

**Fertility of Immigrants and Their Descendants
in West Germany — An Event-history Approach**

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Nadja Milewski, geb. am 11. Juni 1972 in Mittweida,
aus Paris

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Gutachter:

Prof. em. Dr. Jan M. Hoem, Max-Planck-Institut für demografische Forschung Rostock,
Universität Rostock

PD Dr. Hill Kulu, University of Liverpool

JP Dr. Michaela Kreyenfeld, Universität Rostock

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To my father, Manfred Milewski, a migrant himself

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1 Introduction

1.1 Germany's immigration history after 1945 — 1.2 Introduction to fertility of immigrants in Germany — 1.3 Research questions and structure of the thesis

Since the middle of the 20th century, Western Europe has been faced with growing migration flows. Social research has focused on the first generation of international migrants, the interplay between international migration and the family dynamics of migrants, however, has not been fully understood.

International migration is associated with a rapid change in the migrants' environment. This change usually takes place within a much shorter time span than societies alter as a whole. Immigrants have to cope with these changes. Therefore, the study of the demographic behavior of migrants enables us to gain insights into the patterns and speed of the demographic responses of individuals or groups to sudden environmental alterations to which they are exposed (Coleman 1994). The life-course approach (e.g., Mulder 1993, Mulder and Wagner 1993) allows us to analyze the sequencing of several events, and therefore to study the short-term as well as the long-term effects of migration on a person's life. Studies show, for example, that international migration often coincides with downward social mobility for the migrants in terms of occupation, income, housing conditions, etc. (Constant and Massey 2005). Internal or international migration and partner selection are frequently interrelated processes (Mulder 1993, Milewski 2003, Straßburger 2003, Kulu 2006), and international migration and repeated moves have an impact on the subsequent stability of a union (Roloff 1998, Boyle *et al.* 2008).

When it comes to fertility, the impact of migration is discussed based on competing hypotheses that aim to address the following questions: Does the act of migration, and its related cultural and socio-economic consequences, have a depressing or a stimulating effect on childbearing behavior? Do migrants continue to display the behavior of their old environment, or adopt behavior typical of the new environment? And what are the mechanisms behind the respective behaviors?

Moreover, the population of descendants of international migrants is growing in European destination countries. The second immigrant generation consists of persons who moved with their immigrant parents to another country when they were children, and of persons born in a country of destination to one or two immigrant parents. Second-generation immigrants have reached family-formation ages; a third generation is developing. Portes and Zhou (1993: 75) emphasize that ‘Growing up in an immigrant family has always been difficult, as individuals are torn by conflicting social and cultural demands, while they face the challenge of entry into an unfamiliar and frequently hostile world.’ Hence, research should consider a comparison between the immigrant generations: Does the behavior of the immigrants’ children resemble that of their parents, or that of the population at destination?

The objective of my doctoral thesis is to investigate the transition to motherhood of immigrants and of their children’s generation in West Germany, as well as the transitions to second and third births. A comparison is drawn between women of the first and second immigrant generations of traditional labor migrants from Turkey, former Yugoslavian states, Greece, Italy, and Spain; and their behavior is compared with that of West German women. The study contributes to the theoretical framework of short-term and long-term impacts of migration on the fertility of immigrants, compared with that of citizens of the country of destination who have no immigration background. It also aims to broaden the understanding of population behavior and changes in behavior in Germany and in Western Europe in general, since labor migration to West Germany parallels trends in other Western European countries.

The present chapter begins with an overview of Germany’s immigration history after 1945. It subsequently gives a summary of research carried out on fertility of immigrants in Germany, and finally contains an overview of this doctoral project.

1.1 Germany's immigration history after 1945

Germany¹ has been one of the main countries of destination in Europe (Fassmann and Münz 1994), despite the fact that politicians have long refused to acknowledge West Germany as an immigration country (Höhn 1979, Ronge 1997). Three main types of international migration can be distinguished: labor immigration, the immigration of ethnic Germans, and the immigration of non-German refugees and asylum seekers (e.g., Jones and Wild 1992, Fassmann and Münz 1994, Rudolph 2002)². While some types of immigrants were expected to stay only temporarily in Germany, as in the case of migrant workers, other types of immigrants were expected to stay permanently, as in the case of ethnic Germans. In fact, immigrants who were expected to remain only temporarily have shown an increasing tendency to make Germany their home base.

From 1954 to the end of the 20th century, a total of 31 million Germans and foreigners moved to Germany. About 22 million persons left Germany. As a consequence, the net immigration has been about 200,000 persons per year (Zuwanderungskommission 2001). At the turn of the century, Germany had about 82 million inhabitants, of which about ten percent were of foreign nationality. The share of persons born abroad of the total foreign population was six million (81 percent). Meanwhile, 1.4 million foreign nationals were born to foreigners in Germany (Münz and Ulrich 2000). However, the number of persons with an immigration background is,

¹ In this paper, 'Germany' refers to the Federal Republic of Germany as it has been existing since October 3, 1990. 'West Germany' refers to the pre- and post-unified former FRG, including West Berlin. 'East Germany' refers to the former German Democratic Republic (GDR) before October 3, 1990, and to the new federal states of the FRG since this date.

² The following avenues have existed for foreigners to move legally to Germany since 1973 (Münz, Seifert, and Ulrich 1997): (1) liberality and freedom of movement for citizens of the member states of the European Union (EU, since 1994) and the European Economic Area (EEA); (2) legal working opportunities for citizens of non-EU states, such as contract workers, seasonal workers, and 'guest workers'; (3) right of family reunification for foreign spouses and children up to age 16 of foreigners living in Germany; (4) application for asylum for politically persecuted persons and their closest relatives; (5) special agreements for so-called contingent refugees; (6) temporary toleration of war victims and expellees (since 1993); (7) exceptions for managers of international companies, military staff of allied countries, employees of international organizations, diplomats, correspondents of foreign media, artists, and foreign students. There are also other groups, such as members of foreign military units, employees of foreign companies, and international students; however, their stay in Germany is intended to be temporary and they are only a small share of the foreign population (Glebe 1997). Illegal immigrants are not considered here (so far, there are hardly any studies of the demographic behavior of illegal immigrants in Germany; Lederer 1999, Fleischer 2007).

in fact, much higher, because the increasing number of naturalizations hides the immigration backgrounds of many German residents.

1.1.1 Expellees (*Vertriebene*) and in-migrating ethnic Germans (*Aussiedler*)

From medieval times until the end of the 19th century, Germans emigrated to almost all countries in East Central, Eastern, and Southeastern Europe for work or for other reasons. The emigrants formed German minorities in those areas of destination. As a consequence of the nascent nationalist ideology in the middle of the 19th century, and, later, the two world wars, members of the German minorities faced various forms of persecution, including restrictions in their living conditions, forced assimilation, expropriation, forced resettlement, and deportation. Whereas before 1939 about 8.6 million ethnic Germans lived outside of the borders of the *Deutsche Reich*, and while another nine million Germans lived in the so-called German East provinces (Silesia, East Brandenburg, Pomerania, and East Prussia), the ethnic-German population living in those areas was reduced to about four million by 1960 (Ronge 1997, Heinen 2000a, von Engelhardt 2002).

The ethnic Germans who were forced to return to Germany immediately during or following the Second World War are normally called designated *Vertriebene* (expellees). They had lived mainly in the former German East provinces (see above), as well as in Poland, Czechoslovakia, Hungary, and Yugoslavia. This designation applied to about twelve million ethnic Germans in total who moved to Germany from 1945 to 1949 (Bade 1994). Almost eight million of these refugees and ethnic Germans were resettled in western Germany, mainly in the American and British sectors, while another 3.6 million were given new homes in the Soviet sector, and about 530,000 persons were resettled in Austria (Fassmann and Münz 1994, Münz 1997, von Engelhardt 2002).

The emigration of ethnic Germans from the former German East provinces and the other countries with German minorities continued during the time of the Cold War,

albeit at a relatively low level. Ethnic German immigrants who moved to Germany during this period are called *Aussiedler* (Bade 1994)³.

While 1.3 million persons moved to West Germany from 1950 to 1985, the end of the political East-West confrontation led to a huge increase in the numbers of emigrating *Aussiedler*. Their main countries of origin are Poland, the countries of the former Soviet Union (mainly Kazakhstan, Russia, Kyrgyzstan, and Central Asian states), and Romania (Jones and Wild 1992, Klüter 1993, Dietz 2000, Gabanyi 2000, Rogall 2000). Throughout the decades, immigration from Poland to West Germany was consistently dominant. However, over time a shift eastwards in the countries of origin is discernible. Most of the repatriates from Czechoslovakia and Yugoslavia entered West Germany in the 1950s and 1960s. Immigration from the former Soviet Union increased only with the 1970s. Also, immigration from Romania did not start to increase until 1967 (when a full diplomatic relationship between the Federal Republic of Germany and Romania was established), and it accelerated from 1978 onwards (Jones and Wild 1992, Ronge 1997). The number of ethnic Germans likely to immigrate to Germany in the future is estimated to be about 350,000 persons for Poland, 50,000 for Romania, and 800,000 for the former Soviet Union (Fuchs 1999).

Ethnic Germans tend to migrate as families, with the majority of new arrivals being between the ages of 18 and 65, but many immigrant families also travel with children or elderly relatives (Harmsen 1983). From 1949 through today, about five

³ The emigration of ethnic Germans during the years after 1949 was of a more voluntary character than the expulsions were from 1945 to 1949. In the later years, the emigration took place only after a request for it. Hence, the different titles — expellees from 1945 to 1949, *Aussiedler* (1950 to 1992), and *Spätaussiedler* (since 1993) — are reasonable (Münz, Seifert, and Ulrich 1997) and refer to changes in the German law as well (Heller, Bürkner, and Hofmann 2002). The majority of the ethnic Germans who were not of German citizenship — about eight million persons — immigrated to Germany as refugees and expellees until 1949. In order to facilitate integration in terms of nationality, the term *Statusdeutscher* (refugee or expellee of German ethnic origin) was introduced into the constitutional Basic Law of the Federal Republic of Germany (*Grundgesetz*, Article 116, Paragraph 1). The *Staatsangehörigkeitsregelungsgesetz* contains a right of those persons to obtain German nationality. Those persons have to meet certain criteria, which are described in the *Bundesvertriebenen- und Flüchtlingsgesetz*. After the expulsions connected to the Second World War, ethnic Germans could not leave their countries of origin freely anymore, but could freely enter West Germany. They could apply for German citizenship there, even when they were on a holiday trip or after illegally crossing the German border. This practice was changed in the *Aussiedleraufnahmegesetz*. Since July 1, 1990, ethnic Germans have to apply for entry into Germany in the respective country of origin. The *Kriegsfolgenbereinigungsgesetz* of 1992 restricts the yearly number of accepted ethnic Germans. It also prescribes that only persons born before January 1, 1993 are allowed to apply for German citizenship (Münz, Seifert, and Ulrich 1997; Dietz 2000; Heller, Bürkner, and Hofmann 2002).

million ethnic Germans have resettled in Germany (Heinen 2000b). In the past, expellees and ethnic Germans have had to undergo a real immigration process involving national identity, language, and cultural framework, although they are not foreigners according to the German Basic Law, and this situation continues to this day. Since they were treated as Germans, *Aussiedler* have the right of naturalization (Bade 1994). Therefore, in official statistics on foreigners, expellees and ethnic Germans are either not listed at all, or have not been listed over a longer period. This practice does not make it easy to obtain information about the demographic characteristics of ethnic German immigrants (Heinen 2000b).⁴

1.1.2 'Guest workers' (*Gastarbeiter*) in West Germany

The economy in West Germany started flourishing in the 1950s. The demand for workers increased strongly. At the beginning of this period, called the *Wirtschaftswunder*, immigrants from East Germany could satisfy this need (StaBA 1997). Some 3.5 million persons moved from East to West Germany between the foundation of the Federal Republic of Germany (FRG) and the German Democratic Republic (GDR), both in 1949, and the building of the Berlin Wall in 1961 (Münz 1997). Nevertheless, a large number of jobs could not be filled in West Germany in the 1950s.

As early as at the beginning of the *Wirtschaftswunder*, West Germany began recruitment activities in Southern Europe. Its first so-called 'guest-worker'⁵ treaty was signed with Italy in 1955. Treaties followed with Spain in 1960, Greece in 1960, Turkey in 1961, Morocco in 1963, Portugal in 1964, Tunisia in 1965, and Yugoslavia in 1968. Whereas half of the immigrant workers came from Italy in 1960, Greece and Spain took over as the leading countries of origin four years later, and then Turkey dominated at the end of the 1960s. 'Guest workers' received a work and residence permit for one year. This implied a rotation of the recruited workers. Accordingly, the number of both immigrants and emigrants was high until the early 1970s. Starting as early as in 1964

⁴ For the education and labor-force participation of ethnic Germans see Jones and Wild 1992, Kreyenfeld and Konietzka 2002; for religious affiliation see Jones and Wild 1992; for regional distribution in Germany see Jones and Wild 1992; for social networks and living conditions see Bauer and Zimmermann 1997; Bürkner 1998; Dietz 2000; Heller, Bürkner, and Hofmann 2002.

⁵ The term 'guest worker' is used here to refer to this group of migrant workers defined by specific conditions during a specific phase.

already (for Turkey), the rule of forced rotation was changed gradually to allow workers to apply for permits to stay for two years, and, later, for five additional years if a worker had been employed for five years. However, the rotation model failed — on the immigrants' side because the workers tended to stay in West Germany for a longer time than anticipated, and on the employers' side because the training costs for new workers were regarded as too high (Münz and Ulrich 2000, Rudolph 2002).

It was not until the recession of 1966 and 1967 that the number of foreign workers employed sank sharply, but the number increased again during the subsequent economic recovery. 'Industrial jobs which only required minimal qualifications and a high risk of unemployment had become the domain of foreign employment' (Seifert 1997: 3). 'Guest workers' were also employed in the building trade and in the service sector, primarily in the restaurant and hotel industries. Throughout the 1960s, temporary 'guest workers' were characterized by the following: they frequently accepted the hardest working conditions in the market in order to receive a wage level as high as possible; they restrained their consumption in order to send remittances to their country of origin; and, since living costs in the country of destination were relatively high, they were nearly all single males between the ages of 20 to 40, and not whole families.

The year 1973 marked a turning point in the 'guest-worker' policies of West Germany, as well as of other Western European countries. A recruitment ban was put into force because of the recession resulting from the OPEC oil embargo and the oil crisis. West Germany supported the return of migrant workers to their country of origin by financial means. This applied to 'guest workers' from non-member states of the European Community (EC). Persons stemming from the member states of the European Union (EU) and its predecessor, the EC, have had freedom of movement since its foundation in 1957; this applies in the main to workers from Italy, Greece, and Spain (CoE 1984, Herrmann 1992b, Meis 1993, Wendt 1993, Bade 1994, Münz 1997, Seifert 1997, Bauer 1998, Münz and Ulrich 2000, Rudolph 2002).

Mainly as a reaction to the end of recruitment, 'guest workers' made West Germany their primary residence and brought their families to live in West Germany. Family reunification was, and still is, possible even after the recruitment ban. It includes spouses and children of persons residing in Germany. Half of the total immigration to

West Germany during the 1970s and 1980s consisted of family members. The residency of the immigrant workers became increasingly permanent. Moves were made easier because 'guest workers' had been building up social networks consisting of families, associations, and religious communities. A stable immigrant population was being formed (Bade 1994).

Up to today, the majority of the foreign population lives in the western part of Germany. Among all foreigners, only about one in ten lives in East Germany and Berlin; the share of foreigners is currently less than three percent of the total population in each of the five eastern *Bundesländer* (StaBA 2005). The biggest groups of immigrants from non-EU countries living in today's Germany are from Turkey, as well as from the former Yugoslavia and its successor states (Migrationsbericht 2003). Through an increase in the length of stay, the structure of the foreign population started to resemble that of the host society with respect to sex ratio, age structure, and labor-force participation (Bürkner, Heller, and Unrau 1987).

On the one hand, immigrant workers may be better off in economic terms in West Germany than they would have been in their countries of origin. Turkish workers, for example, mainly came from areas that did not provide satisfactory job opportunities. 'Thus the distribution of Turkish workers in Federal Germany ... represents the whole process of the migratory chain, starting with the economically depressed village dwellers, who, rather than moving to larger cities first, make the leap by joining their relatives or countrymen abroad' (Abadan-Unat 1974: 368/369). On the other hand, a comparison between the foreign population in West Germany and Germans shows that immigrants have a lower socio-economic status than West Germans; a similar socio-economic disparity between persons of the receiving country and international migrants is also observed in other countries of destination (Fassmann 1997, Constant and Massey 2005). This includes educational attainment, in the sense that the highest educational qualification achieved by immigrants is, on average, lower than that of persons of the destination country, or that immigrants cannot utilize their education to the fullest in the labor market. This disadvantage among immigrants also continues in their children's generation. Yet, in general, a trend towards higher education is discernible among younger cohorts in recent years (Seifert 1997, Fritzsche 2000, Konietzka and Seibert 2003).

The number of foreigners participating in the labor force decreased from 2.6 million in 1972, to 1.86 million in 1978 (Münscher 1979, Wendt 1993, Bade 1994, Zuwanderungskommission 2001). Whereas the unemployment rate was lower among foreigners in Germany than it was among the German population until 1973 (0.8 percent compared to 1.3 percent in 1973), the unemployment rate of immigrants increased because of the economic crises in the mid-1970s. Since then, it has been higher than the unemployment rate among Germans (Bürkner, Heller, and Unrau 1987).

In line with the trend towards making Germany their primary place of residence, the length of stay of the foreign workers increased. In 1980, almost 40 percent of the immigrant population had been living in Germany for longer than ten years. In 1991, about 30 percent of the immigrants had been living in Germany for ten to 20 years, and 26 percent had been resident in the country for more than 20 years (Bade 1994).⁶ Waldorf (1995) shows that the probability of return-migration intentions among 'guest workers' from Greece, Italy, Spain, Turkey, and the former Yugoslavia decreased as satisfaction with their jobs and residences increased.

1.1.3 Foreign workers (*Vertragsarbeiter*) in the former GDR

The former GDR also recruited workers from foreign countries. The number of contract workers (*Vertragsarbeiter*) never reached the volume of 'guest workers' in West Germany, and the number of persons of foreign nationality currently living in East Germany is only a small share of the total number of immigrants in Germany.

The GDR signed its first contract-worker treaty with Poland in 1966, followed by treaties with Hungary in 1967 and 1973, with Algeria in 1974, with Cuba in 1987, with Mozambique in 1979, with Vietnam in 1980, with Angola in 1984, and with China in 1986 (Herrmann 1992b). A total of about 80,000 workers from 'Third World'

⁶ The structure of the immigration of workers has been changing since the 1980s. Immigrants of a high social and occupational status also came to Germany. However, their numbers ranged from between fewer than 5000 Japanese and up to 20,000 U.S. Americans per year (Glebe 1997). Inter-regional migration of highly qualified people has become common within EU countries, as has the migration of retired persons (Poulain 1996). A new form of worker immigration has been emerging since 2000: the recruitment of highly qualified IT specialists from non-EU countries. The contingent with a combined five-year permit for residence and work is 20,000. In the first three years after the new permit was established, about 10,600 persons received such a 'Green Card,' which is a small number compared to the number of the 'historic guest workers' (Petthe 2004).

countries, as these nations were called at that time, were allowed to work in the GDR (Dorbritz and Speigner 1990). Their contracts were limited to three to five years. The contract workers lived in company-owned hostels or community flats. The government strongly discouraged and policed any contacts between foreign contract workers and GDR citizens. The media were forbidden to report on contract workers and on the numbers of foreigners living in the GDR (Herrmann 1992b). Although GDR propaganda derided the 'foreign-workers policies of the imperialists,' and the 'inhuman capitalist exploitation in West Germany,' the foreign workers in the GDR faced worse social and economic conditions than their counterparts in West Germany (Bade 1994: 52). Instead of integration, exclusion was intended. Bade (1994: 52) calls the GDR policy a 'prescribed creation of a ghetto.'

Similar to 'guest workers' in West Germany, contract workers in the GDR were employed in the least desirable occupational fields in the primary production areas, mainly in the textile industry, motor-manufacturing industry, and in the production of synthetic fibers and tires. The employment contracts were strictly temporary. After their contract had expired, the workers were required to leave the GDR immediately. Foreigners had to pay all the obligatory social-security contributions, but they were not entitled to receive social benefits. According to the governmental treaties, the respective countries of origin directly received a share of the contract workers' income. The restrictions given in the contracts even included a procedure in case of pregnancy: the contract between East Berlin and Hanoi from 1987 mandated that a pregnant Vietnamese woman would have to have an abortion; otherwise she would immediately be expelled from the GDR (these kinds of contracts were similar to those that regulated the recruitment and employment of foreign seasonal workers at agricultural farms in the areas from East of the Elbe before the First World War (Herrmann 1992b, Bade 1994).

