12759/hsr.36.2011.2.246-296

The Organization of Economic Co-operation and Development. (2022, August 30). *What has been the impact of the COVID-19 pandemic on immigrants? An update on recent evidence*. OECD. Retrieved January 10, 2023, from https://www.oecd.org/coronavirus/policy-responses/what-has-been-the-impact-of-the-covid-19-pandemic-on-immigrants-an-update-on-recent-evidence-65cfc31c/

Trinitapoli, J., & Yeatman, S. (2017). The Flexibility of Fertility Preferences in a Context of Uncertainty. *Population and Development Review, 44*(1), 87–116. https://doi.org/10.1111/padr.12114

Turkish Statistical Institute (TURKSTAT). (2024). Doğum İstatistikleri [Birth Statistics], 2023. https://data.tuik.gov.tr/Bulten/Index?p=Dogum-Istatistikleri-2023-53708

United Nations (UN). (n.d.). *UN response to COVID-19 | United Nations*. https://www.un.org/en/coronavirus/UN-response

VID-IIASA. (2010). *European demographic data sheet 2010.* Vienna Institute of Demography and IIASA

Vignoli, D., Bazzani, G., Guetto, R., Minello, A., & Pirani, E. (2020). Uncertainty and Narratives of the Future: A Theoretical Framework for Contemporary Fertility. Schoen, R. (eds) *Analyzing Contemporary Fertility*. The Springer Series on Demographic Methods and Population Analysis, 51. Springer, Cham. https://doi.org/10.1007/978-3-030-48519-1_3

Waller, L., Berrington, A., & Rayme, J. (2014). New insights into the fertility

patterns of recent Polish migrants in the United Kingdom. *Journal of Population Research, 31,* 131–150. https://doi.org/10.1007/s12546-014-9125-5

Wolf, K. (2014). Fertility of Turkish migrants in Germany: Duration of stay matters.

International Labour Organization: ILO, Food and Agriculture Organization of the United Nations: FAO, International Fund for Agricultural Development: IFAD, & World Health Organization: WHO. (2020, October 13). Impact of COVID-19 on people's livelihoods, their health and our food systems. Statement. https://www.who.int/news/item/13-10-2020-impact-of-covid-19-on-people%27s-livelihoods-their-health-and-our-food-systems#:~:text=As%20breadwinners%20lose%20jobs%2C%20fall,indigenous%20peoples%2C%20being%20hardest%20hit.

Zeman, K., & Sobotka, T., (2021). *Pandemic Babies in Czechia, Austria and Spain – First evidence on monthly birth trends by age of mother, birth order and selected socio-economic characteristics* [PowerPoint slides]. Wittgenstein Centre for Demography and Global Human Capital, University of Vienna. https://www.demogr.mpg.de/mediacms/16375_main_ZemanSobotka_presentation.pdf

Zumpe, J., Dormon, O., & Jefferies, J. (2012). *Childbearing among UK born and non-UK born women living in the UK.* Office for National Statistics. http://www.ons.gov.uk/ons/dcp171766_283876.pdf.

APPENDIX

Appendix A – Mean Ideal Number of Children by Background Characteristics, Migration, and Sex, 2018/2019 and 2020/2021, Germany

Table A1. Mean Ideal Number of Children by Background Characteristics, Migration and Sex, 2018/2019, Germany