With the end of the GDR, the contract workers had to leave Germany. At the end of 1989, 191,200 foreigners were registered in the GDR. Among them, about 80 percent came from five countries: Vietnam (the largest group with about 60,000 persons), Mozambique (about 15,000), Poland, Hungary, and the former Soviet Union. The share of foreigners of the total population was 1.2 percent. Some 70 percent of the foreign population participated in the labor force, while only six percent were young persons under age 18. The share of women among the foreign population was about 30 percent

(Herrmann 1992a, Bade 1994). Within less than two years, the number of remaining contract workers dropped to less than four percent; or 6670 as of June 30, 1991. This was due to the expiration of the government treaties, and to offers of financial support for workers who returned home before their contracts expired (Herrmann 1992a, b).

1.1.4 Refugees and asylum seekers

The numbers of refugees and asylum seekers⁷ have been increasing in almost all Western European countries since the mid-1980s. The refugees and asylum seekers come mainly from the former Yugoslavia and from developing countries. In practice there are many different definitions of what constitutes a refugee. There are, for example, refugees under the mandate of the United Nations High Commissioner for Refugees (UNHCR), as well as refugees fleeing poverty or environmental disasters. A high proportion of refugees do not remain in the countries of destination. The number of refugees exceeds that of asylum seekers. In 1992, for example, about 1.5 million refugees lived in Germany, among them over 300,000 persons from the former Yugoslavia (Bade 1994, Münz 1997).

The number of asylum seekers was, on average, 7000 persons per year until the beginning of the 1970s. After the increase in the 1980s, asylum seekers made up around 20 percent of the total immigration to Germany. The number of asylum seekers reached a peak of 438,000 in 1992 (StaBA 1997, Zuwanderungskommission 2001, Wendt 2003). The numbers fell after the criteria used in evaluating asylum cases were changed. The right to asylum right has been restricted since 1992, when the government started using concrete measures in order to deport refugees from Germany (Münz 1997). The number of accepted asylum seekers decreased in parallel with the number of applicants. In total, ten percent of asylum seekers were accepted in 1995, and this was the average acceptance rate of asylum seekers throughout the 1990s. Hence, 90 percent of asylum

⁷ People who are persecuted because of their race, religion, or political conviction in their home country are entitled to asylum. If persons are granted asylum, they receive a residence permit (*Aufenthaltsrecht*) and a work permit (Bade 1994). Asylum seekers have to apply for asylum. This procedure can last up to several years. During the first three years after the arrival in Germany, a general work ban did not allow asylum seekers to work there (from January 1, 1997 onwards). This time span was shortened to twelve months on January 1, 2001. Accordingly, after a one-year stay asylum seekers receive a work permit for jobs which cannot be filled by a German or an EU citizen (Angenendt 2002).

seekers stay only temporarily in Germany. The number of persons granted asylum in Germany was 158,800 in 1995 (StaBA 1997, Wendt 2003).

1.1.5 Summary: Immigrants and their descendants in Germany

About eight percent of the population in Germany are of foreign nationality. Their main countries of origin are: Turkey (1.9 million), Italy (601,000), Greece (355,000), the states formerly belonging to Yugoslavia (1.04 million), and Poland (327,000) (Migrationsbericht 2003, StaBA 2005).

The foreign population is not evenly distributed over the federal states (see Table 1). Only about one percent of foreign families with children live in the new *Bundesländer* and East Berlin. Among all foreigners, 3.8 percent live in East Germany and East Berlin (Roloff 1997, Roloff 1999, StaBA 2005). Conurbations with a high share of industry and a specialized service sector have the highest share of foreigners (Münz, Seifert, and Ulrich 1997: 59).

Table 1: Regional distribution of foreigners by Federal State, 2005

Federal State	Population	Foreign population	
	Total	total	share in %
Baden-Württemberg	10,717,419	1,281,717	12.0
Bayern	12,443,893	1,175,198	9.4
Berlin	3,387,828	454,545	13.4
Brandenburg	2,567,704	67,222	2.6
Bremen	663,213	84,610	12.8
Hamburg	1,734,830	244,401	14.1
Hessen	6,097,765	694,693	11.4
Mecklenburg-Vorpommern	1,719,653	39,417	2.3
Niedersachsen	8,000,909	536,393	6.7
Nordrhein-Westfalen	18,075,352	1,944,556	10.8
Rheinland-Pfalz	4,061,105	311,556	7.7
Saarland	1,056,417	88,925	8.4
Sachsen	4,296,284	118,480	2.8
Sachsen-Anhalt	2,494,437	47,123	1.9
Schleswig-Holstein	2,828,760	151,286	5.3
Thüringen	2,355,280	47,817	2.0
<i>Germany</i>	82,500,849	7,287,939	8.0

Source: StaBA 2005.

Due to the character of international migration, the socio-demographic structure of the immigrant population in any country is different from that of the population at destination. In Germany, the immigrant population consists of 65 percent men, whereas the share of men in the German population is only 48 percent. The male surplus results from the immigrant populations of 'guest workers' and asylum seekers. The numbers of immigrant women have increased only since the 1970s (Proebsting 1984, Münz and Ulrich 2000). The sex ratio varies over time and by sub-group (Gröner 1976, CoE 1984, Meis 1993). Moreover, the age structure of the immigrant population is different from that of the German population. Since mainly young adults move to Germany and since the number of children has been higher among immigrants, the share of foreigners is high primarily in the age groups from 16 to 25 years (13 to 17 percent) (Münz and Ulrich 2000).

Religious affiliation is registered by the Federal Statistical Office only for persons belonging to the Lutheran Church, the Catholic Church, or the Jewish community. Both the Lutheran and the Catholic churches have about 26.5 million members, while around 102,000 people are recorded as Jewish community (StaBA 2004). The number of Muslims has been growing steadily with the number of immigrants. Since the Muslim communities have not received the status of a *Körperschaft des öffentlichen Rechts*, their members are not registered in the statistics of the *Einwohnermeldeamt*. According to the census of 1987, 1.7 million Muslims lived in West Germany, making up 2.7 percent of the total population. The vast majority of the Muslim community are of foreign origin; only three percent are Germans (FES 2000). According to more recent estimates, the number of Muslims living in Germany could be as high as three million. In addition to the two big Christian churches, around 50 other Christian communities exist in Germany. There are also about 250,000 Buddhists and 97,000 Hindus in Germany (Zuwanderungskommission 2001, REMID 2005).

The employment rates among the foreign population in Germany reflects the several waves of immigration. At the beginning of the 1970s, the share of employed foreigners was very high, especially because mainly men came to Germany. Later, when more women immigrated to Germany due to family reunions, the employment rates of foreigners sank, and unemployment rates rose to levels above those of Germans

(Höhn, Mammey, and Wendt 1990; Mammey 1990; Bender and Seifert 2000; Hillmann 2000; see Table 2).

Table 2: Employment rates of German and foreign persons by sex, age, and marital status, 1997 — %

Age in years	Germans		Foreigners	
	Total	Non-married	Total	Non-married
<u>Men</u>				
15–19	35.4	35.3	31.8	31.0
20–24	77.6	76.9	75.9	70.6
25–29	87.8	84.5	85.8	76.8
30–34	96.3	94.0	89.8	84.1
35–39	97.2	93.8	91.0	90.6
40–44	96.9	92.2	93.1	87.3
45–49	95.8	89.4	93.4	96.4
50–54	91.9	83.7	86.8	84.6
55–59	78.3	70.4	75.9	84.2
<u>Women</u>				
15–19	28.0	27.8	26.0	25.4
20–24	70.8	71.7	52.9	65.3
25–29	79.5	85.3	50.7	70.3
30–34	77.3	90.6	50.5	73.3
35–39	78.1	92.2	56.5	82.4
40–44	81.1	91.8	59.9	82.4
45–49	78.8	88.7	62.5	82.1
50–54	71.0	83.6	53.6	88.6
55–59	55.3	70.8	46.6	(too few N)

Source: Bender and Seifert (2000: 68; data of the Federal Statistical Office).

International migration often coincides with a downward trend in employment status and social class, relative to the prevailing employment rates and social conditions of the country of origin and of the host society (Höhn 1979, Fassmann 1997, Glebe 1997, Neels 2000, Constant and Massey 2005). This applies to the several groups of immigrants and immigrant generations, and it can also be observed with respect to educational attainment. Immigrants' educational qualifications are, on average, lower than those of persons of the destination country. Moreover, immigrants may be unable to utilize their formal education in an adequate manner. These disadvantages also continue in the immigrant children's generation. Compared to West Germans, foreign nationals tend to have lower educational attainment; a higher share has not completed

any school degree. This applies to persons both of the first and second immigrant generations, although a trend towards higher education became visible among younger cohorts in recent years (Bonacker and Häufele 1986; Buttler and Dietz 1990; Seifert 1997; Greif, Gediga, and Janikowski 1999; Thränhardt 1999; Fritzsche 2000; Diehl 2002a; Kreyenfeld and Konietzka 2002; Diefenbach 2003; Konietzka and Seibert 2003). Correspondingly, the economic situation is worse for foreigners than it is for Germans (Jones and Wild 1992, Seifert 1997, Fuchs 1999, Roloff 1999, Schulz 1999). Nevertheless, it seems that socio-economic conditions tend to improve among immigrants as the length of stay increases (Münz *et al.* 1997, Büchel and Frick 2005).

Foreign and German couples show differences in their labor-force participation rates: while both partners are active in the labor market in about 40 percent of foreign marriages, over 60 percent of German marriages are two-earner couples. The share of couples with children in which either one of the spouses is unemployed is 22 percent among foreign marriages, and seven percent among German couples (Rupp 1980, Roloff 1997, Roloff 1999). According to Hillmann (2000), twelve percent of foreign women have stated that the reason they are not employed is because their parents or husband do not want them to work. Compared to the 1980s, the lack of a work permit is, however, of decreasing importance. Women from the former Yugoslavia are an exception — eleven out of 100 unemployed women cannot work because they do not have a work permit.

1.2 Introduction to fertility of immigrants in Germany

Whereas research on immigrants in West Germany has mainly focused on issues of integration, such as education and employment, the family situations of immigrants have received less attention. The topic has not been neglected, but current research shows several weak points. For years, a missing link between results and theory has been deplored (Kane 1986, Vaskovics 1987). In the literature, there has been an assumption that international migration affects each dimension in the family life of a person (Nauck 1985). However, the awareness of this has led to an emphasis on the differences that result in particular from cultural differences between immigrants and Germans. In the literature attention has tended to be paid to exotic and unusual behavior. This has produced a '*Folklore des Halbwissens*' (folklore of half knowledge, BMFSFJ 2000: 75; c.f. Beck-Gernsheim 2006). Thus certain groups, particularly the ones that seem to be more different from Germans than others, have more often been the object of study than others.

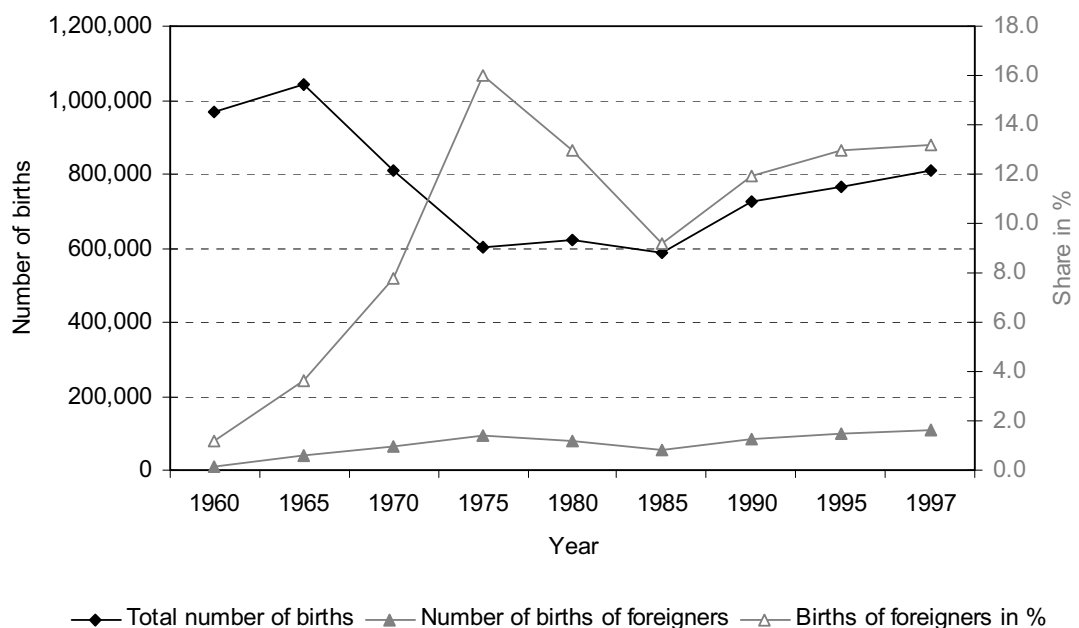
Specifically, the family formation of immigrants — union formation and the transition to parenthood and to subsequent births — has not received much attention for some time (Vaskovics 1987), and 'no attempt has been made to analyze the longer trends in guest worker fertility or to link migrant fertility to selectivity or assimilation' (Kane 1986: 103).

Due to the characteristics of the various immigration waves, many family events among the first generation of immigrants took place before the migration, and not in Germany. In the 1960s, only about five percent of newborn children in Germany were of non-German nationality. But, by the end of the 20th century, about 100,000 newborn babies per year were of foreign nationality, representing about 13 percent of all newborns, with a peak of 17 percent in 1974. The increase in the share of foreign births of the total number of births is related not only to a slight increase in the number of foreign births, but also to the decline in West German births. The family patterns of immigrants and West Germans differ in a few aspects. The level of childlessness among West German women is as high as 20 percent, and is higher than among the various immigrant groups. The West Germans' mean age at first birth has increased steadily

from 23.7 for the 1945 birth cohort, to 25.4 for the cohort of 1958, and is higher than that of immigrants. There is a dominance of the two-child family among West German married couples, whereas immigrants from Turkey more often have three and more children (Vaskovics 1987, Schwarz 1996, Roloff 1997, BMFSFJ 2000, Kreyenfeld 2001a).

Marriage is the main partnership type for West German women as well as for immigrant women to West Germany. It is also the most important factor for childbirth, both for West Germans and for immigrants. About 85 percent of married couples in both groups have children (Carlson 1985b, Schwarz 1996). Compared to the levels in the respective countries of origin, the share of non-marital births among the total number of births of immigrant women to West Germany is much higher, however, and reaches levels similar to those of West Germans (about ten percent since the 1980s; Schwarz 1996).

Figure 1: Number of births in Germany, 1960–1997



Source: BMFSFJ 2000: 70 (data of StaBa and Statistische Jahrbücher 1960–98).

Note: Up to 1990 the former West Germany, after 1990 East and West Germany.

As far as further determinants of fertility are concerned, the few studies carried out so far show that the behavior of immigrants is affected in a manner similar to the behavior of West Germans. Women who have completed secondary education have lower fertility than women with lower educational attainment. People without religious affiliation have fewer children than women who are members of a religious group, and women who originally come from rural areas have higher fertility than women from cities. In general, fertility declined towards the end of the 20th century (Kane 1986 and 1989, Mayer and Riphahn 2000).

Ethnic German immigrants and their children are not recognizable in the statistics as immigrants because of naturalization. This makes it rather difficult to conduct research on this group (Dinkel and Lebok [1997] studied childbearing among ethnic Germans after the move to Germany; they found low birth rates after migration and concluded that the move almost completes the process of family formation). The same applies to asylum seekers as soon as asylum and German nationality are granted, and to other immigrants who have gained German citizenship. It is not possible to distinguish between immigrants and their children, either, when only nationality is registered. As far as migrant workers are concerned, this was not an issue during the first decades of immigration, since a second generation did not exist.

As we have seen, the character of immigration to Germany has been changing. Primary family reunion — i.e., marriage migration — and the migration of single persons has increased as a share of total immigration in Germany, as it also has in other Western European countries. At the same time, the number of mixed marriages increased. The number of marriages of a German national to a non-German citizen almost tripled during the last three decades of the 20th century (Roloff 1998). Official statistics underestimate the numbers of foreign marriages, though (Straßburger 2000).

The family formation of first-generation immigrants increasingly takes place in Germany, a second generation of immigrants has reached family-formation ages, and a third generation is emerging. Research on fertility of immigrants in Germany has, however, not sufficiently responded to these developments. Most of the studies use nationality as an indicator for classifying someone as an immigrant. Due to naturalization, this may not cover all births of the immigrant population, however. Only

few studies distinguish between migrant generations (Milewski 2003, Straßburger 2003, González-Ferrer 2006 on partner selection). Although there is a notion that it is not necessarily cultural differences between the country of origin and the country of destination that have an impact on demographic behavior, but rather the migration process itself and its order in the sequence of life events, not many studies take the duration of stay into account (Hennig and Kohlmann 1999, Mayer and Riphahn 2000 on fertility). All fertility studies use summary measures, such as the Total Fertility Rate or completed fertility, rarely asking about the sequencing of childbearing and migration (as an exception, Nauck 1987 looks at the role that children who remain in the country of origin play in further childbearing).

1.3 Research questions and structure of the thesis

This doctoral project examines the fertility behavior after migration from one cultural context to another. It addresses the following questions: Does international migration, and its related cultural and socio-economic consequences, have a depressing or a stimulating effect on childbearing behavior? Do immigrants tend to continue to display the behavior of their old environment, or adopt the behavior of the new environment? And what are the mechanisms behind the respective behaviors? Moreover, the study aims at comparing the fertility behaviors of women of the first and the second generations of immigrants, since the population of the second immigrant generation is growing in European receiving countries. The second generation consists of persons who moved with their immigrant parents to another country when they were children on the one hand, and of persons born in a country of destination to one or two immigrant parents on the other.

The theoretical reasoning of the study rests on the life-course approach. According to this perspective, the life of an individual is composed of a series of transitions or life events embedded in trajectories or careers that give them distinct form and meaning (Elder 1985). Information on individual-level life histories enables the researcher to link demographic events in the life domain of an individual to past events in the same domain, to changes in other life domains ('parallel careers'), and to changes in the lives of other family members and members of social networks ('linked lives'). This procedure advances significantly our understanding of the causes of demographic behavior. While there is an ample literature that examines how changes in the educational and occupational careers of individuals shape their family behavior, their fertility, and migration patterns, the interactions between partnership careers and childbearing on the one hand and spatial mobility on the other have received little attention until recently (Kulu and Milewski 2007). This project aims to contribute to improving this situation.

The structure of the paper is as follows:

The second chapter of the thesis is dedicated to the theoretical framework that guides the analyses. First, it introduces the main theories and hypotheses that exist regarding the fertility of migrants. This section draws upon studies of both international and internal migrants, since the frameworks have parallels. For the first generation of both groups of migrants, the discussion centers on five hypotheses. These hypotheses are related to timing effects, to the socio-demographic characteristics of migrants, as well as to living conditions and cultural factors. Since the immigrant respondents in this study stem from countries that used to have a tradition of higher fertility levels than West Germany (even if this has changed in the past two decades), one can generalize that the women under consideration moved from a higher-fertility context to a low-fertility context. Given the fertility differentials between country of origin and country of destination, two outcomes may be hypothesized for the fertility of immigrants: They may have a higher fertility or a lower fertility than that of the population at destination (including a convergence with the fertility levels of persons at destination).

If the socialization of the immigrant women in the country of origin continues to have an impact on the fertility intentions and behavior of a woman, then she would have higher fertility levels after migration even in a country of lower fertility (the *socialization hypothesis*). A second theory that also predicts a fertility stimulating effect draws on an the interrelation of events, and assumes that immigration and union formation/marriage are interrelated events. Therefore, fertility may increase after immigration, not due to the move, but due to household formation (the *hypothesis on the interrelation of events*).

Migration may have the effect of decreasing fertility. This may be directly caused by the migration process and its related difficulties (the *disruption hypothesis*), or by the impact of the living circumstances and the societal framework at destination as the duration of stay increases (the *adaptation hypothesis*). Moreover, the selection and composition of the immigrant population can play a role. Similarities or differences in fertility behavior between immigrants and persons of the country of destination may perhaps be traced back to the selectivity of the migrant groups concerning their fertility intentions, which may be more similar to those prevalent in the destination country than

to those characteristic of the country of origin. However, immigration may favor certain socio-demographic groups that are amenable to having more children than is typical among the population of the country of destination (or even among the population at origin). Fertility differentials may therefore be explained by compositional differences, and may vanish as the socio-demographic structure of an immigrant group gets to resemble that of the indigenous population at destination (the *hypothesis of selection and characteristics*).

One of the goals of this study is to investigate similarities and differences in the fertility behavior of first- and second-generation immigrants. Since the framework that focuses on the migrants emphasizes the role of the migration process, it is of limited use for a study of the second generation. Therefore, our investigation also draws upon the theoretical framework concerning fertility behavior of minority groups. This can be applied to members of subsequent migrant generations who have not experienced any move themselves, provided they maintain a sub-group behavior that is distinct from that of the majority population. In line with the framework of migration and fertility, both a higher fertility and a lower fertility can be hypothesized for women who belong to a minority group. Causes may include the composition of the group (the *hypothesis of characteristics*), the economic situation, as well as the experience of discrimination and uncertainty (the *hypothesis of the minority status*), and the maintenance of distinct fertility norms (the *hypothesis of a sub-culture*).

The second chapter provides also information on the family-formation contexts of the five countries of origin considered here; these are Turkey, the former Yugoslavia, Greece, Italy, and Spain — countries that traditionally have provided West Germany and other Western European countries with labor migrants. Since the socio-demographic characteristics of women and their partners play an important role in fertility behavior, the second chapter also provides an overview of the structure of the ‘guest-worker’ population of Turkish, former Yugoslavian, Greek, Italian, and Spanish backgrounds living in West Germany; and of research that has been carried out on their fertility in West Germany so far. The chapter concludes with the working hypotheses guiding the analysis. The main questions are as follows: Are the transition rates to first, second, and third births among immigrant women from migrant-worker countries different from those of West Germans? If so, what is the extent to which fertility

differences can be explained by immigrants' selectivity, duration of stay in Germany, and compositional differences?

The third chapter contains the empirical analyses. It opens with a section on the data, covariates, and methods used. The data comes from the German Socio-Economic Panel study (GSOEP), carried out by the German Institute for Economic Research, Berlin. The regional focus is on persons who live in West Germany, because the share of immigrants living in East Germany is very low. The GSOEP data provides retrospective information on women's birth histories, as well as on immigration and marriage histories. Therefore, the transitions to a first, second, and third birth can be studied from the perspective of the life course by applying event-history analysis.

The study concludes with a discussion of the results and suggestions for further research (Chapter 4).

The contributions of my study to research on fertility of international migrants in Germany can be summarized as follows:

- Distinctions are made between immigrant generations;
- Attention is given to the timing/sequencing of different events in an individual's life course (migration, union formation, childbearing);
- The interplay between different domains in a woman's life (education, employment) is addressed;
- The impact of the partner's characteristics on a woman's fertility is considered.

2 Theory and Empirical Findings in Previous Investigations

2.1 Migration and fertility — 2.2 Family-formation context in the countries of origin —
2.3 Socio-demographic characteristics of ‘guest workers’ and their descendants in
Germany — 2.4 Research summary: Fertility of ‘guest workers’ in Germany —
2.5 Research approach and working hypotheses

2.1 Migration and fertility

‘The vast body of empirical evidence on the origins, speed, and correlates of fertility declines in different historical and geographical settings shows more diversity than a simple theory of fertility change would predict,’ states Hirschmann (1994: 203). If one cannot expect a single theory to explain fertility and fertility changes, the picture gets even more complex in the context of international migration because different environments (at origin and destination) and the migration process itself may shape fertility behavior and attitudes not only of the migrants, but also of their relatives. The women and men who leave their region of origin and settle in a different region, i.e., the first generation of migrants, share the experience of the migration process. The migration takes place within the fertile lifespan and/or union-formation ages (or at older ages). The persons directly experience two societies when they move from one country to another, or two living environments in the case of internal migrants.

The majority of studies on fertility of international migrants have been carried out on North America, where immigration has a longer history than in Europe. Therefore, research can investigate the demographic behavior of both recent immigrant groups, and of sub-populations that have resided there for several generations and have formed minority groups. Among recent immigrants, much attention has been given to the Hispanic population in the United States (Bean and Tienda 1990), who come from countries that have higher fertility levels than the U.S., such as Mexico (Bean and Swicegood 1985, Frank and Heuveline 2005) and Puerto Rico (Landale and Hauan 1996). Other immigrant groups under study mainly come from Asia, such as the Chinese (Hwang and Saenz 1997), the Indochinese (Rumbaut and Weeks 1986), and the

Japanese living in the U.S. (Goldscheider and Uhlenberg 1969). The minority group that has been mainly studied are black Americans (Goldscheider and Uhlenberg 1969, Sly 1970). Studies have also been carried out in Australia (Abbasi-Shavazi and McDonald 2000, Abbasi-Shavazi and McDonald 2002; Khoo, Mc Donald, Giorgas, and Birrell 2002) and Canada (Ram and George 1990, Ng and Nault 1997), as well as in other traditional immigrant countries.

In modern day Europe, by contrast, both immigration streams and research on immigrants' fertility are relatively recent. Although the immigration histories and immigrant groups are quite different in the 'New World' than in the 'Old World,' most immigrant groups originate from countries that exhibit higher fertility than is prevalent in the countries of destination. Examples of this in Europe include the immigrant-worker populations from Mediterranean countries living in France, West Germany (Kane 1986 and 1989, Mayer and Riphahn 2000), Belgium (Schoenmaeckers, Lodewijckx, and Gadeyne 1998), and the Netherlands (Schoorl 1990, Alders 2000), as well as people from former colonies who have moved to the Netherlands (Alders 2000), and people from the Maghreb states who have moved to France (Toulemon and Mazuy 2004). The main research approach has been to compare people of different origins in the same place of destination, but some attempts have been made to compare the fertility of emigrants with that of stayers at the respective places of origin (Abbasi-Shavazi and McDonald 2002).

Whereas research on the fertility of first-generation migrants stresses the impact of the move itself and the differences or similarities between the context of origin and that of destination, the situation is different for the descendants of the actual migrants. While persons who migrated with their parent(s) as children have also experienced two living environments, the migration process itself takes place before the children reach family-formation ages. People who are born in the country or region of destination have no migration experience of their own, and come into contact with the region of the parents' origin mainly indirectly through their parents or other social-network partners, or through travel to these regions. In research on fertility of internal migrants, people of generations 1.5 (persons who migrated during childhood) and 2.0 (persons who were born to migrant parents at destination) are, in general, not considered migrants; in

research on international migrants, special attention is given to the behavior of subsequent immigrant generations.

This applies also to studies on minority groups, which have been carried out mainly in the U.S. As one of the classic immigration countries, researchers have been able to observe the demographic behavior of subsequent migrant generations in the U.S. for much longer than in Western Europe. Although West Germany and other countries in Western Europe experienced earlier immigrant waves, it has not been possible to follow the fertility behavior of the second and third generations, or of ethnic Germans in Germany, since they are not ‘visible’ in the statistics. One may argue that both the immigration contexts and the societal contexts of the receiving countries are different in North America than in West Germany. Moreover, research on the fertility of immigrants has tended to emphasize different topics. In the United States, historically:

‘... the study of the fertility of migrants was intimately related, early in this century, to political issues and policy making needs. The issue that stimulated research was related to the extent to which immigrants and their progeny tended to dilute the “native” population of the United States. Immigrants were identified as a target population for applied social programs’ (Macisco and Myers 1975: 111).

However, ‘a growing awareness of the need to incorporate the study of differentials within a major macro-structural context’ developed later on (Macisco and Myers 1975: 111). The same applies to the Western European context, with its major demographic changes in the previous decades.

This part of the chapter therefore summarizes the theoretical framework concerning the fertility of migrants and of minority groups, and brings them together. Five main hypotheses are discussed when we analyze the fertility behavior of international or internal migrants. They refer to timing effects, the socio-demographic characteristics of migrants, and their living conditions.

2.1.1 Disruption

The underlying assumption of the disruption hypothesis is that a move itself, as well as the time preceding and following the move, is stressful for a person. For couples, migration may also mean that the two partners live separately for a certain period if they

move at different points in time. Accordingly, fertility levels may decrease preceding the migration due to the anticipation of a move and/or the separation of the partners. Fertility levels may also decline shortly after the migration because of difficulties related to the migration itself, or to the new environment. International migrants, in particular, are confronted with a drastic change in the conditions of their daily lives.

Evidence for the disruption hypothesis has been found for immigrants moving to Australia (Carlson 1985a, Abbasi-Shavazi and McDonald 2000, Abbasi-Shavazi and McDonald 2002), Mexicans moving to the U.S. (Bean and Swicegood 1985, Stephen and Bean 1992), and immigrants to Canada (Ram and George 1990, Ng and Nault 1997). Both studies on immigrants' fertility in Canada view the disruptive effect as being of a very short duration (and the findings are probably related to the estimation method chosen, as in Ng and Nault [1997]). Increasing numbers of births after a disruptive phase are observed for immigrant women, regardless of their previous number of children. Ram and George (1990) assume that there is a desire to have additional children in the new home country.

Evidence for the disruption is also seen for the fertility of internal migrants (Goldstein 1973 for Thailand, Hervitz 1985 for Brazil). Rundquist and Brown (1989) distinguish between several types of internal migrants in Ecuador, and find that the number of children ever born decreases from non-migrants to permanent migrants and return migrants; the smallest number of children is estimated for circular migrants. In Europe, postponement of births is found for women in England and Wales who moved over long distances. However, this seemed to be not directly related to the move itself, but to that fact that women with higher levels of education moved over longer distances than people with lower levels of education (Grundy 1986).

Other studies do not find evidence for a fertility-disruption effect of international migration. Andersson (2004) estimates birth risks separately by birth order, and finds strongly elevated first-birth risks, and slightly elevated third-birth risks for immigrants in Sweden:

'In particular, it is noteworthy that these birth risks are elevated already in the first twelve months after such a migration, which means that many of the children born in Sweden were actually conceived before the registered immigration to Sweden... Our findings of

elevated levels of childbearing immediately after a migration to Sweden give no immediate support for the notion of “disruptions” in childbearing in connection with international and other long-distance migration. If such disruptions indeed are important, then they must take place well in advance of any migration, thus being related to a postponement of the childbearing in anticipation of such a possible event’ (Andersson 2004: 767, 771).

Frequently, elevated birth rates shortly after migration are interpreted as constituting catch-up behavior for postponed or interrupted childbearing in the phase immediately preceding and during the migration (Goldstein and Goldstein 1981 for internal migrants in Thailand, Ford 1990 for immigrants to the U.S., Toulemon and Mazuy 2004 for immigrants to France).

2.1.2 Interrelation of events

Rather than assuming that elevated birth transition rates shortly after immigration constitute catch-up behavior, we could instead assume that the higher rates result from a situation in which several events take place at the same time: namely, migration and union formation (Mulder and Wagner 1993, Singley and Landale 1998). Evidence for the latter assumption has been found for international migrants, as well as for internal migrants. This seems to be a universal pattern, in particular for the first child (Lindstrom 2003 on Guatemala, Andersson 2004 on Sweden, Kulu 2005 on Estonia, Kulu 2006 on Austria and Poland, Nedoluzhko and Andersson 2007 on Kyrgyzstan).

Singley and Landale (1998) compared the risk of first birth of several groups of Puerto Rican women. Their analysis reveals that single women migrating to the U.S. were much more likely than their non-migrant counterparts in Puerto Rico to form unions and to have a first child. The authors conclude that migration to the U.S. is to be seen as a part of the family building process for many Puerto Rican women. Lindstrom and Giorguli Saucedo (2007) draw similar conclusions about the interrelation between fertility and migration from Mexico to the U.S.: Women who move to the U.S. exhibit significantly higher first-birth risks than the women who stay in Mexico. This suggests a connection between migration and family formation, as a child born in a destination country is believed to strengthen the legal status of the parents there. Similarly,

Andersson's (2004) study on immigrant fertility in Sweden reveals elevated levels of childbearing during the first couple of years after immigration to Sweden.

One may expect childbearing to start soon after migration and marriage, particularly among marriage migrants, who constitute a special type of family reunion. This was proven, for example, for immigrants from Turkey and Morocco to the Netherlands (Schoorl 1990, Alders 2000).

Yet also among couples who are married but still childless, migration and first birth are often interrelated:

'Births are not only delayed or averted as a consequence of migration, but migration as well is initiated, postponed, or deterred as a consequence of births ... Married women (here: from Mexico) are most likely to migrate to the United States before or in the same year as the first birth. Once the first birth occurs, however, the likelihood of migration decreases progressively with each additional birth' (Lindstrom and Giorguli Saucedo 2007: 849).

Single migrants, by contrast, may also have to spend a longer time searching for a partner. Carlson (1985a) showed elevated marriage ages for first-generation immigrants moving to Australia when they were single; Milewski (2003), for first-generation immigrants to Germany. Hence, it is important to consider the partnership status of a migrant. However, once married, the fertility levels of former single migrants do not seem to be influenced by migration (Carlson 1985a). Meanwhile, Ng and Nault (1997) observe lower fertility levels among some Asian immigrant groups to Canada because of their high share of unmarried women.

2.1.3 Adaptation

While the hypotheses of disruption and interrelation of events focus on short-term impacts of migration, the adaptation hypothesis offers a medium-term perspective. Given that fertility patterns vary between the regions of origin and destination, a convergence may be achieved within some years of residency (shown by Iutaka, Bock, and Varnes 1971 for internal migrants in Brazil; Rindfuss 1976 for Puerto Ricans to the U.S.; Bach 1981 for internal migrants in Malaysia; Farber and Lee 1984 for rural-urban migrants in Korea; Hervitz 1985 for internal migrants in Brazil; Nauck 1987 for Turks to Germany; Ford 1990 for the U.S.; Ram and George 1990 for immigrants in Canada;

Schoorl 1995 for European countries; Mayer and Riphahn 2000 for labor migrants from Mediterranean countries to Germany). This resemblance may be triggered mainly by two channels: cultural factors and/or socio-economic conditions.

Studies which pay attention to the role of socio-economic conditions in fertility differentials between immigrants and the population at destination mostly refer to 'New Home Economics,' as defined by Becker (1981). This theory centers on fertility as the result of household decisions about the allocation of scarce resources (mainly time and money) for the acquisition of commodities (such as children). As individuals are assumed to strive for a maximization of productivity and utilities while minimizing costs, persons who share a household may specialize in different forms of productivity. A labor division is likely to occur. For women, this mainly means that family and household work on the one hand, and labor-market activity on the other, may appear to be competing careers. Consequently, it is assumed that women must decide between having a family and having an occupation, particularly if the society does not provide a context that allows combining the two domains.

The problem of incompatibility occurs among immigrants as well as among the population of the destination. However, immigrants, especially of the first generation, may be affected by these economic considerations to a greater extent: immigrants may have higher costs in order to achieve a utility of a level that is similar to that of a non-migrant at destination in a comparable situation, or they may never be able to attain a similar level. This can result, for example, from a command of the language at destination that is not sufficient, or from an educational background that is not applicable in the new context.

Kreyenfeld and Konietzka (2002) show, for example, that immigrants to Germany cannot utilize their education in the German labor market to the fullest, and Maani (1994) has drawn similar conclusions about first- and second-generation immigrants in Australia. If the costs of achieving a sufficient position in the labor market are too high, one may hypothesize that immigrant women are more likely to withdraw from work and engage more in family life, including having a higher number of children than persons of the majority population (Andersson and Scott 2005). By contrast, Goldscheider and Uhlenberg (1969), Bean and Tienda (1990), and other

authors argue that women of immigrant groups or minority populations who have achieved a comparatively good position in the labor market may not take the risk of losing this position by having (additional) children, and may therefore reduce their family size to a number that is even smaller than that of respective majority population. Rumbaut and Weeks (1986) found that refugees from Indochina to the U.S. who are employed had lower fertility than non-employed women (c.f. Massey 1981).

Andersson and Scott (2005) suggest that immigrants' decisions about whether to engage in fertility behavior, join the labor force, or attempt to balance work and family depends on general societal conditions. In Sweden, for example, where 'no general pattern of a very pronounced incompatibility between childbearing and labor-force participation for the majority of native-born women' (Andersson and Scott 2005: 23) can be observed, immigrant women (though not equally integrated into the labor market) show the same demographic responses to labor-market positions as Swedish-born women: women who are not established in the labor market are not very likely to become mothers, while women who are gainfully employed are more likely to have a first child the higher their income is. For a first birth, they find elevated transition rates for both foreign-born and Swedish-born women who are employed, compared with women who are not established in the labor market (Andersson and Scott 2005). They show that a similar positive, although weaker, association between labor-market attachment and fertility also exists in terms of the propensities of having a second and a third child, which Andersson and Scott (2007) attribute to the equalizing effect of the Swedish welfare state. Therefore, Andersson and Scott (2005, 2007) point out that a convergence of the fertility behavior of immigrants and that of the host society is not due to acculturation, but can be seen as adaptive behavior to the general situation in the host society, as well as to the host country's social, political, and labor-market conditions.

Andersson (2004) shows that immigrants from non-Nordic countries in Sweden react to changes in family policies similarly to women born in Sweden or in another Nordic country, though slightly later. Taking the duration of stay in Sweden into account, he sees a 'rapid adaptation' of immigrants' fertility to Swedish-native behavior, since the transition rates to the respective parities are similar for immigrants and Swedes after a six-year stay.

Lindstrom and Giorguli Saucedo (2007) interpret the low second- and third-birth levels of Mexicans in the U.S. as indicating that first-generation immigrants rapidly adopt the lower fertility practices that are dominant in the U.S.

For immigrants to Israel, Friedlander and Goldscheider (1978; c.f. Friedlander, Eisenbach, and Goldscheider 1980) observe an adjustment in the timing of births to the respective socio-economic circumstances. Adaptive behavior starts immediately following immigration. ‘The convergence of fertility *within* ethnic groups and the great convergence of fertility *between* ethnic groups is remarkable evidence of rapid fertility response appropriate to societal changes’ (Friedlander and Goldscheider 1978: 313). The speed of converging behavior depends on the degree of difference between the socio-demographic patterns of the respective countries of origin and destination (Coleman 1994).

From a historical perspective, socio-economic circumstances as channels of adaptive behavior were also found among Norwegian immigrants to the U.S. a century ago (Gjerde and McCants 1995). In the middle of the 20th century, increasing education was seen as the most important factor for the rapid convergence of fertility behavior of second-generation Italians with U.S. patterns (Rosenwaike 1973).

Whereas most of the studies on family dynamics of international migrants focus on persons moving from a higher- to a lower-fertility context, and observe a convergence between native-born and new residents, a convergence can also be observed for those moving from a lower- to a higher-fertility environment, as it is the case for immigrants from the former Soviet republics to Israel. Nahmias (2004) explains that this behavior is related to better socio-economic circumstances that are conducive to having more children than in the country of origin. Hwang and Saenz (1997) also observe increased fertility for immigrants to the U.S. from the People’s Republic of China, where one-child policies dominate fertility behavior.

As for any cultural channels of adaptation, the evidence is far from pointing in one direction. Fertility adaptation may have parallels in, or be inter-related with, other processes, mainly the choice of a marriage partner. Saenz, Hwang, and Aguirre (1994) observe lower fertility rates for Asian women in the U.S. who are married to an American, compared to Asian women who are married to an Asian partner. Where

culture allows for out-marriage, fertility behavior may also be expected to resemble that of the population at destination.

Another indicator for cultural adaptation used is non-marital childbearing. Singley and Landale 1998 show for immigrant women from Puerto Rico to the U.S. that they have a higher risk of having a first birth outside marriage compared to their counterparts at origin.

However, certain aspects of the immigrants' culture may be more resistant to adaptive behavior. For example, another factor influencing the changing cultural patterns discussed is the use of contraceptives. One may hypothesize that immigrants adopt innovative behavior, such as using birth-control methods, in a manner similar to that of the people at destination. Therefore, fertility may show similar developments. However, after investigating the use of the pill in Israel by several immigrant groups, Okun (1997) contradicts this assumption: for women stemming from Asia and Africa, these 'findings thus identify the existence of cultural barriers to the adoption of new behavior by a disadvantaged subgroup' (Okun 1997: 334), controlling for religiosity and socio-economic covariates.

Ware (1975) shows differences by religious affiliation for immigrant women in Australia. In general, religion is seen as enhancing a sub-culture of certain immigrant groups in Australia, in particular for Muslim people (Abbasi-Shavazi and McDonald 2000) and Orthodox Greeks (Ware 1975, c.f. Abbasi-Shavazi and McDonald 2002), which coincides with lower socio-economic status. Among immigrants from the Mediterranean countries:

'...there are culturally distinctive behaviour patterns, most especially those which are associated with the Orthodox Greeks as opposed to the majority of Catholics. However, the most significant explanation of differences between the Southern-European-born immigrants and the native-born population is not through culture conflict in the more restricted sense of the term, but through differences in socio-economic status. The behaviour of the mass of scantily educated, unskilled, poor, Southern European immigrants is not very different from that of native-born wives who are equally under-privileged' (Ware 1975: 376).

In literature on fertility of internal migrants, differences in cultural patterns are seen as contributing to migrants' fertility differentials. As cultural customs (mainly

attitudes and use of contraceptives) change with increasing time of residence at destination, fertility levels between migrants and non-migrants converge. Jensen and Ahlburg (2004) show this for the fertility of rural–urban migrants in the Philippines, Lee (1992) for Cameroon, and Umezaki and Ohtsuka (1998) for Papua New Guinea.