	Background Characteristics			
	Age Groups	**Male**	**Female**	**Both Sexes**
Natives	14-19	1.98	2.10	2.04
	20-24	2.08	2.30	2.19
	25-29	2.19	2.20	2.20
	30-34	2.23	3.08	2.60
	35-39	2.08	2.22	2.14
	40-44	0.78	2.46	2.09
	45-51	1.96	2.05	2.00
1st Gen Turkish	14-19	3.00	2.33	2.47
	20-24	.	.	.
	25-29	1.83	1.74	1.80
	30-34	.	.	.
	35-39	3.40	3.35	3.38
	40-44	.	.	.
	45-51	2.29	2.31	2.30
2nd Gen Turkish	14-19	2.43	2.77	2.61
	20-24	.	.	.
	25-29	3.14	2.54	2.81
	30-34	.	.	.
	35-39	2.37	2.64	2.50
	40-44	.	2.00	2.00
	45-51	2.58	2.35	2.50
1st Gen Polish	14-19	2.38	2.09	2.26
	20-24	.	.	.
	25-29	2.28	2.67	2.47
	30-34	.	.	.
	35-39	1.58	2.25	1.95
	40-44	.	.	.
	45-51	2.00	1.96	1.97
2nd Gen Polish	14-19	1.69	2.16	1.91
	20-24	.	.	.
	25-29	2.56	2.21	2.40
	30-34	.	.	.
	35-39	1.44	2.24	2.06
	40-44	3.00	.	3.00
	45-51	1.91	2.08	2.02
	Regions	**Male**	**Female**	**Both Sexes**
Natives	East	1.97	2.10	2.02
	West	2.01	2.10	2.05
1st Gen Turkish	East	.		.
	West	2.32	2.30	2.31
2nd Gen Turkish	East	.	.	.
	West	2.71	2.32	2.53
	East	2.43	2.00	2.25

1st Gen Polish		1.54	2.01	1.92
	West			
2nd Gen Polish	East	2.33	2.07	2.16
	West	2.00	2.09	2.05
	Type of Settlement	**Male**	**Female**	**Both Sexes**
Natives	Rural	2.02	2.08	2.05
	Urban	2.06	2.16	2.11
1st Gen Turkish	Rural	2.78	3.03	2.82
	Urban	2.38	2.34	2.36
2nd Gen Turkish	Rural	2.98	2.84	2.90
	Urban	2.61	2.53	2.57
1st Gen Polish	Rural	2.41	1.96	2.19
	Urban	1.84	2.18	2.08
2nd Gen Polish	Rural	1.21	2.27	1.72
	Urban	2.20	2.13	2.16
	Work Status	**Male**	**Female**	**Both Sexes**
Natives	Unemployed	2.00	2.29	2.16
	Employed	2.07	2.07	2.07
1st Gen Turkish	Unemployed	1.70	2.48	2.06
	Employed	2.59	2.37	2.51
2nd Gen Turkish	Unemployed	1.96	2.64	2.36
	Employed	2.99	2.54	2.78
1st Gen Polish	Unemployed	1.96	1.92	1.93
	Employed	1.99	2.23	2.16
2nd Gen Polish	Unemployed	1.49	2.40	1.93
	Employed	2.47	2.03	2.20
	Education	**Male**	**Female**	**Both Sexes**
Natives	No degree	1.77	2.44	1.99
	Lower Secondary	1.79	2.28	2.01
	Upper & Post-secondary	2.02	2.12	2.07
	Tertiary	2.19	2.16	2.18
1st Gen Turkish	No degree	4.00	2.86	3.01
	Lower Secondary	2.86	2.64	2.77
	Upper & Post-secondary	2.00	1.82	1.96
	Tertiary	2.88	1.71	2.58
2nd Gen Turkish	No degree	2.00	5.00	2.85
	Lower Secondary	2.05	2.58	2.31
	Upper & Post-secondary	3.01	2.49	2.73
	Tertiary	3.01	2.71	2.86
1st Gen Polish	No degree	.	.	.
	Lower Secondary	2.40	1.97	2.26
	Upper & Post-secondary	1.92	2.26	2.18
	Tertiary	1.48	1.93	1.78
2nd Gen Polish	No degree	1.00	2.00	1.44
	Lower Secondary	2.33	1.30	1.98
	Upper & Post-secondary	1.52	2.28	2.03
	Tertiary	2.44	2.14	2.29

Table A2. Mean Ideal Number of Children by Background Characteristics, Migration and Sex, 2020/2021, Germany