Adaptation to the type of settlement has been found in studies on fertility of internal migrants in Europe, as well. Courgeau (1989), exploring longitudinal data, examined the fertility of rural–urban and urban–rural migrants in France for pre-war birth cohorts. Urban–rural migrants adapt to the behavior dominant in the rural areas, and have an increase in fertility.

For rural–urban migrants, however, it is demonstrated that these migrants are a selected group; their fertility decreases according to their fertility preferences. For example, Kulu (2005) shows for Estonia that migrants, independent of their origins, exhibit fertility levels similar to those of non-migrants at destination, whereby fertility is higher in rural areas. Explanations for the discrepancy between fertility levels in rural and urban areas include differences in housing conditions, as rural areas provide larger living spaces than in cities, and speculation that traditional family norms and values are more strongly maintained in rural areas than in cities.

2.1.4 Socialization

An alternative assumption is offered by the socialization hypothesis. This hypothesis emphasizes the role of the migrants' socialization by focusing on the values, norms, and behavior dominant during a person's childhood, and assumes their continuance during the life course. Accordingly, immigrants may follow the fertility patterns as perceived in their country of origin, even if they differ from that of the host society. Immigrants from different countries of origin that exhibit different fertility patterns may show the same fertility differences in the country of destination. This has been proven for immigrants in several Western European countries (Schoorl 1990, Alders 2000, Andersson 2004), as well as for several origin groups to the U.S. (Massey 1981, Kahn 1988).

Andersson (2004) finds differences by country groups of origin, mainly higher birth risks at parity three and higher for women from countries with a Muslim tradition

(Turkey, Arab-speaking countries in the Middle East and North Africa, Somalia), compared to other immigrant groups and native-born persons. Whereas this analysis does not control for socio-economic indicators and is rather difficult to interpret, the follow-up study of Andersson and Scott (2007) looks at labor-force participation. Again, they find that immigrant women from (most) high-fertility countries (Somalia, Turkey, and Vietnam) have significantly higher second- and third-birth propensities than Swedish-born women, thus providing evidence of socialization effects along with adaptation processes, which become visible when examining transitions to a higher-order parity.

Evidence for the socialization hypothesis also comes, however, from studies on fertility of internal migrants (Hervitz 1985 on Brazil).

The long-term impact of migration can be observed in the fertility behavior of second-generation immigrants who are exposed to their parents' behavior, values, and norms; as well as to those prevailing in the receiving country. If the societal environment during childhood and adolescence was dominant in a meaning-giving system, the second-generation women who are born in the new destination to immigrant parents would consequently display behavior typical of the destination; i.e., behavior that differs from their parents' behavior. This has been discussed mainly as the assimilation hypothesis in the U.S. context. Whereas in the past, these generational differences have been seen as a continuous process (Gordon 1964, Kahn 1988, Stephen and Bean 1992), more recent research allows for a more diversified picture. Portes and Zhou (1993) point out that a process of adaptation should be seen as segmented or selective assimilation. In the U.S. context, the authors suggest three possible outcomes of an assimilative process: acculturation and integration into the white middle class, assimilation into a permanently poor underclass, and rapid economic advancement with deliberate preservation of the ethnic community's ties. Studies show that children of immigrants remain in their co-ethnic community because this is regarded as the best strategy for capitalizing on material and moral resources otherwise not available (Portes and Zhou 1993). Fertility is, however, not considered in the literature on segmented assimilation since it focuses primarily on childhood and adolescence (c.f. Portes and Rumbaut 1996, Portes and Rumbaut 2001).

Regarding fertility behavior, results for the subsequent immigrant generations at several destinations do not show a uniform picture, and it has been demonstrated that the various groups at the same destination do not follow a similar pattern (Kahn 1994). One may, however, identify one general trend: fertility levels of second-generation women are, in the main, between those of the first immigrant generation, and the birth rates of the majority population at destination (Kahn 1988 for the U.S., Stephen and Bean 1992 for Mexican-origin women in the U.S.). Landale and Huan (1996) observe a convergence between second-generation immigrants from Puerto Rico to the U.S. in terms of a delay of marriage, and an increasing share of non-marital births.

No common pattern is found for second-generation immigrants to Australia. Immigrants with a background that resembles the Australian one (like arrivals from other Anglo-Saxon countries) display fertility behavior that is more similar to Australian fertility behavior than do persons with a background that differs from that of Australians (Khoo *et al.* 2002; c.f. Abbasi-Shavazi and McDonald 2000). By contrast, for first- and second-generation immigrants from Greece and Italy (but not for other nationalities), Abbasi-Shavazi and McDonald (2002) find in another study that their fertility levels closely resembled the levels, trends, and age patterns of the respective country of origin. Therefore, they argue for the importance of ‘cultural maintenance’ (Abbasi-Shavazi and McDonald 2002: 70). This formation of a sub-culture is supported by several factors; if, for example, these groups are large and live geographically centered, the communities maintain youth groups and weekend schools in the native language, and they run newspapers.

A non-uniform picture is seen for the still relatively young second immigrant generation in Western European countries. Alders (2000) notes that the fertility levels of women of Turkish and Moroccan parents fall between the levels of their mothers’ generation and that of Dutch women, whereas women from Suriname and the Antilles exhibit lower levels than Dutch women. In Belgium, Schoenmaeckers, Lodewijckx, and Gadeyne (1998) observe differences in fertility patterns of women of Turkish and Moroccan descent, including lower fertility levels for the second generation of both groups compared to the first generation. Turks enter motherhood earlier than Moroccans, but have a preference for a smaller family size than Moroccans. However, differences are observed by educational attainment: immigrant women with a secondary education

have a smaller number of children in both groups (see also Ford 1990 for the U.S., Ng and Nault 1997 for Canada).

2.1.5 Selection and characteristics

Since both international and internal migrants are a selected group, most of the studies that control for country of origin also take the socio-demographic characteristics of migrants and non-migrants into account. They find fertility differentials reduced when controlling for these factors. Therefore, the hypotheses on socialization, adaptation, disruption, and interrelation of events can only be proven when selection effects of immigrants and socio-demographic characteristics of both native-born and migrant population are simultaneously considered.

The selection hypothesis predicts convergence of fertility patterns between immigrants and their counterparts in the host society because migrants are assumed to share the fertility intentions of the persons at destination. Hence, immigrants may not have the fertility intentions dominant in their country of origin, but may instead have intentions similar to those of the receiving country. This selection can result from observed characteristics, such as education triggering migration (c.f. Wagner 1990), or from unobserved factors, such as social-mobility ambitions or family proneness. On the other hand, these two traits can also be seen as opposed to each other, and can have the opposite effect on fertility. Both mechanisms have been observed for international and internal migrants throughout the world, whereby selection effect and adaptive behavior may sometimes be hard to distinguish (Macisco, Bouvier, and Renzi 1969; Macisco, Bouvier, and Weller 1970; Zarate and Unger de Zarate 1975; Hiday 1978; Sabagh and Yim 1980; Bach 1981; Massey 1981; Kahn 1988; Schoorl 1990; Goldstein, White, and Goldstein 1997; Hwang and Saenz 1997; Frank and Heuveline 2005; Kulu 2005).

When the characteristics of the population at destination have been taken into account, a selection effect has been found mainly for migrants to urban areas. Internal migrants in France and in Peru who moved to urban areas are found to be a selected group who tend to favor lower fertility behavior, compared with migrants who moved to rural areas and adjusted their behavior to the higher fertility prevalent there. Reasons for this difference can be seen in the size and cost of locations (Corgeau 1989; White,

Loreno, and Guo 1995). Macisco, Bouvier, and Weller (1970) trace low fertility levels among young migrants in Puerto Rico back to their social-mobility ambitions, which would be hampered by having (additional) children. Myers and Morris (1966) raised the question of whether the low fertility levels of migrants should be interpreted within the context of disruption, or of selection (but they did not distinguish between origins in their study).

Earlier studies on fertility of rural–urban migrants in the U.S., Puerto Rico, and in Latin America had suggested with relatively high consistency that migrants arriving in urban areas have a higher fertility rate than non-migrants in cities. This difference decreases when socio-economic factors can be considered. Migration from rural areas is most often associated with lower levels of education, an inferior occupational situation, and less income — factors that are associated with higher fertility in general (see for a summary: Zarate and Unger de Zarate 1975, Hutchinson 1961 on Brazil, Rundquist and Brown 1989 on Ecuador). For pre-baby boom cohorts in the U.S., it has been argued in several studies that fertility differentials within urban settlements by socio-economic status may vanish in the future, and that differentials between ‘urbanites’ and migrants from rural areas to cities can be explained by the lower socio-economic status, as well as the traditional family values and gender-role patterns of the groups with farming backgrounds (selection) (Goldberg 1959, Duncan 1965). Freedman and Slesinger (1961) find fertility differentials by socio-economic background between rural–urban migrants and urbanites in the U.S., but also point out that the farm population ‘is increasingly subject to urban influences, even when they do not migrate’ (Freedman and Slesinger 1961: 172). Duncan (1965: 249) sees either a two-generational urban experience, or the attainment of higher levels of schooling as triggering ‘modern’ (i.e., lower) fertility patterns.

McGirr and Hirschmann (1979) contradict the ‘urbanites’ hypothesis, and stress that there is no clear link between socio-economic status and region of origin for later birth cohorts. Hence, fertility differentials within cities cannot be explained by the distinction between farm and urbanite backgrounds. Small fertility differentials by socio-economic status may have been the exception for women in urban areas for certain cohorts. They prove the results by Ritchey and Stokes (1972), who find an inverse association between socio-economic status and the number of children ever born

for both non-migrants in urban areas and migrants. Ritchey and Stokes (1972) also stress that both the size of the area of residence and migration have independent effects on fertility. When controlling for the size of the place of residence and of origin, internal migrants in the U.S. have higher fertility than non-migrants.

When we compare the hypothesis of selection to other hypotheses, one may consider the hypothesis of interrelated events (marriage and migration) to be part of the selection hypothesis; however, treating it separately seems more appropriate. This is because the interrelation effect may occur only once, i.e., shortly after migration; but completed fertility levels tend to differ between migrants and the people at destination — not due to adaptive behavior, but due to long-term fertility intentions (selection). The ‘fertility-emancipation’ results by Hwang and Saenz (1997) seem to prove this; women from the People’s Republic of China (where the one-child policies keep fertility low) who migrate to the U.S. have higher fertility rates after arriving in the U.S. than Chinese groups who move from other Asian countries to live in the U.S.

However, the hypotheses of adaptation and selection may be hard to distinguish. Schoorl (1990), for example, shows that immigrant women of Turkish and Moroccan descent who live in the Netherlands have about one child less than stayers in the respective country of origin, but the number of children born prior to the emigration was of a similar level compared to stayers of the respective age group. Schoorl (1990) therefore argues that reduced fertility after migration is caused by an adaptive process at destination (since the average number of children of Dutch women in this study is about half of the Turkish and Moroccan number). However, if a selection effect can be observed only on the completed number of children, one cannot distinguish selection from adaptation in this case. Or, generally speaking, selection may be ‘operating, either at the point of origin or in the fertility adjustment to migration’ (Goldstein 1973: 237).

On the other hand, fertility differentials may be caused by socio-economic differences between migrants of different origins and/or between migrants and people at destination (Jaffe and Cullen 1975, Kahn 1988, Coleman 1994, Kahn 1994, Ng and Nault 1997). The main factors that explain fertility differentials between immigrants and their descendants, and the indigenous population at destination, are not just levels of educational attainment; but also rural/urban origin, the share of female labor-force

participation, and the proportion of married women living with their husbands (Jaffe and Cullen 1975, Rumbaut and Weeks 1986, Stephen and Bean 1994).

One also has to take modernization into account. Subsequent waves of migrants may be different from their predecessors; they may, for example, be less conservative than previous migrants. That is, earlier migrants may have responded to changes in their environment by conforming more closely to older behavior patterns, including higher fertility levels. By contrast, more recent migrants, motivated by improved communication, more education, and higher levels of modernization, may be leaving their old environments in order to achieve new goals, and may therefore be more willing to forego the old in favor of new behavioral patterns, including even lower fertility than non-migrants at place of destination (Goldstein 1973: 235 and 237).

When considering international migrants, many studies do not distinguish between migrant generations. This may not be necessary in contexts where the second generation has not yet reached family-formation ages by the time of the respective study; however, in some contexts they have. Schoorl (1990) categorizes immigrant women of Turkish and Moroccan descent in the Netherlands by type of family reunion. Primary family reunion is defined as a case in which a couple was married prior to the migration, but the spouses moved at different points in time, and therefore experienced a phase of longer spatial separation. Secondary family reunion is defined as the immigration of marriage partners of second-generation immigrants. When using the indicator of the family-reunion type, remarkable differences appear between the two types for both women of Turkish and Moroccan descent: Turkish-origin women of the secondary family-reunion type have a 0.81 smaller number of children ever born than Turks of the primary family-reunion type (controlled for age). For Moroccans, this difference is 0.91. However, these differences are explained by socio-demographic differences between the primary and the secondary reunion types for both immigrant groups: the children of the labor migrants are distinguished from the first immigrant generation by being younger, having a better education, originating more often from urban areas, having a better command of the Dutch language due to their younger ages at immigration, and, coinciding with these factors, also knowing Dutch society better. Moreover, the ties to the respective country of origin may have weakened (Schoorl 1990).

A cross-over is, for example, observed for Mexican-U.S. migrants. Whereas earlier Mexican emigrant cohorts had lower fertility rates than the stayers in Mexico, today the opposite is the case. ‘Migration increasingly may be selecting women with socio-demographic profiles that are conducive to higher fertility patterns, such as women with a lower educational level from more rural and/or marginalized areas that are characterized by higher fertility norms’ (Frank and Heuveline 2005: 97). A comparatively low socio-economic status may also be inherited by second- and third-generation immigrants, which can be interpreted from a racial-stratification perspective: differential opportunity structures channel fertility behavior in a way that younger women who face lower opportunity costs because of their lower socio-economic status engage in early and high fertility (Frank and Heuveline 2005).

2.1.6 Legitimacy

Finally, another hypothesis has been increasingly discussed in recent years: the ‘legitimacy’ hypothesis investigates a causal relationship between international migration, legal status, and demographic events, such as child birth (Bledsoe 2004; Bledsoe, Houle, and Sow 2007; Fleischer 2007). The assumption is that if international migrants aim at gaining nationality by giving birth in a respective country of destination, this would be reflected in relatively high transition rates to a birth soon after arrival. Therefore, migration and childbearing could be special cases of the hypothesis on the interrelation of events.

Though the hypothesis has not received much empirical grounding yet, there is also evidence that persons who originally immigrated for different reasons, such as attending university, may not want to leave the country, and may therefore see childbearing (or marriage) as an option for securing the right to stay in the country of destination (Fleischer 2007). Therefore, we think that births would tend to occur on a mid-term scale only after a migrant has spent a certain time span at destination. Hence, the legitimacy hypothesis must be seen as a separate one.

2.1.7 Minority groups

Up to now, the impact of migration on individuals has been discussed. The emphasis is on the experience of two societal contexts, on the migratory event, and on the related changes in a person's life, or on the lives of her or his children over time. Since descendants of international migrants are not directly affected by the migration process of their parents, especially if they were born after the move, it is worth paying attention to the theoretical framework of fertility behavior of minority groups, too. The minority-group argument has been brought up mainly in the U.S. American context (Goldscheider and Uhlenberg 1969), but was also later applied to the European (Van Heek 1956, Kennedy 1973) and Asian contexts (Poston, Chang and Dan 2006). In the main, studies on fertility behavior of minority groups have been carried out in countries with relatively low fertility levels, and in places where the fertility of women in minority groups exceeds that of the majority (e.g., Goldscheider and Uhlenberg 1969 on different minority groups in the U.S. and in Canada, Sly 1970 on the U.S., Roberts and Lee 1974 on the U.S., Bean and Tienda 1990 on Hispanics in the U.S.).

Minority groups and immigrant groups may overlap or be distinct from each other; or a group of migrants may develop gradually into a minority group over time and generations (Coleman 1994). Bean and Tienda (1990: 210) list four criteria which characterize minority groups. These are:

- Each of the sub-groups constitutes only a small share at the total population of a country,
- Members of the particular group experience a sense of self-awareness as belonging to the group as its members,
- Members of the particular group experience a degree and kind of discrimination by members of the majority group, and
- The members of the particular group are to some extent discernible in their appearance as its members.

The criterion of physical appearance is mainly used in the U.S. debate where it refers to classifications by skin color (race). However, modifications of these criteria are applied to different contexts. Kennedy (1973) emphasizes social cohesion between group members who share religious affiliation in Ireland and Northern Ireland. Poston, Chang, and Dan (2006) use recognition by the government of specific nationalities

(*minzu*) as the criterion for defining minorities in China, where the members of the *minzu* are hardly or not at all distinguishable by physical appearance from the majority population of China (*Han*).

If groups of people can be defined as minority groups, and differences in fertility behavior occur between the minority and the majority groups, four hypotheses are in general posited in order to explain fertility differentials. As in the case of theories on fertility behavior of internal and international migrants, these hypotheses emphasize different factors affecting fertility behavior, including social psychological features (minority-group status), socio-demographic characteristics, as well as economic and cultural factors (Bean and Tienda 1990). The four hypotheses are not exclusive, and do not possess sole explanatory power. They cannot be clearly distinguished from each other, either.

2.1.8 Socio-demographic characteristics and economic arguments

Like the framework on fertility of migrants, the first hypothesis addresses the assumption that minority groups and majority groups are different in their socio-demographic composition. Given fertility differentials between minority and majority populations, these differences are assumed to be caused by the compositional differences between the populations. A convergence in socio-demographic structures between groups may lead to a convergence of fertility behavior, as well. This mainly refers to (higher) education, occupation, and income; but also to age structure, marital status, and other factors (Bean and Marcum 1978, Bean and Tienda 1990).

Evidence for this hypothesis is found in nearly all studies: ‘Clearly the *social characteristics* approach is correct in its prediction that differences in characteristics will account for a large part, if not all, of the fertility differences’ between Hispanic women of the first, second, and third generations in the U.S., and U.S. American women (Bean and Tienda 1990: 230/231; also: Goldscheider and Uhlenberg 1969; Sly 1970; Roberts and Lee 1974; Poston, Chang, and Dan 2006).

Related to the hypothesis of structural similarities, the economic hypothesis is rooted in the economics of the family (Becker 1981) that regards fertility as the result of household decisions about the allocation of scarce resources (mainly time and money)

for the acquisition of commodities (such as children). Several authors discuss the economic hypothesis as a separate hypothesis in the context of fertility of minority groups. But, since the general line of argumentation applies also to the majority population, it can hardly explain differences between minority and majority as such. One reason for seeing it as a separate theory is the magnitude of difference: group differences are the greatest where the potential earning differences are the greatest. Thus, if minority women with higher levels of education are able to achieve similar levels of earnings compared with majority women of levels of higher education, their fertility will be similar as well (Bean and Tienda 1990: 214). In this respect, this hypothesis is similar to the hypothesis of socio-demographic characteristics.

Even though compositional differences and economic arguments explain a large part of the fertility differences between minority groups and majority population, they cannot account for all the differences (Goldscheider and Uhlenberg 1969; Massey 1981; Bean and Tienda 1990; Poston, Chang, and Dan 2006). Furthermore, when controlling for social characteristics, different minority groups in the same country show different fertility behavior. Goldscheider and Uhlenberg (1969) find fertility rates higher among Catholics in the U.S. than among the white majority (Protestant) population, but lower fertility levels for Jewish, black, and Japanese Americans living in Canada or the U.S. Bean and Tienda (1990), for example, estimate higher fertility levels for Mexican-origin women in the U.S., but lower fertility for women of Cuban, Puerto Rican, and Central/South American origin, compared to white American women.

Therefore, the literature offers two ‘residual’ hypotheses.

2.1.9 Independence-effect: Sub-culture and minority status

The two residual explanations can also be seen as opposite outcomes of the same factor. This effect is called independence effect; its two aspects are the sub-culture hypothesis⁸ and the minority-status hypothesis.

⁸ In general, demographic studies have increasingly focused on the role of culture in order to explain certain demographic differentials between (sub-)populations that show similar socio-economic characteristics (Hammel 1990, Bernardi and Hutter 2007).

The sub-culture hypothesis has been derived from the fact that many of the minority groups residing in the United States originate from countries that have a tradition of higher fertility, such as Mexico, than that of the U.S. According to this theory, members of an immigrant-origin sub-group may preserve values, norms, and behavior concerning family and fertility that are common in the respective countries of origin (familism). Therefore, fertility levels may be higher among women of minority groups than among women of the majority population, even when taking social characteristics into account (Bean and Tienda 1990).