	Background Characteristics			
	Age Groups	**Male**	**Female**	**Both Sexes**
Natives	14-19	2.05	2.09	2.07
	20-24	1.98	2.29	2.12
	25-29	2.15	2.14	2.14
	30-34	2.06	2.13	2.09
	35-39	2.01	2.17	2.08
	40-44	1.76	2.17	1.91
	45-51	1.98	2.11	2.04
1st Gen Turkish	14-19	3.00	2.58	2.70
	20-24	.	.	.
	25-29	2.57	1.00	1.94
	30-34	.	.	.
	35-39	2.88	3.07	2.99
	40-44	.	.	.
	45-51	3.36	2.66	3.07
2nd Gen Turkish	14-19	2.09	2.70	2.46
	20-24	.		.
	25-29	2.72	2.52	2.60
	30-34	.	2.00	2.00
	35-39	2.65	2.72	2.68
	40-44	.	.	.
	45-51	3.15	2.25	2.76
1st Gen Polish	14-19	2.51	1.87	2.31
	20-24	.	.	.
	25-29	2.00	2.00	2.00
	30-34	.	.	.
	35-39	1.52	2.35	1.91
	40-44	.	.	.
	45-51	2.00	1.84	1.85
2nd Gen Polish	14-19	1.92	2.28	2.07
	20-24	.	3.00	3.00
	25-29	1.99	1.83	1.94
	30-34	.	3.00	3.00
	35-39	1.38	2.15	2.02
	40-44	.	.	.
	45-51	2.50	2.25	2.34
	Regions	**Male**	**Female**	**Both Sexes**
Natives	East	1.94	2.10	2.02
	West	2.06	2.13	2.09
1st Gen Turkish	East	.	.	.
	West	3.18	2.57	2.90
2nd Gen Turkish	East	.	2.00	2.00
	West	2.65	2.58	2.61
1st Gen Polish	East	2.11	2.00	2.10
	West	1.92	2.01	1.97
2nd Gen Polish	East	2.09	2.00	2.02
	West	2.11	2.26	2.19
	Type of Settlement	**Male**	**Female**	**Both Sexes**
Natives	Rural	2.05	2.13	2.09
	Urban	2.04	2.13	2.08
	Rural	3.00	3.00	3.00

1st Gen Turkish	Urban	3.19	2.55	2.90
2nd Gen Turkish	Rural	3.12	2.52	2.75
	Urban	2.57	2.56	2.57
1st Gen Polish	Rural	2.15	2.92	2.49
	Urban	1.90	1.88	1.89
2nd Gen Polish	Rural	2.14	2.32	2.25
	Urban	2.10	2.17	2.14
	Work Status	**Male**	**Female**	**Both Sexes**
Natives	Unemployed	2.06	2.25	2.17
	Employed	2.03	2.08	2.05
1st Gen Turkish	Unemployed	2.51	2.69	2.65
	Employed	3.29	2.44	3.02
2nd Gen Turkish	Unemployed	2.31	2.56	2.46
	Employed	2.78	2.56	2.67
1st Gen Polish	Unemployed	2.11	1.67	1.86
	Employed	1.90	2.11	2.01
2nd Gen Polish	Unemployed	1.66	2.21	1.99
	Employed	2.25	2.18	2.21
	Education	**Male**	**Female**	**Both Sexes**
Natives	No degree	1.67	2.37	1.92
	Lower Secondary	1.88	2.15	2.01
	Upper & Post-secondary	1.97	2.12	2.04
	Tertiary	2.18	2.13	2.16
1st Gen Turkish	No degree	.	2.96	2.96
	Lower Secondary	3.00	2.11	2.57
	Upper & Post-secondary	2.85	3.07	2.93
	Tertiary	3.73	1.29	3.08
2nd Gen Turkish	No degree	.	5.00	5.00
	Lower Secondary	3.13	2.51	2.67
	Upper & Post-secondary	2.66	2.52	2.58
	Tertiary	2.42	2.55	2.48
1st Gen Polish	No degree	2.00	.	2.00
	Lower Secondary	2.53	2.00	2.44
	Upper & Post-secondary	2.19	2.12	2.15
	Tertiary	1.12	1.82	1.54
2nd Gen Polish	No degree	.	2.00	2.00
	Lower Secondary	1.08	1.13	1.09
	Upper & Post-secondary	2.07	2.26	2.20
	Tertiary	2.39	2.16	2.28