The main indicator for any kind of sub-culture used in previous studies is religious affiliation. It seems, however, that religion has hardly any impact on fertility behavior in general, and neither has a consistent influence within one minority group, nor on different minority groups (Massey 1981, Bean and Tienda 1990); or its impact depends on the context (Kennedy 1973). Kennedy (1973) examines the fertility of Catholics and non-Catholics both in Ireland and in Northern Ireland, and finds higher levels for Catholics living in Northern Ireland than those living in Ireland. Kennedy concludes that ‘under certain conditions minority groups status may affect fertility, but it is relatively less important than other fertility determinants such as religion, rural residence, or selective migration’ (Kennedy 1973: 90). The conditions under which a pro-natalist effect works are that the minority group is relatively large, that the minority group members believe that they can increase their political influence by increasing the number of the sub-population, that the group members are economically disadvantaged, and that there is strong social cohesion between the group members (Kennedy 1973). In the Netherlands, Van Heek (1956) traces the higher-than-average fertility among Catholics back to a history of discrimination against this minority faith.

Goldscheider and Uhlenberg (1969) find fertility rates higher among Catholics in the U.S. than among the white Protestant population (majority), but lower fertility levels for Jewish, black, and Japanese Americans living in Canada or the U.S. They suggest for the Catholic pattern that ‘specific norms regarding family size and birth control must be considered. Obviously, identification with a minority group characterized by a large family-size norm and ideological prohibitions against efficient contraceptive methods raises rather than lowers fertility’ (Goldscheider and Uhlenberg 1969: 371; see also Burch 1966 for Catholics in North America).

Massey (1981), summarizing research findings on fertility of immigrant groups to the U.S. that have a familistic background (such as Japanese, Chinese, Mexicans), writes that the relatively high Mexican-American fertility is rooted in an interaction between social class and cultural factors.

The findings 'indicate that while traditional families do decline with time in the United States, immigrant families nonetheless retain many traditional components. At any point in time, immigrant families therefore tend to represent a composite of two cultural systems, with the mix depending on the length of time the group has been in the United States and social class' (Massey 1981: 64/65).

Special fertility policies applying to minority groups have also been seen as indicator for the sub-culture hypothesis, as is the case for minorities in China (Poston, Chang and Dan 2006): After adopting the one-child policy in 1979, China issued a series of province-specific stipulations that grant most of the minority groups an exemption from the one-child policy. The authors see the differential application of the fertility policies as having the major influence on the fertility differentials between minorities and the majority in China. Poston, Chang and Dan (2006) attribute this to the sub-culture hypothesis.

The second aspect of the independence hypothesis is a fertility depressing effect that is, in general, traced back to the minority-group status *per se*. This approach centers on psychological aspects.

As one of the traits that define a minority group is the experience of discrimination, discrimination may lead to 'feelings of frustration and marginality' (Bean and Tienda 1990: 213). The minority-group argument comes into play mainly if minority-group women of a certain educational level do not exhibit fertility levels that are similar to majority-group women of comparable education. This can be seen as discrimination resulting from minority status. Due to economic considerations, several authors see the frustration argument especially applying to women of higher education and higher socio-economic status in a minority group. It is argued that better-educated women aspire more to upward mobility than less-educated women, and upward mobility is harder to achieve among minority-group members than it is for people belonging to the majority. Hence, women who have achieved a relatively elevated

socio-economic position may be less likely to risk a decline in their life conditions by having a relatively high number of children, and therefore reduce their fertility below the levels of women of a comparative socio-economic position in the majority population (Goldscheider and Uhlenberg 1969, Bean and Tienda 1990). Evidence is found in lower recent fertility levels among highly educated women who were born in Mexico, Puerto Rico, and Central/South America and live in the U.S. Bean and Tienda (1990: 232) interpret this as follows: ‘This finding casts doubt on the idea that the sub-cultural hypothesis provides a general explanation of higher Spanish origin fertility, because it implies that these women reduce their fertility as childbearing costs increase, perhaps even disproportionately so, as the minority group status approach would predict.’

Although the minority-status argument has been mainly raised for women of higher socio-economic status, it may be possible to extend this concept to other women: in circumstances where subjective discrimination leads to a general feeling of uncertainty and frustration, fertility disruption may be the consequence, regardless of the relative socio-economic position of a woman.

Whereas the influence of the membership in a minority group on fertility is indirect in nature, resulting from discrimination and economic uncertainty, there may also be a direct influence on fertility (Siegel 1970; Kennedy 1973; Poston, Chang and Dan 2006). This influence is seen as pro-natalist due to the relatively small size of the minority group or to special societal conditions, such as policies. In general it seems, however, that a pro-natalist influence of the minority-group status can hardly be distinguished from the sub-culture hypothesis (Bean and Tienda 1990) since a minority group needs a vehicle in order to transport norms and values, such as a religious institution (Goldscheider and Uhlenberg 1969). Kennedy (1973) emphasizes the argument of social cohesion between the group members and a coherent sub-culture (c.f. Petersen 1964).

‘Few minority couples, of course, would have children solely to increase the size of their group. The argument runs the other way: such minority couples would be less likely to plan rationally to have small families ... Occupational or income discrimination against a particular minority group would reduce the importance of social mobility as an antinatalist force for that group, and also lead to some couples being more likely to “let nature take its course” ’ (Kennedy 1973: 86).

Roberts and Lee (1974) also suggest an independent effect of minority-group status, as found in the U.S., resulting in higher fertility among minorities than among the white population. They see that:

‘... the important distinction is not so much the differences between structural and cultural factors (although such differences may indeed be important), but rather the influence of their interaction. That is, the important question becomes how the interaction of structural factors (such as occupation, income, and education) and cultural factors (norms, values, beliefs, and life styles) operates to affect fertility behavior in different ethnic populations’ (Roberts and Lee 1974: 521/2).

Similarly, Ritchey (1975: 257) stresses the importance of including not only individual characteristics in the analyses, but also their relative meaning in the context, i.e., the extent of structural assimilation of the respective minority group in a population. He uses an indicator for ‘racial inequality of an area’ for black–white fertility differentials in the U.S., and finds that ‘... the attribute of being black — and therefore, of minority groups status — gains significance as an independent influence on fertility behavior to the extent that the social milieu maintains social distance and discriminates on the basis of this attribute.’

Sly 1970 also refers to the degree of assimilation of certain minority groups as an important factor for the influence of an independent minority-status effect: whereas compositional differences explain fertility differentials between blacks and whites in the U.S. when the South is excluded from the analysis, an independent minority-group effect can be observed on blacks in the South (where social characteristics do not account for fertility differentials). He concludes that the minority hypothesis must be reformulated to minorities ‘which have been institutionally assimilated’ (Sly 1970: 458).

Moreover, the fertility of minority groups ‘must be considered within a dynamic framework of socio-cultural change’ since ‘these minority groups have experienced social and cultural changes of various velocities at different points in their American history’ (Goldscheider and Uhlenberg 1969: 370). Within this dynamic context of culture, social relations, and economic conditions, ‘achievement values must be present for minority group members to translate the “goals” of social mobility and concomitant acculturation for themselves and their children into “means” which include family-size

limitation' (Goldscheider and Uhlenberg 1969: 371). Analyzing Hispanic and black fertility in the U.S., Forste and Tienda (1996) suggest that additional factors be considered, including meanings, conditions, and consequences of early childbearing; the sequencing of fertility and marriage; as well as perceptions about the relative position of an individual in a group.

2.1.10 Synthesis: Theories

Existing studies on fertility of minority groups suffer from three major shortcomings.

First, the definition of a minority group depends on rather vague criteria. Roberts and Lee (1974: 505) point out that '... the most important concept is minority group status, and yet the definition and measurement of this concept represent the weakest aspect of both papers' (here: referring to Goldscheider and Uhlenberg 1969, Sly 1970). These two studies use a 'variety of definitions that are sometimes based on color, sometimes on religion, sometimes on national origin' (Roberts and Lee 1974: 505). Yet results strongly depend on the definition of the analyzed groups. Roberts and Lee (1974) demonstrate this by using three types of categorization in order to distinguish between majority and minority populations in the U.S., with the minorities categorized as non-white, minority, or Spanish surname/other white/black.

Second, the time-dynamic aspect of minority behavior is only exceptionally taken into account (Bean and Tienda 1990). Roberts and Lee (1974: 504) suggest that a 'discussion of the assimilation of minority groups is perhaps more properly viewed in terms of generational differences' since the literature on assimilation of minority groups assumes that 'succeeding generations will be more assimilated than preceding generations.' Even when generational differences do not follow a straightforward and continuous trend as suggested by Gordon (1964), segmented-assimilation theory as proposed by Portes and Zhou (1993) leaves the possibility for generational differences, too. Therefore, '... a research hypothesis which relates the direction of fertility changes to acculturation is one that ideally requires cohort data for its empirical verification' (Ryder, Hauser, and Grabill 1971).

Third, as main theoretical weaknesses have been identified:

‘(1) a failure to specify theoretically the mechanisms that link the group’s relative or absolute economic status to fertility via proximate fertility behaviors, such as marriage, sexual activity, and contraceptive behavior; (2) a failure to explicate the conditions under which minority group status depresses fertility as opposed to resulting in higher fertility; and (3) a failure to differentiate theoretically the cultural hypothesis from the minority group status hypothesis, which makes a definitive empirical test of either virtually impossible’ (Forste and Tienda 1996: 111/112).

We think that the minority-status effect cannot be seen separately from the sub-culture hypothesis. One can neither distinguish between the direction of the effects (in general, minority status leads to lower fertility, but is also used in order to explain the opposite), nor can minority status and culture be separated from each other. We argue that the definition of a minority as a group of individuals whose members share certain characteristics and experiences implies that there needs to be social interaction between the members in order to constitute a group behavior. Several authors emphasize the importance of social cohesion (Kennedy 1973) or a meaning-giving framework (Goldscheider and Uhlenberg 1969). Therefore, the sub-culture and the minority-status hypothesis should be treated as one factor that can lead to different outcomes, either higher or lower fertility of minorities compared to the majority population.

Besides the weaknesses, the most important question for our study is, however, what the framework of fertility of minority groups could contribute to the framework of fertility of international migrants. This is of importance since not many studies within the framework of international migrants distinguish between migrant generations. This may not be necessary in contexts where the second generation has not yet reached family-formation ages; second generations have, however, reached these ages in some contexts, as in Germany, and future research should, therefore, pay particular attention to these groups.

Comparing the theoretical frameworks of migrants and minority-group members, the similarities are (not surprisingly) striking; nevertheless, three differences do occur.

Adaptation

The migration framework centers on first-generation migrants and provides the hypothesis that first-generation immigrants adapt to the behavior of the region of destination as the length of stay increases. Using the framework on minorities, this hypothesis can be extended to the second migrant generation.

Socialization and sub-culture

In contrast to the adaptation hypothesis, the migration framework emphasizes a dominant influence of the socialization context on attitudes and behavior, even at later ages. Thus, first-generation immigrants may preserve fertility behavior that is different from that of the region of destination. Second-generation immigrants may, however, be mainly influenced by the region of destination (e.g., the institutional framework during childhood and adolescence), and may therefore show similarities to people at destination, but differences when compared to the first generation.

Similarly, the minority framework provides the idea of a sub-culture that pertains to a minority group and provides a context for fertility behavior that is different from that of the majority population. Therefore, fertility differentials may continue to exist for both the first immigrant generation and subsequent generations.

When comparing the socialization and the sub-culture hypotheses, there appears to be a difference in the predicted outcomes for the second generation. Whereas second-generation migrants are expected to show differences compared to the first generation, second-generation people in minority groups are hypothesized to share similarities with the first generation. Since descendants of migrants may be socialized into a sub-culture of their parents' origin or into mainstream society or into both, the type of socialization may thus be a reason for fertility behavior and differentials. Moreover, we should note that is difficult to distinguish clearly between fertility behavior as caused by socialization at destination and adaptive processes because both hypotheses predict similar fertility levels of persons at destination and second-generation migrants.

Disruption

The disruption hypothesis as suggested by the migration framework applies to first-generation immigrants only because it emphasizes the move itself as being stressful for a person or/and a family. However, a similar hypothesis can be found in the minority framework. The independence hypothesis takes into account the effect of negative emotions and experiences, such as discrimination, uncertainty, and frustration; and assumes a fertility-diminishing effect as a result. When the realized number of children is smaller than the actual fertility preferences of a person or group due to these negative experiences, this can be seen as fertility disruption, too. This applies to the first and subsequent immigrant generations.

Composition of sub-groups

Both theories, on migrants as well as on minority groups, emphasize that the socio-demographic composition of sub-groups may differ from that of the majority population. These compositional differences explain a considerable number of fertility differentials between the population segments. As compositional differences are diminished, fertility differentials may diminish as well. This is true for the first and the second generations, both of migrants and of minority-group members.

Interrelation of events and legitimacy

Both the hypothesis of an interrelation of events and legitimacy require a move. They do not find parallels in the minority framework.

2.2 Family-formation context in the countries of origin

The chapter continues with the contextualization of the study populations. The countries of origin of the international migrants (Turkey, the former Yugoslavia, Greece, Italy, and Spain), as well as the receiving society of West Germany, have all experienced large demographic changes since the end of the 1950s, albeit at different speeds and with varying effects. A common feature of these developments is a substantial decline in fertility (Coale and Treadway 1986). This part of the chapter describes similarities and differences in family formation behaviors, and draws on the framework of family types.

Reher (1998) stresses the concept of path dependency, which posits that when the same influence (of modernization) meets different historical, cultural, geographical, or social realities, the outcome will be different for each context. In Western Europe, Reher (2004) identifies two basic family types: strong family ties in the Mediterranean area, and weak ties in Northern and Western Europe, including Germany and Austria, as well as the U.S. The author uses mainly the age at leaving the parental home and the kind of support provided for the most vulnerable members of the society as indicators in assigning a family type to a region. As an explanation for this dichotomy in European family types, Reher (2004) notes that, in the past, young adults in Great Britain, Denmark, and Holland left the parental home in order to work as servants, whereas the number of servants was relatively low in Spain, Portugal, Italy, and Greece. A consequence of the late departure from the parental home is a higher age at marriage.

Another trait of strong families is social control, which is more effective in strong families than it is in weak families. Consequently, the marriage indicators are similar in the respective countries belonging to a certain type of family regime. The share of extramarital births is, for example, low in areas with strong family ties, compared to those with weak family ties. Mediterranean and German patterns differ greatly. Germany seems to follow the Northern European trends. Among the family formation behaviors observed in Germany are delayed marriage, a rapid growth in the share of non-marital cohabitations, and an increase in the share of extramarital births (van de Kaa 2001, Reher 2004).

2.2.1 Italy and Spain

Italy and Spain belong to the group with strong family ties (Reher 2004). Although over replacement level, neither country has had very high fertility levels, and the onset of the substantial fertility decline that occurred in Western Europe in the past half-century was delayed there. In the mid-1960s, the TFR was 2.5 to 3.0 in Italy and Spain; this compares to a TFR of 2.1 to 2.5 in West Germany before 1970. The decline in Italian and Spanish fertility began slowly at the end of the 1960s, and accelerated in the late 1970s. By the end of the 1980s, the TFR in Italy seemed to level off at 1.3; the TFR in Spain, at 1.4 (c.f. Delgado Perez and Livi-Bacci 1992).

Italy and Spain share four features in regional fertility development: (1) The relative decline in fertility was consistent. (2) Large fertility differentials occur between the regions; in 1989, there was a one-child difference between the regions with the highest and the lowest fertility levels. Large fertility differences by region have historical roots in pre-industrial times. Neolocal households were common in southern Italy, whereas complex, patrilocal household structures dominated in the northern part of the country. (3) Today in both countries, a 'one-child league' can be observed: more than ten million Italians lived in regions with a TFR of 1.0 or less in 1989, as did three million people in Spain. (4) A large contribution to the decline in fertility comes from the changes in marriage behavior (Delgado Perez and Livi-Bacci 1992, Viazzo 2003).

While the age at marriage declined in Western Europe in the decades following the Second World War, a reversal of the trend started in the 1970s, though slightly later in the Mediterranean regions than in Central Europe. The age at first marriage increased between 1970 and 1989 by one year, to 25.1 in Italy and 24.6 in Spain (West Germany: 25.5). Not only did there appear to be a trend towards postponing a first marriage; the overall rates of first marriages declined as well. The share of unmarried women aged 25 to 29 rose from 23 to 36 percent in Italy between 1980 and 1989; and, in Spain, from 22 to 30 percent over the same time period (Delgado Perez and Livi-Bacci 1992).

Both countries share the strong connection between marriage and fertility. Despite the changes in marriage behavior and a slight increase in the proportion of

children born out of wedlock, the latter rates remained at a relatively low level: six percent for Italy and eight percent for Spain (Delgado Perez and Livi-Bacci 1992).

Several authors trace this development back to an increasing number of single persons who continue to live in their parents' household (Delgado Perez and Livi-Bacci 1992, Reher 2004, Rosina 2004). The amount of time that children depend on the economic support of their families and when they cannot afford an own household has been prolonged due to increasing education, a delayed entry into the labor market, and a relatively high unemployment rate, especially among young women and men (Delgado Perez and Livi-Bacci 1992). Rosina (2004) writes that the scarcity of resources leads to a high quality investment into a smaller number of children. At the same time, a substantial lack of state support for crucial life events supports this development. In Spain, for example, grandmothers help their daughters care for the daughter's child by living in the same household (Reher 2004).

Dalla Zuanna (2004) also mentions the low rates of non-marital cohabitation and of divorce as traits of the Italian family type. He sees Italian familism as a consequence of policies and poverty. Against a difficult economic background, the family is seen as a golden cage in which its members — parents as well as children — benefit from an intense emotional and material exchange. Because of this golden cage, young adults develop a delay syndrome (c.f. Rosina and Fraboni 2004). Dalla Zuanna (2004) attributes this delay syndrome to the failure to develop a taste for responsibility and for making choices. He draws the connection between postponement of adult independence and the decline in fertility rates in Italy as follows (Dalla Zuanna 2004): fertility has declined because employment and motherhood are hard to combine, having children and consumption are in competition, and the value of a child is very high (and therefore demands a high investment). Since young women do not want to fail, they do not get married in growing numbers, and therefore remain childless. Also, they have fewer higher-parity children. The share of women remaining childless at the end of their reproductive lifespan in the central and northern regions of Italy has been approaching 25 percent. Golini (1999: 250) sees 'in the longer term the only-child model as typical reproductive behaviour.'

2.2.2 Turkey

Reher (2004) places the strong family ties observed in the Mediterranean area between the weak ties typical of Northern and Western Europe, and the pattern of allegiances that characterize oriental and Asian regions. Similarities between the Mediterranean regions, the Balkan countries, and Turkey have historical roots. Reher (1998) cites the historical pattern among peasant families of preferring family labor to non-family labor as one of the traits common to Mediterranean cultures. At the same time, instability among families coincides with a higher degree of non-family labor. He stresses also the Muslim influence, which reached Southern Europe a few centuries ago. An overriding importance of kin alliance, especially in marriage traditions, is central to the Muslim concept of family.

Of the countries included in this study, Turkey has experienced the biggest demographic changes over the past five decades. As a country of population heterogeneity, multiplicity of cultural influences, geographic and ecological variation, and rapidly ongoing social and economic transformation, Turkey underwent three stages of demographic transition since its foundation in 1923. Previously a traditional, rural, agricultural, and patriarchal society, Turkey is becoming increasingly modern, urban, industrial, and egalitarian (Sunar and Fisek 2005). Until about 1950, death rates declined steadily, while average fertility increased to almost seven children per woman. As a result, the population of Turkey almost doubled to 24 million. In this first transition phase, high fertility was considered necessary both by the civil society (families) and the state, mainly in order to overcome labor shortages, particularly in agriculture. The second stage of demographic transition, starting in 1955 and lasting until 1985, is characterized by a steady decline in fertility. Nevertheless, the population doubled to 51 million in 1985. This phase is also marked by a rapid urbanization process: whereas the proportion of the population that lived in urban areas was about 23 percent in 1955, this share was about 51 percent 30 years later (SIS 1996).

‘Urbanization and the fertility decline were mutually reinforcing processes. As young adults moved from rural areas to urban areas they chose lower rates of reproduction. In fact, part of the motivation for moving was to lead family lives less oriented to large families and more oriented to the economic, educational, and consumption opportunities of the cities. The economic transformation that was in progress at the same time reduced the emphasis on family

employment and increased the importance of qualifying for jobs in an urban industrial labor market. Increases in standard of living with more emphasis on bringing up healthy and educated children were also a factor. The motivation to have many children decreased, and families successfully looked for ways to regulate their fertility' (SIS 1996: 5).

In the midst of the second transition phase, the TFR was about five children (1970 to 1975); while at the end of this phase, in the mid-1980s, it was about 1.5 lower (Shorter and Macura 1982, SIS 1996). However, fertility levels vary greatly by region. The 67 administrative provinces can be clustered into three types. Women living in the region of Istanbul-Izmir had the lowest TFR at the end of the 1960s, at around three births per woman. A mid-level TFR was observed in the urban areas in the country, where about 4.7 children per women were born. Rural areas had the highest TFR, with levels close to seven. Although internal migrants moving from rural areas to cities caused small increases in the fertility levels of the urban areas, big fertility differences between these three settlement types remained (Shorter and Macura 1982, CoE 1982, SIS 1996,).

Increasing urbanization was accompanied by increasing education of women and changes in marriage patterns. The age at first marriage increased (median: 18.8 in 1955, 20.2 in 1970), while the universality of marriage remained. The postponement of first marriage accounts for about one-fifth of the decline in fertility during the period before 1975. The number of children a woman has ever born varies not only by region, but also by education: from 4.3 for illiterates in villages, to 1.9 for women with secondary schooling (eight years of schooling) in the three biggest cities at the end of the 1960s. Around 80 percent of the decrease in fertility is traced back to declining marital fertility, probably due to contraception (Shorter and Macura 1982, SIS 1996, Hancioglu 1997).

The main trait of the third stage of Turkey's transition is an irreversible decline in the rate of population growth, beginning in the 1980s (SIS 1996). The TFR decreased steadily to 2.7 at the beginning of the 1990s, and to 2.2 at the beginning of the 21st century. The median age at first childbearing has risen continuously, to almost 23 years among the youngest marriage cohorts in 2003 (Toros 1994, Koc and Özdemir 2004).

While the education of women continued to increase (only 14 percent of women aged 20 to 29 left school without any degree in 2003), fertility differentials remained, or

even widened, depending upon the educational attainment of the women; the TFR of women with no education or school degree was 4.2 in 1993, whereas the TFR of women with secondary or higher education was 1.7. Childbearing affects female labor-force participation. About 60 percent of mothers are non-employed, whereas this share is about 47 percent among childless women (Toros 1994, Hancioglu and Ergöçmen 2004).

Although the rural–urban gap in fertility levels seems to be narrowing, regional differences remain. Educational levels and employment rates among women are lower in the eastern regions of the country, but fertility levels are higher there compared to other regions (Toros 1994, Hancioglu and Ergöçmen 2004, Koc and Özdemir 2004).

‘By 1993, the West region’s TFR was below replacement level of 2.1 births per women. The East region’s TFR is the highest; however, it fell by almost one-half between 1960 and 1993, and appears to be declining rapidly at present. This is all the more remarkable, since it is the high fertility members of households who stay at home in the east and form new families in the east, while lower fertility members settle in the west or other regions. From the standpoint of the national trend, the weight of the high fertility areas is declining due to out-migration and the weight of low fertility areas is rising due to in-migration. Thus, the national decline of fertility is reinforced by a process of selective internal migration and population redistribution’ (SIS 1996: 28).

In addition, fertility differentials reflect the ethnic diversity of Turkey. The population of the Republic consists of 51 ethnic groups, with Turkish (90 percent of the total population) and Kurdish (nine percent) being the largest. The fertility rates of women of these two groups differ by almost three children: the TFR of Turks was 2.7 at the end of the 20th century, compared with 6.2 among Kurds (Koc and Hancioglu 1999). However, despite these variations in total fertility between the ethnic groups, the first-child patterns tend to be very similar, and are almost independent of socio-demographic characteristics.

By contrast, socio-economic characteristics play a role in parity progression. Analyzing the transition to a third birth, Yavuz (2006) finds the lowest transition rate from a second to a third child for Turkish women who were employed and covered by social security before their first marriage. The highest third-birth risk is calculated for Kurdish women who could not read and who did not work with social security coverage. Marriage characteristics, such as payment of a dowry, family type, and marriage arrangement, play a different role for the third-birth fertility of the ethnic groups.

Among Turkish-speaking women, the decline in third-birth risks has taken place at a relatively similar pace among both those who married in a traditional manner, or in more modern ways. In contrast, a correlation between customary marriage behavior and high fertility has persisted among Kurdish women. These results stress the importance of path dependency of fertility. Ethnic groups are not affected in the same way, or at the same time, by processes of modernization and urbanization. Therefore, these ethnic groups show differences in fertility behavior as well (Yavuz 2006).

Whereas the Turkish population has experienced a relatively rapid development towards so-called Western or modern patterns in certain parts of life, such as education and economic development, other areas of social life have remained more traditional. Up to today, a patriarchal family structure is in general supported, for example, by Islamic teaching. Close relationships between family members are highly desirable, and a marriage is seen less as a decision between two individuals, but rather as a property exchange and communication between two families. Accordingly, an extended family household consisting of three generations is seen as a cultural ideal. Most of the households might be of a nuclear structure today, but are, in fact, functionally extended, with close contact between relatives (Sunar and Fisek 2005).

‘Turkey harbours elements of Eastern and Western cultural features in its social fabric. The Turkish family is a microcosm of the heterogeneity that characterizes this society, so that there are a number of Turkish family prototypes. While it may be safely stated that overall its features are still largely traditional, at the same time highly modern or Western features coexist with the traditional. It seems that a gradually emerging synthesis will combine those traditional practices to which the populace is strongly wedded (e.g., high interconnectedness) with new patterns that fulfil the demands of a changing world (e.g., more individual autonomy)’ (Sunar and Fisek 2005: 180).

Marriage behavior is one of the more traditional elements. Only about two percent of all Turkish women never marry. Almost all births occur within a marriage (Ergöçmen and Eryurt 2004). Yavuz (2008: 259) finds that ‘the two consecutive steps of family formation, marriage and first child, are very strongly connected events for all women in Turkey,’ and that ‘despite the intense macro level economic and social changes of the last two decades, these patterns seem to be quite stable.’ For the majority of women in Turkey, the first child is born after two years of marriage almost

independently of socio-demographic characteristics. In fact, marriage and the birth of at least one child are strongly inscribed in social norms in Turkey, and voluntary childlessness is an exception (Ergöçmen and Eryurt 2004, Yavuz 2008).

Kagitcibasi (1982: 176) sees the perceived value of children as 'the missing link, at the individual level, between two socially observed phenomena — development and fertility decline.' Ataca, Kagitcibasi, and Diri (2005) find that:

'... deviations from traditional values reflect adaptations to new life styles and changing environmental conditions. Changes brought about by socioeconomic development, such as compulsory education and nonagricultural urban living conditions, decrease the material contributions and increase the material costs of children to their parents. Sons no longer satisfy the needs of material support and old-age security. Under these conditions, children's non-economic value becomes more important for their parents. Hence, social change influences the way children are perceived and the values attributed to them by their parents' (Ataca, Kagitcibasi, and Diri 2005: 104/105).

2.2.3 Former Yugoslavia

The former Socialist Federal Republic of Yugoslavia, as it existed from 1945 to 1991, was a country of demographic, ethnic, and religious heterogeneity that resulted from large and diverse migration flows and a diverse history. The country was, for example, shaped by Turkey and the Ottoman Empire with its Muslim influence, by the Habsburg Monarchy with its Catholic influence, and Greece with its Orthodox religious practices (CoE 1990, Mrdjen 1997). Until the end of the 1980s, the country experienced a slight growth in population that varied regionally from 0.1 percent per year in the province of Voivodina, to 2.1 percent in the province of Kosovo (CoE 1990). The Croatian War of Independence (Homeland War) from 1991 to 1995 led to a 'deterioration' of the demographic situation, as well as of economic living conditions in Croatia (Mrden and Mladen 1998).

The development of the fertility figures followed a downward trend that parallels that in other European countries. The TFR fell from 2.1 in 1980 to 2.0 in 1988. The fertility rates showed significant regional variation: period fertility was about 20 percent below replacement level in Slovenia, Voivodina, Serbia proper, Croatia, Bosnia, and

Herzegovina; and at around replacement levels in Montenegro and Macedonia. Kosovo exhibited by far the highest fertility levels, with 4.0 at the end of the 1980s (Breznik 1980, CoE 1990, Nejasmic 1996). Differential fertility by ethnic group can be traced back mainly to economic and social factors. Other determinants that cause fertility differences between ethnic groups are socio-cultural factors, such as traditions, customs, marriage age, religion, and family planning; as well as elements that constitute an ethnic group (Breznik and Raduski 1993).

Childbearing and marriage are strongly interrelated in Yugoslavia, as well. The mean age at marriage declined until the beginning of the 1970s. Since then, it has steadily increased, largely as a consequence of the war in the 1990s. Women married for the first time, on average, at age 22 in the 1970s, at age 23 in 1990, and at age 24 in 1995 (CoE 1990, Mrden and Mladen 1998). The total first marriage rate for women was 815 per 1,000 women under age 50 (CoE 1990). The rate of extramarital births increased from four to ten percent in 1989; more in line with the rates of Mediterranean countries than those of Central European or Balkan countries (CoE 1990, Nejasmic 1996).

Botev (1994) sees three cultural traditions present in the former Yugoslavia that continue to restrict social interactions, thus influencing marriage behavior: Western traditions among Slovenes and Croats (mainly Catholics); endemic Balkan cultural traditions among Serbs, Montenegrins, and Macedonians (in the main Orthodox); and a Middle Eastern cultural tradition among most of the Muslim population. Ethnic homogamy remained the norm until the end of the 1980s⁹, and the marriage patterns roughly followed three cultural patterns. The European pattern, as seen in Slovenia, was characterized by late marriage and a high percentage of people remaining unmarried (in Slovenia in 1962, the mean age at first marriage of women was 24.3 years, and 17 percent of women under age 50 were not married). The Mediterranean pattern, which is characterized by early marriage of women and late marriage of men, was prevalent in Montenegro and Kosovo (mean age at first marriage was 28 years for men and 22 years

⁹ Mrdjen 1997 gives shares of inter-ethnic marriages of 8.6 percent in 1950 and 13.5 percent in 1990, though there is a large geographical variation. Whereas Slovenes, Croates, and Serbes have higher intermarriage rates, intermarriage is hardly observed among people of Albanian, Macedonic, and Muslim belonging.

for women). Meanwhile, the traditional pattern of nearly universal early marriage dominated in the rest of the former Yugoslavia, where mean ages at first marriage were between 24.5 and 25.5 years for men, and between 21.5 and 22 years for women. The share of never-married persons varied between 1.5 and six percent (Botev 1994).

2.3.4 Greece

In terms of family relationships, Greece appears to share more similarities with countries characterized by strong family ties, such as Italy and Spain, than with the other Balkan countries (Botev 1990, Hionidou 1995, Georgas *et al.* 2005).

Birth rates in Greece have fallen since 1950, when the TFR was 2.5. Since 1981, the fertility rate has been below replacement level (1.5 in 1988). Rural–urban differences in fertility have been large, amounting to about one additional child in rural areas throughout the 1950s and 1960s. At the same time, the number of first-order births also sank, while births of third or higher order continued to decline. The age of first-time motherhood increased gradually in the 1980s, from 23.3 years at the beginning of the decade to 24.2 years in 1988. The increasing age at first-time motherhood in the 1980s can be traced back to an increase in the age at marriage. Whereas the mean age at marriage among Greek women was 22.3 years in the 1970s, the mean age had risen by almost one year (23.2) by 1988 (CoE 1981, CoE 1982, CoE 1990).

While the Balkan countries of Bulgaria, Romania, and former Yugoslavia ‘provide the most striking example of early and universal marriage in Europe,’ Greece appears to be the exception in the region (Botev 1990: 108). The high percentages of people postponing first marriage or remaining single that are typical of Western European countries have not yet been reached in Greece, but marriage occurs significantly later in Greece than in the other Balkan countries, and the share of celibacy is higher. In 1971, almost 26 percent of women aged 25 to 29 were unmarried, as were 7.2 percent of all women under age 50. The mean age at first marriage was more than two years higher than it was in other Balkan countries in the 1970s.

As in Italy and Spain, the share of non-marital births has been very low in Greece, although it increased slightly in the 1980s, to 2.1 percent in 1988 (CoE 1982, CoE 1990). Marriage also supports women’s withdrawal from the labor force, whereas

women's employment and the transition to family formation are negatively associated (Symeonidou 1999).

2.3.5 Intermediate conclusion

Despite differences in the pace and levels of fertility changes, the most striking similarity between these five countries is the strong association between marriage and childbearing throughout the decades. Differences occur, however. Turkey is the country where childlessness remains rare despite the overall decline in fertility (Hancioglu 1997). It is also the country where marriage remains nearly universal, and the age at first marriage in Turkey is low compared to ages seen in the former Yugoslavia (on average), Greece, Italy, and Spain.

By contrast, a substantial decline in fertility occurred in West Germany earlier than in these five countries. The period TFR fell below 2 in 1970, and had declined to less than 1.4 by 1989. The mean age at marriage rose from the lowest age in the post-war period (22.7 years in 1975) to 25.5 in 1989. Accordingly, the mean age at first birth increased to 26.7 years in 1989 (Delgado Perez and Livi-Bacci 1992). While marriage is the most important partnership type for childbearing in West Germany, the share of non-marital births is about 16 percent, higher than in Southern and Southeastern European countries. At about 20 percent, the share of childlessness is higher in West Germany than it has been in the Mediterranean areas on average (Roloff 1997, Kreyenfeld 2001a). Chapter 2.4 gives more information on the factors that influence fertility of West Germans and immigrant women in West Germany.

2.3 Socio-demographic characteristics of ‘guest workers’ and their descendants in Germany

The foreign population in Germany differs in its socio-demographic structure from the indigenous population. This part of the chapter provides an overview of the migrant-worker groups of Turkish, Yugoslavian, Greek, Italian, and Spanish origins — the groups our study focuses on. If information is available, the immigrant generations are distinguished in order to illustrate the differences in the composition of the sub-populations. This comparison is related to the theoretical framework and the working hypotheses of this study, as compositional differences may also lead to differential fertility.

2.3.1 Legal status

Citizenship

Before the year 2000, German citizenship was based on descent (*ius sanguinis*). An application for naturalization was possible only after a stay of 15 years in Germany. Hence, most of the ‘guest workers’ who arrived in the 1950s and 1960s have remained ‘foreigners’ for a long time, or are still ‘foreigners.’ The government, consisting of SPD and Bündnis 90/Die Grünen, changed the *Staatsangehörigkeitsrecht* (right of citizenship) as of January 1, 2000. According to these rules, it is possible to apply for German citizenship after an eight-year stay. The biggest group of applicants have been Turks, representing about 44 percent of naturalization applications; while the share of Turks of the total foreign population in Germany is 25 percent (Dornis 2002).

For the first time, elements of the territorial principle (*ius soli*) have been introduced into German law: if one of the parents has had an *Aufenthaltsberechtigung* (right of residence) for longer than eight years, or an *unbefristete Aufenthaltserlaubnis* (unlimited residence permit), a child born to foreign parents in Germany receives the German nationality. If the child also receives the citizenship of the parents, he or she has to choose one of these nationalities before his or her 23rd birthday (*Optionsmodell*) (Angenendt 2002). Children born to a foreign-German couple receive German

citizenship. This applied to 17.7 percent of all children born to foreign mothers in 1994 (Münz, Seifert, and Ulrich 1997). Until 1974, children were granted German citizenship only if the father was German. After 1974, children became Germans if the father or the mother had held German citizenship at the childbirth. However, official birth statistics register the nationality of a newborn child by the nationality of the mother (Schwarz 1996).

The number of applications for naturalization by persons of the migrant-worker population was, and remains, relatively low. In total, Diehl (2002b) finds 29.3 percent of German residents of Turkish origin and 31.6 percent of those of Italian origin to be German citizens (aged between 18 and 30 years). Whereas the majority of Turks with German nationality became citizens by naturalization, most Italian Germans received German citizenship by birth because their parents have a bi-national marriage (Diehl 2002b).

Work permit

Following the end of the recruitment policies in 1973, moving to Germany with the goal of working was no longer allowed. This rule does not apply to foreigners who come from the member states of the European Communities (EC); they are allowed to work in Germany (*Arbeitnehmerfreizügigkeit*) (Herrmann 1992b). Family members of persons from non-EU countries (formerly from non-EC countries) who come to Germany in accordance with family-reunification rules do not receive a work permit in the initial period after immigration. From 1974 onwards, family members of immigrants from non-EC countries were generally forbidden to work. This rule was later loosened for non-adult children immigrating to join their parents in Germany before 1977 (Münscher 1979). Since 2001, family members of persons with a *befristete Aufenthaltserlaubnis* (temporary residence permit) or an *Aufenthaltsbewilligung* (residence permit) have been allowed to work after a twelve-month stay in Germany (Angenendt 2002).

Social benefits

Foreigners with children receive the same amount of *Kindergeld* (child benefit) as Germans do, provided the child lives in Germany. If the child remains in the country of origin, the child benefit is smaller than the amount received by families with children living in Germany (Herrmann 1992c). The child-care benefit (*Erziehungsgeld*) is paid for two years. Women from EU countries (and *Grenzarbeitnehmerinnen* [female border workers] from Switzerland as well as from Poland and the Czech Republic before their membership in the EU) receive *Erziehungsgeld* even when they give birth to a child and raise it in their country of origin, provided they worked in Germany prior to the birth. On the other hand, since 1986 Turkish women receive child benefits only for children born and raised in Germany (Schwarz 1996).

Unemployed foreigners are — like Germans — eligible to receive *Arbeitslosengeld* (unemployment compensation) or *Arbeitslosenhilfe* (unemployment aid, until 2004¹⁰). The same is true for *Sozialhilfe* (social welfare, until 2004). Foreign employees who receive a German pension are treated as Germans. It does not matter whether the pension recipient lives in Germany, in his or her country of origin, or elsewhere (Herrmann 1992c; for an overview see Eichenhofer 2000a, b).

2.3.2 Education

Concerning educational attainment, studies on immigrants to West Germany indicate levels of education among ‘guest workers’ that are lower than those of the German population, although differences between national sub-groups occur. Meis (1993) finds that about 16 percent of men from Yugoslavia, about 23 percent of men from Greece, and more than every third Turkish man lack school-leaving qualifications (using data of the Federal Institute for Population Research). Immigrant women have had even less education: nine percent of Turkish women were illiterates who never went to school, and over half of the married Turkish women in Germany were without school-leaving qualifications.

¹⁰ The changes effective from January 2005 onwards are not listed here since they are not relevant for the time frame of the study.

Döpp and Leib (1980) have investigated the education of Italian and Turkish 'guest workers' in Stadtallendorf (a town in the federal state Hessen), who made up about 19 percent of the total local immigrant population in 1979. Some 33 percent of the men and women from Italy, as well as 31 percent of the men and women from Turkey, had finished a course of occupational training. Regarding school education, differences are found between Italians and Turks. Among the Italians, 49 percent had attended school for more than seven years (i.e., they attended secondary school). Sixteen percent of the Italians went to school longer than eight years, and accordingly had mid-level or higher school qualifications; in exceptional cases, they also had a post-secondary degree. Some Turks, on the other hand, had never attended school; 72 percent of the Turks had finished elementary school, which lasts six years; eleven percent received more than eight years of school education (Döpp and Leib 1980).

Today, educational levels are, in general, still lower among immigrants and their children than they are among Germans. Riphahn (2003, using Microcensus data) demonstrates an educational gap between second-generation immigrants (i.e., persons born to immigrant parents in Germany) and Germans in her analysis of educational attainment, measured by current enrollment in secondary school and by highest completed degree. This educational gap remains significant even after controlling for demographic factors, indicators of immigrant assimilation, indicators for the parents' human capital, country of origin, as well as regional and yearly fixed variables, and this gap persists also over time. Deficits in educational attainment among immigrant children even seem to increase the younger the cohorts are. Distinguishing by nationality, the least successful pupils are found among Turks, followed by Italians, Spaniards, persons of former-Yugoslavian nationality, Portuguese, and Greeks (Riphahn 2003).

Whereas most of the studies find lower average educational attainment among second-generation immigrants than among Germans, there is a trend among the second generation towards attaining a higher level of education than their parents' generation, or at least receiving school-leaving qualifications (Seifert 2000). The *13. Shell Jugendstudie* (respondents aged 15 to 24) finds large differences between foreigners of the second generation and their mothers and fathers (see Table 3, Fritzsche 2000).

Von Below (2003) has studied the educational success of young women and men of Italian and Turkish nationalities who experienced their full school education in Germany (using the Integration Survey of the Federal Institute for Population Research). She finds that the average foreigner attains a lower school degree than the average German. Whereas these differences can be traced back to the lower educational levels of the parents of Italians, the effect for Turks cannot be explained by other control variables. Among Turks in North Rhine-Westphalia, Goldberg (2000) observes that second-generation immigrants receive a better school education than their parents’ generation (however, the educational level is, on average, still lower than that of Germans).

Table 3: Received or aspired school-leaving certificates of immigrants — %

	Men		Women	
	Second generation	Fathers	Second generation	Mothers
None or Hauptschule	26	72	17	75
Realschule	36	14	40	14
Abitur	38	14	43	9

Source: Fritzsche 2000: 371, 373 (data of the 13th Shell Jugendstudie).

Note: Missing % due to missing information.