Appendix B –Timing by Parity, Both Sexes, Males, and Females, Germany, 2018/2019 – 2020/2021

Table B1. Timing by Parity, Both Sexes, Germany, 2018/2019 – 2020/2021

		2018/2019				2020/2021			
	Number of Children	Timing (Years)			Total Unweighted Count	Timing (Years)			Total Unweighted Count
		0-2	3-5	6+		0-2	3-5	6+	
All	0	15.3	35.1	49.6	3797	19.8	29.8	50.4	2546
	1	57.9	39.9	2.2	407	67.7	28.9	3.4	284
	2	53.0	41.8	5.2	148	49.8	41.0	9.3	98
	3	*	*	*	21	*	*	*	21
	4+	*	*	*	11	*	*	*	8
	Total	20.9	35.8	43.3	4384	26.4	30.2	43.4	2951
Natives	0	15.9	36.2	47.9	2872	19.6	30.2	50.3	1968
	1	62.8	33.9	3.3	304	66.4	29.6	4.0	214
	2	55.0	38.4	6.6	110	59.2	36.8	4.0	73
	3	*	*	*	15	*	*	*	18
	4+	*	*	*	8	*	*	*	4
	Total	21.6	36.1	42.3	3309	26.3	30.3	43.5	2277
1st Gen Turkish	0	*	*	*	9	*	*	*	4
	1	*	*	*	2	*	*	*	0
	2	*	*	*	3	*	*	*	0
	3	*	*	*	0	*	*	*	0
	4+	*	*	*	0	*	*	*	0
	Total	*	*	*	14	*	*	*	4
2nd Gen Turkish	0	8.0	30.4	61.7	95	15.7	33.7	50.7	57
	1	*	*	*	14	*	*	*	5
	2	*	*	*	6	*	*	*	4
	3	*	*	*	0	*	*	*	1
	4+	*	*	*	0	*	*	*	0
	Total	14.1	36.5	49.4	115	16.6	40.5	43.0	67
1st Gen Polish	0	*	*	*	21	*	*	*	19
	1	*	*	*	7	*	*	*	1
	2	*	*	*	2	*	*	*	0
	3	*	*	*	0	*	*	*	0
	4+	*	*	*	0	*	*	*	0
	Total	31.7	29.6	38.7	30	*	*	*	20
2nd Gen Polish	0	13.4	36.1	50.5	75	16.7	28.2	55.1	40
	1	*	*	*	4	*	*	*	5
	2	*	*	*	2	*	*	*	0
	3	*	*	*	1	*	*	*	0
	4+	*	*	*	1	*	*	*	0
	Total	17.4	34.8	47.8	63	25.8	27.8	46.4	45