2.3.3 Occupation

The social and occupational structure of the immigrant population is characterized by social and economic disadvantages stemming from the former ‘guest-worker’ milieu. These disadvantages were passed on to the next generation as a form of lower social starting position. However, there are differentials. For example, the share of white-collar workers increased in the 1990s, compared to the 1980s. Correspondingly, the share of blue-collar workers fell (Bade 1994, Seifert 1997). Nevertheless, Seifert (1997, using GSOEP data) finds 60 percent of the immigrant-worker population performing unskilled or semi-skilled work. Women belonging to the five big ‘guest-worker’ groups were almost exclusively employed as unskilled or semi-skilled workers in 1984. In the period up to 1993, the dominance of the blue-collar professionals decreased; however

two-thirds of female employees of foreign origin had held an unskilled or semi-skilled position at the same time.

For the second immigrant generation, who attended school in Germany, the data shows an increase in the number of persons employed in public administration and social services. Nevertheless, manufacturing was the most important job sector for the second generation in the 1980s and 1990s. Accordingly, income is, on average, lower for foreigners as a group than it is for Germans (Seifert 1997).

A trend to a differentiated social structure is visible among the immigrant population. In the Turkish sub-group, the small upper class and the growing middle class consist of persons who are first- or second-generation immigrants, and who worked as skilled workers. Their children or grandchildren attended a secondary school. Persons stemming from the worker population who had little or no school education or occupational training, and who had therefore held job positions as unskilled workers, belong to the lower class (Bade 1994).

Differentials regarding education and occupation among the second immigrant generation appear to be based on the countries of origin. For example, while barely eight percent of Spanish migrant workers were classified as qualified laborers by the German Federal Institute of Labor, almost 70 percent of their male children have a job as a skilled worker, master craftsman, or employee. By contrast, 31 percent of Turkish workers were hired as qualified workers, but only 28 percent of the men of their children's generation find a job in the categories mentioned (Thränhardt 1999). Thränhardt (1999) traces those ethnic differences back to differences in the educational politics of the various German federal states, regional segregation of the ethnic groups, and differences regarding the self-organization of the ethnic communities.

Although workers with higher levels of education also came to Germany as a result of the former recruitment campaigns, and although the educational levels among second-generation immigrants are increasing, the majority of immigrants have either no school-leaving qualification at all, or a low-level certificate (see Table 4). Employed German men typically complete *Hauptschule* or *Realschule*, and pass a vocational training course afterwards. This applied to about 63 percent of German men in 1980, and to 65 percent in 1996. The educational levels of persons from 'guest-worker'

countries differ greatly from those of Germans. Although the share of persons with a graded school certificate increased during the 1980s and 1990s, the share of persons without any school-leaving qualification was still high, representing roughly a fifth of the adults in respective country groups in 1996. The share of men who completed *Hauptschule* or *Realschule* and passed a vocational training was only up to 40 percent among migrants (Bender and Seifert 2000).

Table 4: Educational degrees of persons employed in Germany with social security by sex and nationality, 1980 and 1996 — %

Nationality	No school education		<i>Hauptschule/Realschule</i> without vocational training		<i>Hauptschule/Realschule</i> with vocational training		Abitur	
	Men	Women	Men	Women	Men	Women	Men	Women
1980								
German	5	6	25	38	63	53	7	4
Turkish	20	20	64	74	15	5	1	1
Yugoslavian	15	14	41	71	42	14	1	1
Italian	15	14	61	75	23	10	1	1
Greek	14	17	64	75	18	7	3	1
Spanish	15	14	59	73	24	12	2	1
1996								
German	6	8	15	19	65	63	14	10
Turkish	17	20	56	58	25	21	2	2
Yugoslavian	19	18	41	54	38	26	2	3
Italian	19	18	47	51	32	27	2	4
Greek	20	19	52	58	24	19	4	4
Spanish	12	14	42	44	40	34	6	8

Source: Bender and Seifert 2000: 62, 65 (data of the *Beschäftigtenstatistik*).

The structure of the recruitment policies was still visible in the labor-market status of the migrant-worker population in 1980. Up to three-fourths of immigrant men held a position as an unskilled or trained worker. However, in the following years, the share of unskilled and trained workers decreased among both women and men, whereas the share of *Facharbeiter* (skilled workers) and people holding white-collar jobs increased (see Table 5). This development took place to a different degree for the various nationalities, though. The distribution by work sector shows higher shares of

qualified jobs for persons from the former Yugoslavia. This reflects the, by that time, growing number of refugees who had higher qualifications than persons from the traditional ‘guest-worker’ period (Bender and Seifert 2000).

Table 5: Labor-market status by sex and nationality, Germany 1980 and 1996 — %

Nationality	Unskilled/trained workers		Skilled workers (<i>Facharbeiter</i>)		White collar	
	Men	Women	Men	Women	Men	Women
<u>1980</u>						
German	24	26	41	8	34	66
Turkish	76	91	22	5	2	4
Yugoslavian	50	83	46	7	3	9
Italian	72	86	25	7	4	8
Greek	74	89	21	6	5	5
Spanish	65	83	30	7	5	10
<u>1996</u>						
German	22	16	37	7	41	77
Turkish	70	71	25	7	5	22
Yugoslavian	56	66	38	8	6	26
Italian	61	61	30	10	9	29
Greek	70	74	21	6	9	19
Spanish	49	49	35	8	16	43

Source: Bender and Seifert 2000: 70 (data of the *Beschäftigtenstatistik*).

Persons of Italian, Spanish, Greek, Turkish, or former-Yugoslavian citizenship ‘are initially less able than natives to translate their human capital into occupational status within the German labor market,’ find Constant and Massey (2005: 502) using data of the GSOEP. Immigrants are channeled into first occupations of significantly lower status than persons of the German population. The authors assume that immigrants take on jobs of very low status when they arrive and — for a relatively long time span — remain in these jobs. The prestige of the first job determines the subsequent upward mobility, which is one of the reasons why Germans do better in the subsequent occupations, whereas immigrants are also less likely to turn their human capital into job positions of higher prestige. However, when controlling for the

occupational status, less evidence for the earning disadvantages of immigrants is found (Constant and Massey 2005).

While unemployment did not exist during the recruitment phase and unemployed ‘guest workers’ largely left West Germany in the 1970s, the number of foreigners without work increased in the 1980s, and has been higher than among Germans ever since (almost 20 percent). The unemployment rates vary by country background. The highest share of unemployed persons is observed for Turks, with more than 20 percent, while Yugoslavians have the lowest unemployment rates among the five nationalities considered in our study (ten percent; data from 1996; Bender and Seifert 2000; see Table 6).

Table 6: Unemployment rates of foreigners in Germany by country of origin — %

	1980	1985	1990	1995	1996
Turkey	5.9	14.6	10.3	18.9	21.8
Yugoslavia	2.6	10.0	6.3	9.2	9.9
Greece	3.8	11.5	10.0	15.7	17.4
Italy	4.8	14.3	11.0	15.9	17.4
Spain	3.0	8.8	7.2	10.7	11.5

Source: Bender and Seifert 2000: 79 (data of the Bundesanstalt für Arbeit).

2.3.4 Religious affiliation

Investigating the religious affiliation of ‘guest workers,’ Kane (1986) uses official statistics from 1961 to 1981. According to these data, more than 90 percent of the immigrants from Italy and Spain had a Catholic affiliation, about 95 percent of Turks had a Muslim affiliation, and 95 percent of Greeks belonged to the Greek Orthodox Church (Kane and Stephen 1988: 201).

Religion plays an important role in father-son relations in Turkish families, whereas religion is the domain of women among Greeks and Italians (BMFSFJ 2000: 107). For second-generation Turks, Meng (without year: 28) observes that Islamic fundamentalism, in particular, can serve as an ‘identity anchor.’ He finds that young women of Turkish origin in Germany see themselves as confronted with role guidelines

in the family and in society that are partly in opposition to each other. Growing up in patriarchal family structures has not enabled young women to develop competencies such as empathy, role distance, and tolerance of ambiguities, for example. The re-orientation to Islam may help to overcome the patriarchal claims (Meng [without year]).

However, a stronger orientation towards religion cannot be found among younger immigrants in general. The younger the respondents are, the less frequently they attend religious services (Diehl, Urbahn, and Esser 1998, using GSOEP data). Asked how important religion is for general satisfaction with their own lives, the majority of Turks said they regard religion as 'important' or 'very important' (33.6 and 43.3 percent), whereas religion did not play such an important role for the Germans surveyed (33.0 and 11.3 percent). However, the relatively high importance of religion is not only a typically Islamic phenomenon. For Italians, Spaniards, Greeks, and persons from the former Yugoslavia, the respective religion does have a relatively high impact on the level of contentment. On other hand, the frequency of attendance at religious ceremonies is similar for these foreign groups and Germans (Diehl, Urbahn, and Esser 1998).

2.3.5 Social interaction and marriage behavior

A persistence or change of norms, attitudes, and behaviors depends, among other things, on social interaction (Bernardi 2003). Only a small share of persons of the 'guest-worker' groups maintains closer contact with West Germans, such as visits or help with problems (Bonacker and Häufele 1986). Haug (2003) investigates the social integration of Italian and Turkish immigrants aged 18 to 30 years, looking at social networks (using the Integration Survey of the Federal Institute for Population Research). She finds differences by sex: compared with foreign men, foreign women have a smaller number of friends, less frequently have a multicultural network of friends, and more often maintain contacts with persons of the same nationality and ethnic group. Distinguishing between the immigrant generations, she finds more contacts to Germans among second-generation migrants (here defined as persons who were born in Germany or who immigrated before school age) than among the first generation. The reason for this difference is seen in the inter-generational differences in school education (Haug 2003).

Regarding union formation, differences appear between both immigrant women and men, as well as between the immigrant generations. At the beginning of the recruitment drives, for example, more than 80 percent of male Turkish migrant workers were married when they went to West Germany. However, only a fraction of them initially lived in Germany with their spouses (Abadan-Unat 1974). The wives joined the husband later on. In recent years, the character of immigration to Germany has shifted to unmarried persons who marry after their move. The number of weddings that take place in Germany — whether in a German *Standesamt* or in a Turkish consulate — has been growing in recent years (BMFSFJ 2000). As is typical for immigrant groups, men are more likely to marry a woman from the population at destination than immigrant women are likely to marry a West German man in general. The likelihood of mixed marriages is higher among the second generation than among the first generation, though. The likelihood of a mixed marriage increases when the immigrant has a higher education. In general, immigrants show a preference for homogamy — related to religious affiliation as well as to country background — since this seems to reduce the potential for conflicts between the partners. The more balanced the sex ratio within a national sub-group is, the greater are the chances this homogamy preference will be realized; and this pattern seems to be independent of the total size of the respective sub-populations. The degree of social interaction with Germans and homogeneity of the marriage are interrelated: homogeneous immigrant couples maintain a social network mainly in their own ethnic group (Weidacher 2000, Milewski-Nykiel 2002, Milewski 2003, Straßburger 2003, Gonzalez-Ferrer 2006).

Straßburger (2003) stresses the importance of a kin alliance in the process of partner selection and marriage for second-generation Turks in Germany. Children of immigrant parents are often expected to marry a person of the kin network in the country of origin in order to bring this person to Germany as well. However, another reason for marrying a related person is the shared attitudes and intentions regarding family networks, which a German partner would probably not share with a person of the immigrated Turkish population (Straßburger 2003).

Further factors that are thought to influence the rate of mixed marriages are knowledge of the German language, naturalization, and duration of stay in Germany. Among the national sub-groups considered in our study, women from the former

Yugoslavia and Spain had the highest rates of mixed marriages with Germans: in 1980, three out of 100 single women married a man of a German nationality. For men, the highest rates of mixed marriage are found for Italians; 5.7 percent of them married a German woman (Kane and Stephen 1988). Even lower are the rates of mixed marriages between immigrants in Germany and other immigrants stemming from a different country. This is most often traced back to language barriers and cultural differences, mainly different religious affiliations of people belonging to the respective immigrant groups. Religious homogamy increases the segregated living of a couple (Mimkes 2001, Vetter 2001, Milewski-Nykiel 2002, Milewski 2003).

The share of persons who are married is higher among the immigrants living in Germany than among the Germans, and the foreigners' age at first marriage is about two years lower on average than that of the Germans (Roloff 1998). Among the immigrant groups under consideration here, men and women of Turkish origin have the highest proportion married (95 percent) and the youngest ages at first marriage (Schwarz 1980). The relatively young age at marriage correlates with relatively low educational attainment, but also with direct marriages. The absence of pre-marital cohabitation is more frequently observed among the immigrant generations than among Germans (Milewski 2003).

As concerns childbearing, marriage is the main type of union in West Germany for the transition to parenthood both for migrants and Germans, although the share of non-marital births is higher among Germans (Carlson 1985b, BMFSFJ 2000).

2.4 Research summary: Fertility of ‘guest workers’ in Germany

The relative scarcity of studies on family behaviors of immigrants in West Germany, as mentioned in the introduction, can be partly attributed to the fact that the childbearing phase of ‘guest workers’ (and other immigrants) started before they moved to Germany, and partly because ‘guest workers’ were supposed to stay only temporarily in West Germany. The dearth of studies can also be related to a problem that has been known to affect research on fertility in Germany in general: the shortage of data that allows for precise analysis. The German Microcensus, for example, the largest dataset available, does not contain a question about the biological number of children, but asks only about the children that live in the respondent’s household (Kreyenfeld 2004). Estimations based on this dataset may therefore underestimate the number of children a woman has had if a child has left the parental home already. In the immigration context, this means that children staying in the country of origin are not included in the dataset. Hence, neither the total of number of children, nor the parity of the respective subsequent birth(s) may be correctly calculated.

In previous decades, immigrants were also included in larger social surveys and became the subject of special surveys in family sociology (c.f. Nauck 2007). The datasets, albeit much smaller in size than the Microcensus, may provide sufficient information on birth histories in general, but typically lack information about the migration history of the respondent. Other datasets that researchers have used in order to study the fertility of immigrants have been designed for different topics. Since they do not center on information about children, the birth histories are normally not complete, or the respondents are too young at the interview to allow us to draw reliable conclusions about much of their fertility behavior.

Hence, the studies on the topic carried out so far cannot present anything near a complete picture of the fertility of immigrants living in Germany. They each deliver pieces, either focusing on a specific group of origin (mostly Turks), or on an aspect such as segregation. In this part of the chapter, we provide an overview of the studies that have been carried out so far, the datasets and methods used, as well as the results in

more detail, and a discussion in the light of the theories introduced in Part 2.1 of our paper.

2.4.1 Period, age, and time effects

Calendar year

The fertility of women from the five 'guest-worker' countries that are under consideration for our study, as well as of West German women, declined in recent decades. This is also true for the non-emigrated women in the respective countries of origin; they have shown decreasing birth rates since the 1970s. The fertility patterns of immigrant women from different countries of origin in West Germany show differences, however. In the year 1993, for example, the total fertility rate of Turkish women was almost twice as high as the West Germans' rate, whereas Spaniards had only half as many children as West Germans did (Nauck 1997; see Table 7).

Table 7: Total fertility rate in selected countries of origin and in Germany

	Immigrants in Germany						Women in country of origin			
	1975	1980	1985	1987	1990	1993	1975	1985	1990	1993
West Germans							1.3	1.3	1.4	1.3
Turks	4.3	3.6	2.4	2.9	3.0	2.5	5.1	4.1	3.0	2.8
Greeks	2.8	1.8	1.2	1.2	1.2	1.2	2.3	1.7	1.4	1.4
Italians	2.3	2.0	1.5	1.6	1.5	1.3	2.2	1.5	1.4	1.3
Spaniards	2.0	1.7	1.2	1.3	0.7	0.6	2.8	1.8	1.3	1.2
Yugoslavians	2.2	2.0					2.3	2.1		

Source: Nauck (1997: 164); TFR for Yugoslavians according to Kane (1989).

Schwarz (1996) relates the development of the birth numbers of foreign women in Germany to the general economic situation in Germany and to the welfare-state framework. The low birth rates in 1985, visible in particular for Turks, could be partly the result of return migration due to the worsening situation on the labor market in West Germany and rewards for return migrants. On the other hand, since 1986, families from non-EU countries receive child care benefits only for children who were born and raised in Germany. This is mainly important for Turks, and is probably the cause for the increasing birth numbers among Turks in much of that time period (Schwarz 1996).

However, one has to be careful with conclusions here. The TFR takes into account only the births that were given after the move to Germany. Hence, conclusions cannot be reached about the total number of children of a woman. Also, some numbers seem rather awkward, such as the TFR of 0.6 of Spanish women in West Germany. Several authors relate this to a low share of married women from Spain in Germany (c.f. Schwarz 1996). It may well be, however, that there are more causes behind this number. International migrants may deliver their child in the home country, for example. In such a case, the birth would not show up in the German birth registers. Another potential cause for an underestimation of the TFR could be an overestimation of the number of immigrants living in Germany. As in any other country, statistics on return migration tend to underestimate the real numbers. In addition, a naturalization of the mother may hide the immigration background, and therefore also lead to an underestimation of fertility based on immigrants who have not been naturalized. Due to the different causes of systematic underestimation of the fertility of immigrants, Germany's Federal Statistical Office has discontinued the calculation of immigrant-fertility figures (c.f. Schwarz 1996, Nauck 2007).

Age

Women from the five countries of origin share a relatively young age at childbearing compared to West Germans. In the second half of the 1970s, for example, the peak of childbearing was between ages 20 and 24 for immigrant women, but around ages 27 and 28 for West Germans (Kane 1986 and 1989; see Table 8). Kane analyzes marital and non-marital fertility trends for five 'guest-worker' populations from 1961 to 1981, and compares them for the first time to those of West Germans and of women in the respective countries of origin. He studies Greeks, Italians, Spaniards, Turks, and Yugoslavians using population and fertility data from the 1961 and 1970 West German national population censuses, from the annual microcensuses, and from population registration systems. The age-specific rates are quite similar for women in the countries of origin and immigrant women in West Germany (Kane 1989).

Table 8: Unadjusted age-specific fertility rates for ‘guest-worker’ groups and West Germans, 1980 — per 1000

	Turks	Yugoslavians	Greeks	Italians	Spaniards	West Germans
15–19	80.1	43.3	44.3	43.8	14.1	13.2
20–24	235.8	137.6	127.3	136.5	90.0	77.3
25–29	176.8	88.1	86.0	105.5	82.5	105.1
30–34	119.2	49.7	46.6	63.9	56.5	63.1
35–39	67.8	21.9	24.7	30.8	26.5	16.4
40–44	27.7	7.4	5.8	9.3	9.0	3.5
45–49	6.4	0.3	0.3	0.9	0.4	0.3

Source: Kane (1989: 187).

Duration of stay

Using individual birth-history data, Mayer and Riphahn (2000) study the fertility of women of the same five ‘guest-worker’ nationalities from the 1996 wave of the German Socio-Economic Panel. They analyze women aged 40 and older (375 foreigners, 1718 Germans), and use the completed fertility in order to study the effect of the number of fertile years an immigrant woman spent in Germany on her final number of children (Mayer and Riphahn 2000). This analysis reveals period effects in the fertility of immigrants: those who arrived in the 1970s have a higher number of children than the immigrant cohorts who arrived prior to or after them.

On the one hand, the results confirm the socialization hypothesis: immigrant women from these five countries have higher levels of completed fertility than West Germans: Turks, 3.8; Italians, 2.8; Spaniards, 2.5; Greeks and Yugoslavians, 2.3; compared to 1.9 among Germans. On the other hand, they prove adaptive behavior: immigrants who spent their whole fertile period abroad have on average 3.8 children, those who spent one or five fertile years in Germany have an average of 3.2 children, and those who spent almost their entire fertile life span in the country of destination have an average of 2.3 children. While immigrants still tend to have higher numbers of children than West Germans, those who immigrate before their 28th birthday (meaning they spent more than 13 fertile years in Germany) have a smaller number of children than those who immigrate at a later age (Mayer and Riphahn 2000).

2.4.2 Individual factors influencing fertility

As we have seen, the socio-demographic structure of the 'guest-worker' population is different from that of the German population in West Germany. Fertility differentials between the majority and the immigrant population(s) may therefore be due to compositional differences. These fertility differentials may be reduced or disappear altogether when it is controlled for compositional differences in the analysis. The trait that is used most often in order to explain fertility differentials between immigrants and West Germans is marital status.

Marital status

Marriage is the most important factor for childbirth, both for West Germans and for immigrants (Carlson 1985b; c.f. Schwarz 1996, Weidacher 2000). Kane (1989) traces the overall fertility decline among immigrants from 1975 to 1980 back to a decrease in marital fertility for all immigrant groups, whereas the proportion of married persons in these groups did not decline much in this time span. By 1980, the immigrant groups originating from Turkey, Yugoslavia, Greece, Italy, and Spain showed a convergence in marital fertility. The share of married couples with at least one child was similar for couples with a German and a foreign husband: around 85 percent in the 1980s and in the 1990s (Kane 1989, Schwarz 1996).