Table B2. Timing by Parity, Males, Germany, 2018/2019 – 2020/2021

	Number of Children	2018/2019 Timing (Years) 0-2	3-5	6+	2018/2019 Total Unweighted Count	2020/2021 Timing (Years) 0-2	3-5	6+	2020/2021 Total Unweighted Count
All	0	14.8	35.7	49.5	1898	18.7	30.7	50.7	1319
	1	54.3	42.8	2.9	188	65.7	31.3	3.1	121
	2	46.7	48.9	4.4	65	56.8	41.6	1.6	41
	3	*	*	*	6	*	*	*	8
	4+	*	*	*	5	*	*	*	2
	Total	19.5	36.8	43.7	2162	24.5	31.3	44.2	1492
Natives	0	15.7	36.1	48.2	1453	18.6	30.3	51.2	1036
	1	61.6	34.2	4.2	149	66.1	31.8	2.1	87
	2	52.0	42.6	5.4	53	59.3	40.7	0.0	34
	3	*	*	*	5	*	*	*	7
	4+	*	*	*	3	*	*	*	1
	Total	21.1	36.2	42.7	1663	24.4	30.7	44.9	1165
1st Gen Turkish	0	*	*	*	3	*	*	*	1
	1	*	*	*	2	*	*	*	0
	2	*	*	*	2	*	*	*	0
	3	*	*	*	0	*	*	*	0
	4+	*	*	*	0	*	*	*	0
	Total	*	*	*	7	*	*	*	1
2nd Gen Turkish	0	8.9	34.6	56.8	42	12.6	33.9	53.5	25
	1	*	*	*	4	*	*	*	2
	2	*	*	*	1	*	*	*	0
	3	*	*	*	0	*	*	*	0
	4+	*	*	*	0	*	*	*	0
	Total	10.9	39.9	49.1	44	11.7	38.4	49.8	27
1st Gen Polish	0	*	*	*	12	*	*	*	10
	1	*	*	*	3	*	*	*	1
	2	*	*	*	0	*	*	*	0
	3	*	*	*	0	*	*	*	0
	4+	*	*	*	0	*	*	*	0
	Total	*	*	*	15	*	*	*	11
2nd Gen Polish	0	10.9	36.4	52.7	36	*	*	*	22
	1	*	*	*	2	*	*	*	2
	2	*	*	*	0	*	*	*	0
	3	*	*	*	0	*	*	*	0
	4+	*	*	*	1	*	*	*	0
	Total	13.7	36.0	50.4	39	*	*	*	24

Table B3. Timing by Parity, Females, Germany, 2018/2019 – 2020/2021

	Number of Children	2018/2019 Timing (Years)			2018/2019 Total Unweighted Count	2020/2021 Timing (Years)			2020/2021 Total Unweighted Count
		0-2	3-5	6+		0-2	3-5	6+	
All	0	15.8	34.5	49.7	1899	21.2	28.7	50.1	1220
	1	61.9	36.7	1.5	219	69.8	26.5	3.7	163
	2	57.6	36.7	5.7	83	45.0	40.5	14.5	57
	3	*	*	*	15	*	*	*	13
	4+	*	*	*	6	*	*	*	6
	Total	22.5	34.7	42.8	2222	32.8	28.8	42.4	1459
Natives	0	16.1	36.3	47.6	1419	20.9	30.1	49.0	932
	1	24.4	33.5	2.1	155	66.7	27.5	5.8	127
	2	58.2	34.1	7.8	117	59.1	32.3	8.6	39
	3	*	*	*	10	*	*	*	21
	4+	*	*	*	5	*	*	*	3
	Total	22.2	35.9	41.9	1646	28.6	29.7	41.6	1112
1st Gen Turkish	0	*	*	*	6	*	*	*	3
	1	*	*	*	1	*	*	*	0
	2	*	*	*	0	*	*	*	0
	3	*	*	*	0	*	*	*	0
	4+	*	*	*	0	*	*	*	0
	Total	*	*	*	7	*	*	*	3
2nd Gen Turkish	0	7.5	26.6	65.9	53	17.9	33.5	48.6	32
	1	*	*	*	10	*	*	*	3
	2	*	*	*	5	*	*	*	4
	3	*	*	*	0	*	*	*	1
	4+	*	*	*	0	*	*	*	0
	Total	16.4	34.0	49.6	68	19.7	41.7	38.6	40
1st Gen Polish	0	*	*	*	9	*	*	*	9
	1	*	*	*	4	*	*	*	0
	2	*	*	*	2	*	*	*	0
	3	*	*	*	0	*	*	*	0
	4+	*	*	*	0	*	*	*	0
	Total	*	*	*	15	*	*	*	9
2nd Gen Polish	0	16.3	35.8	48.0	39	*	*	*	18
	1	*	*	*	2	*	*	*	3
	2	*	*	*	2	*	*	*	0
	3	*	*	*	1	*	*	*	0
	4+	*	*	*	0	*	*	*	0
	Total	21.8	33.4	44.8	44	*	*	*	19