The share of non-marital births among the total number of births of immigrant women living in West Germany reaches levels similar to those of West Germans (about 12 percent at the beginning of the 1980s), and is much higher compared to the respective levels in the countries of origin. (Carlson 1985b) relates the differences in the shares of non-marital births between immigrants in Germany and women in the respective countries of origin to an 'overarching structure of social pressure and possibilities,' which defines normative bounds of marriage and childbearing. As the social environment changes, fertility behavior changes, too (Carlson 1985b: 111).

Among Turkish immigrant women, only two percent remained childless. Schwarz (1980) explains this with the marriage behavior of Turks: almost none of the Turkish women aged 25 years and above and living in Germany was unmarried, and almost all of the married Turkish women in Germany lived together with their husbands

(16 percent of Turkish men in Germany were married, but their spouses were still living in Turkey) (Schwarz 1980).

In a more recent paper, Haug (2002) studies mate selection and fertility of persons aged 18 to 30 years of German, Italian, and Turkish descent. Immigrants, as well as their children, are among the persons studied. She uses data of the Integration Survey carried out by the Federal Institute for Population Research in 1999.

Due to the age structure of the respondents, only 23 percent of the people surveyed had become parents; from about 18 percent among Germans to 31 percent among Turks. Lone parenthood was rare among all three groups. A child-oriented marriage pattern was instead found to be common. Thus, having a child correlates less with a stable partnership, but more with marital status. The desire for having their own children was found to be highest among Turkish and Italian women and men (90 percent); by contrast, just 70 percent of Germans indicated they want to have a child. The logistic-regression analysis of having children reveals the marital status as the variable with the highest impact. Married persons were shown to be 22 times more likely to have at least one child compared with unmarried persons. Therefore, Haug (2002) concludes that young Turkish women still follow traditional family patterns. They are characterized by early marriage, a low frequency of childless persons, and larger family sizes on average.

Educational attainment and employment

As far as further determinants of fertility are concerned, the few studies carried out so far show that the behavior of immigrants and West Germans is affected in a similar manner. This applies mainly to educational attainment. Studies on the effect of education on fertility of Germans show that fertility declines as a woman's educational level increases (c.f. Huinink 2006). The analysis by Mayer and Riphahn (2000) on 'guest workers' shows a similar fertility-declining effect of a higher education: every additional year of schooling decreases the number of children by 3.8 percent. The impact of the type of school degree is not of statistical significance; however, women with a vocational degree have lower birth numbers than others. The only exception are persons with an apprenticeship, who have on average fewer children than those with an

advanced degree. Haug (2002) arrives at similar results: the likelihood of having children decreased with higher education, completed vocational training, and enrollment in education (both for women and men).

Hennig and Kohlmann (1999) analyze the number of children living in the households of Turkish, Italian, and Yugoslavian persons using data of the 1991 German Microcensus and applying Poisson regression techniques (in a country comparison to the same immigrant groups in the U.S.). They pay special attention to factors that can be related to the micro-economic theory of fertility behavior, and find that immigrants are affected in a similar way as West Germans: higher education, full-time employment, and higher income among women reduce the number of children in the household. The authors therefore conclude that 'economic factors always play an important role in fertility decisions, regardless of place of birth or country of residence,' whereas sub-cultural norms and a disruptive effect of the migration process appear to have a relatively small influence on immigrants living in West Germany (Hennig and Kohlmann 1999: 54). In general, it has been shown for Germany, as well as for other Western European countries, that gainfully employed women have lower transition rates to births than women out of the workforce (Kreyenfeld 2001a, Huinink 2006).

Religion

Regarding the religious affiliation, Mayer and Riphahn's study (2000) finds that women who do not have any religious affiliation generally have lower fertility than women who are religious, but the authors find different effects for 'guest workers' and Germans: whereas German Catholics and Protestants have higher completed fertility than women of other Christian faiths or no confession, being Catholic or Protestant decreases the number of children among immigrants; while belonging to another religious affiliation, mainly Muslim, increases the birth numbers, but not in a significant manner (Mayer and Riphahn 2000). Similarly, Haug (2002) concludes that Muslim religion does not have a direct impact on fertility behavior, but influences fertility indirectly by providing marriage norms.

2.4.3 Contextual and cultural factors

Another feature that has received attention is of geographical nature: the rural or urban origin of the immigrants and the degree of residential segregation at destination¹¹. In Kane's study (1986, 1989), the standardization for the area of origin proves regional selectivity as one of the factors affecting immigrant fertility for Italians and Turks: about 80 percent of the immigrants from Italy come from the southern part of the country and Sicily, where fertility was above the Italian average. Controlling for regional composition reveals a four percent lower fertility rate among Italian immigrants in Germany, compared to fertility levels in their home country (Italian migrant fertility was in total, however, 15 to 20 percent higher than that of the Italian population). By contrast, a disproportional number of immigrants from Turkey came from the western and central regions of the country. The fertility of women in those parts of Turkey is lower than that of the national average. Again, controlling for regional composition reduces the fertility differentials of Turkish migrants from 18 percent lower to three percent lower, compared to women in the country of origin (Kane 1986).

The correlation between segregation and fertility has been demonstrated by Nauck (1987); however, he interprets selection effects as self-chosen segregation rather than as the cause of segregation. He focuses on the fertility of Turkish immigrants in Germany, using individual-level data of 520 immigrant families (these retrospective interviews were conducted within the project on '*Sozialisation und Interaktion in Familien türkischer Arbeitsemigranten*' in 1984). The sample contains both women and men of Turkish nationality who were married to a Turkish partner, had at least one child, and shared a household in Germany. The mothers in the sample were 37.4 years old on average; the fathers, 41.9 years old. The author uses this relatively high age at the time of the interview as an indicator for stability of the analysis, since a high share of the families had reached the final number of children. However, the analysis excludes persons who were unmarried and/or childless, lived separately from their spouses, and couples of mixed nationality; and might, therefore, fail to give a representative picture of the Turkish population in Germany (Nauck 1987).

¹¹ For West Germans, Strohmeier (1989), for example, shows rural–urban fertility differentials and selected moves to rural areas among women with higher fertility.

Nauck's research question is whether the living conditions in the country of origin are more important than those of the country of destination; in Germany, mainly the level of ethnic segregation in the living area and in the residential building. The dependent variables are the average number of children living in the household, born in Turkey, and the number born in Germany. A classification analysis shows that the degree of segregation correlates only with the number of children living in a household, but not with the total number of children of Turkish families. Therefore, the number of children living in a household is only supposed to be an indicator for different family-reunification behaviors by living areas. Also, the level of segregation of the living area does not influence the total number of children a Turkish family has (Nauck 1987).

Correlation and regression analyses reveal the higher influence of contextual and individual determinants of the country of origin on the number of children, compared to the circumstances in the country of destination: the higher the degrees of urbanization and of modernization of the area of origin are, the lower is the number of children, both of those born in Turkey, as well as the total number of children. However, the higher the degree of urbanization of a woman's area of origin is and the higher her number of children born in Turkey is, the higher is the number of children born in Germany. According to Nauck (1987), this results from the emigration behavior of women: women from more urbanized and modernized areas emigrate in earlier phases of their lives, compared to those from rural and less modernized areas, and they therefore have smaller numbers of children in the country of destination.

On the individual level, Nauck (1987) sees the following factors as influencing the number of children: the higher the religious bonds and the stronger the normative gender-role orientations are, the higher is the number of children. By contrast, the higher the level of education is, the better the knowledge of the German language is, and the higher the family income is; the smaller is the number of children among Turkish families in Germany. These factors are correlated. The variable 'urbanization of the area of origin' has the most explanatory power since it determines the socio-structural position in the society of origin; for example, in terms of educational chances, religious practices, family living style, and the value associated with children. The second important variable is the educational attainment of the woman: the higher it is, the higher is the likelihood that a woman has left the network of the normative family

context before her emigration. Higher education is related to lower fertility in Turkey as well as in Germany.

The number of children born in Turkey influences the fertility behavior of immigrant women in Germany to a high degree. For example, children reduce the opportunities for learning the language of the host society and strengthen the religious bonds, both of which hinder assimilation processes. At the same time, the benefits expected from parents with utilitarian expectations towards their children are lowered in the country of destination because of higher costs of children and the costs of the immigration itself. Therefore, immigrant couples adjust their fertility behavior to the situational changes, but not due to normative changes. The process of modernization influences the type of value placed on children, but he also expresses doubt that childlessness will become a highly regarded alternative among Turkish immigrants in Germany. The reduction of births by adapting to German circumstances applies mainly to higher parities (Nauck 1987).

Vaskovics (1987) investigates the association between the fertility of foreign women and the level of segregation of their living area. About 40 percent of foreign women live in blocks where the share of foreigners is about 30 percent. He finds that the number of children increases with an increasing level of segregation, and attributes that to the tradition of cultural norms and gender-role orientations of the respective countries of origin.

As indicated by Nauck (1987), knowledge of the German language correlates with the degree of adaptation of immigrants to Germany. Kane (1986) shows that an increase in self-evaluated language proficiency leads to a decrease in the average number of children a Turkish woman has. Turkish women aged 25 to 39 with a good command of German were at most a third likely to have four or more children than immigrant women from the same country of origin with little knowledge of the German language. The direction of this relationship may, however, work in both ways since migrant women with many children are more likely to be housewives and therefore to live at home, separated from German society (Kane 1986).

Most of the studies find the general trend that immigrant women of the first generation have a number of children that is, on average, lower than that of the

respective country of origin and higher than that of West Germans. Von Delhaes-Günther (1977), for example, compares the average number of children of female and male immigrants from southern Italy in North Rhine-Westphalia to the number of children of their parents and their siblings that remained in their home region. He finds that the number of children is lower among the children's generation compared to their parents', but that the emigrants to Germany have the smallest number of children, with 1.9 on average. Meanwhile, their brothers and sisters in Italy have 2.6 and their parents 4.9 children. The author sees his findings as illustrating a rather rapid adaptation to the fertility patterns of an industrialized country (von Delhaes-Günther 1977).

2.4.4 Reflections in the light of theory

The review of the literature on international findings as well as on studies on West Germany shows that five main hypotheses are posited as possible explanations for fertility differentials between migrants and other persons at destination. *Per se*, investigation of most of these hypotheses requires obtaining information about the sequencing of events (migration, births, marriage); i.e., accessing longitudinal data. In practice, however, there appears a lack of this kind of data. Hence, hypotheses can hardly be proven, or studies may arrive at contradictory conclusions.

In West Germany, the crude birth numbers of migrant-worker populations reflect the history of 'guest workers'. During the first 'guest-worker' phase in the 1960s, when mainly male 'guest workers' entered Germany, the birth numbers of foreigners were relatively low. In the 1970s, a period characterized by family reunions, the number of foreign births increased. This is reflected by aggregate measures (Linke 1976, Kane 1986, BMFSFJ 2000) as well as by data on the individual level (Mayer and Riphahn 2000). Since the 1980s, the number of births by 'guest workers' and their descendants in Germany has declined somewhat.

Socialization

In general, the summary measures seem to support the hypotheses of socialization and of adaptation. The TFR of the immigrant women in West Germany lies between the

fertility rates of the respective countries of origin and of West Germany or close to the TFR of West Germans. At the same time, immigrants from the different countries show fertility differentials, as they can also be observed between these countries of origin, i.e., higher TFR can be seen for Turks than for women from the Southern and Southeastern European countries. However, for the aforementioned reasons, one has to be careful in drawing conclusions.

Besides methodological problems, the findings on fertility of 'guest workers' in West Germany are in line with international studies. In general, the family formation behaviors of emigrant women from the Mediterranean area seem to resemble the behaviors common in their countries of origin. Khoo *et al.* (2002) find that the fertility levels of women born in Italy, Greece, and the former Yugoslavia dropped in Australia as well when fertility fell in those countries of origin. Women from Turkey had higher fertility levels than women from the Southern and Southeastern European countries and women born in Australia over the past 30 years. The similarities between family formation patterns are also apparent in the low shares of non-marital cohabitation, divorces, and ex-nuptial births among women from Mediterranean countries in Australia. Also, young women tend to leave the parental household only for marriage. Therefore, the age at first marriage is relatively low (Khoo *et al.* 2002). In another country of destination, Belgium, particularly low fertility rates among women from Italy were also calculated (Perrin, Poulain, and Jimenez-Julia 2002).

For West Germany, Kane (1986) finds that:

'... Turkish and Italian migrant fertility during the 1970s still closely resembled the fertility levels and patterns in the regions of the home country from which they migrated. Because of the much higher levels of Turkish marital fertility and the more culturally and socially isolated circumstances of Turkish migrants, it seems unlikely that Turkish fertility in Germany will converge with that of native Germans in the next decade' (Kane 1986: 123).

Although international migration is associated with a shrinking of the family-formation process, immigrants from Turkey in West Germany have maintained family characteristics that are similar to women in Turkey. Childlessness remains an exception among immigrants from Turkey in Germany as in Turkey, and non-marriage also remains rare (Nauck 1997).

Most of the studies so far have focused on first-generation immigrants, or do not distinguish between the first and second generations. As an exception, Hennig and Kohlmann (1999) use an indicator if a person moved to Germany as an adult or during childhood or adolescence, but exclude immigrant children who were born in West Germany. Haug (2002) does not distinguish between the generations, either. In the latter study, the respondents are relatively young. Therefore, a large share of the sample may have spent at least a part of childhood and adolescence in Germany. It seems that young immigrants from Turkey, Greece, and Italy in Germany start family formation earlier and have a bigger family size than West Germans do. Both fertility preferences and actual behavior of second-generation immigrants in Germany seem to indicate a sub-cultural behavior on one hand. On the other, they point at the West German living context as shaping fertility behavior of immigrants.

Adaptation

As far as the adaptation hypothesis is concerned, the duration of stay at destination needs to be considered. For West Germany, Mayer and Riphahn (2000) find support for the theory of assimilation (adaptation) by taking into account the number of fertile years spent in Germany, which is seen as contradicting the disruption assumption. The influence of the socialization is reduced the earlier in life a woman emigrated, and the more fertile years she spent in the German context. Hennig and Kohlmann (1999) also support the adaptation hypothesis since they find that economic factors have a higher influence on fertility than sub-cultural factors. None of the studies, however, takes into account whether the children were born prior to or after the move, and they investigate only the number of children of women aged 40 and older. Therefore, they cannot answer the question about the impact of the migration itself on subsequent childbearing.

On the contrary, one may rather argue that this kind of analysis says more about the selection of migrants according to their number of children prior to the migration than about the likelihood of international migration decreasing the more children a family (woman) has (Kane 1989). Nauck (1987), however, sees support for the adaptation theory in the fact that the reduction of births applies mainly to higher parities.

Selection and characteristics

Most of the studies discuss or show the importance of selection mechanisms in the fertility of immigrants. The in general higher fertility of immigrant women is traced back to higher shares of married women in the respective groups (e.g., Kane 1989). The hypothesis of the interrelation of events, however, has not been tested in previous studies.

To the extent that studies take into account compositional differences, they find fertility differentials reduced. Marital status (Haug 2002), educational attainment (Nauck 1987, Mayer and Riphahn 2000, Haug 2002), and the type of place where a woman spent her childhood (Kane 1986, Nauck 1987) all play a role. For the type of the area of origin, Nauck (1987) sees here mainly an indirect influence, since the degree of urbanization has a strong impact on the educational opportunities of women. Controlling for these covariates reduces or extinguishes fertility differentials between immigrants and West Germans, as well as between migrants and the women in the respective countries of origin, and supports the hypothesis of characteristics.

Disruption

Previous studies on 'guest-worker' fertility in Germany did not find any evidence for a disruption effect. Such an effect was, however, shown for immigrating ethnic Germans. They usually migrate in complete families with an almost even share of the sexes. For ethnic Germans coming from the former Soviet Union, Dinkel and Lebok (1997: 259) have found that 'migration to Germany more or less ended the process of family extension.' While the relative fertility level of immigrated ethnic Germans before their migration was more than 50 percent higher than that of German women, the fertility of immigrated ethnic Germans dropped during the initial years after their move to Germany to about 40 percent of the level of Germans in the same age groups. Dinkel and Lebok (1997) offer the adjustment to the highly competitive West German living conditions, in particular to the labor market, as an explanation for that decline. Their results show an even bigger decline in fertility for persons of smaller religious groups (mainly Mennonites and Baptists) than for Protestants, Catholics, and Orthodox Christians (Dinkel and Lebok 1997).

Legitimacy

Finally, the hypothesis of legitimacy has not received much attention in the German context yet. We do not assume it to be of much importance for the study population. In terms of the legal framework in Germany, it is not possible to obtain German citizenship through the birth of a child in Germany. Before 2000, German citizenship was based on descent (*ius sanguinis*). An application for naturalization was possible only after a stay of 15 years in Germany. Hence, most of the immigrant workers who moved to West Germany in the 1950s and 1960s remained 'foreigners' for a long time, or are still 'foreigners.'

However, not possessing German citizenship does not necessarily mean that an immigrant cannot stay in the country. Migrants from Italy, Spain, and Greece have freedom of movement and residence since these countries are members of the European Union, and therefore do not need German citizenship in order to stay in the country. Although these rules do not apply to emigrants from Turkey and the former Yugoslavia, women from these countries may nevertheless have a relatively small problem obtaining a residence permit due to the 'guest-worker' conditions as described above.¹²

Diehl (2002b) shows that the numbers of naturalizations have been relatively low among the 'guest-worker' population. Only about a third of the persons of Italian or Turkish origin had German citizenship in 2000 (data of the Integration survey). Interestingly, the likelihood of having German citizenship, or of applying for naturalization, is higher among persons of foreign descent who were born in Germany than it is for first-generation immigrants. This suggests that the acquisition of German citizenship is not a priority among first-generation immigrants of the 'guest-worker' groups and therefore not relevant in order to explain their fertility behaviors.

¹² The legal conditions are different for other immigrant groups. Investigating the migration strategies of Cameroonians, Fleischer (2007) suggests the possibility that migrants can gain a residence permit if they have custody of a child with a partner who has either German citizenship or a residence permit. But even so, marriage remains the crucial factor both for those people who aim at gaining legal status in Germany, and immigrants moving to Germany owing to family reunion.

2.5 Research approach and working hypotheses

The main research goal of our study is to compare the fertility of international migrants and their descendants in West Germany to the fertility of West German women. We give special attention to the impact of the migration process on the timing of subsequent events. Therefore, we apply the life-course approach.

2.5.1 The life-course approach

According to the life-course perspective, an individual's life is composed of a series of transitions or life events, which are embedded in trajectories or careers (or status passages) that give them distinct form and meaning (Elder 1985, Elder 1994). The aspect that gives a transition a distinct notion is the irreversibility or path-dependency of the processes described. This implies that events depend on preceding stages in the process (de Bruijn 1999). The life-course approach examines life trajectories of individuals with the aim of explaining their movements between various statuses. Therefore, the timing of events in one life domain of an individual relative to changes in other life domains and changes in social relations and context is of crucial importance. Giele and Elder (1998) identify four key factors that determine the shape of an individual's life course: human agency, linked lives (social relations), historical and geographical context, and timing of life events.

Whereas research on fertility has paid attention to changes in education and occupation, and while family events are increasingly considered in migration studies, life-course techniques have not been extensively applied to the effect of migration on fertility. The hypotheses discussed consider individuals' responses to changes in the environment, an interplay between different careers, embeddedness in social networks, and the importance of time. However, due to a lack of retrospective data, the vast majority of the literature uses aggregate-fertility measures and therefore cannot answer the hypotheses in full.

The studies on fertility of international migrants that are based on longitudinal data come to similar results regarding the hypothesis on interrelation of events. They

find a close connection between migration and family formation (Singley and Landale 1998, Andersson 2004, Lindstrom and Giorguli Saucedo 2007). These studies did not find much evidence for fertility disruption after immigration. But by examining transitions to higher-order births, they show the hypothesis of adaptation to be true (Andersson 2004, Andersson and Scott 2005, Andersson and Scott 2007, Lindstrom and Giorguli Saucedo 2007). Studies on fertility of internal migrants find evidence for both selection and adaptation (Courgeau 1989; White, Moreno, and Guo 1995; Lindstrom 2003; Jensen and Ahlburg 2004; Kulu 2005; Kulu 2006). As these studies suggest, a parity-specific research method that takes duration of stay into account is necessary in order to gain a reliable picture about the fertility of immigrants. Toulemon (2004, Toulemon and Mazuy 2004) shows the importance of controlling for age at immigration: the older immigrants are at immigration, the more children they have had prior to the move, and the lower the number of children born after the move.

Our study takes only the time after immigration to West Germany into account, the immigrant generations are distinguished, and a parity-specific view is applied. The main research questions of our study are, therefore: Are transition rates to first, second, and third births of immigrant women of the various generations different from those of West German women? If so, what is the extent to which any fertility differentials can be explained by immigrants' selectivity, by duration of stay in West Germany, and by compositional differences? What are the factors that play a role in birth behavior? The immigrant generations are compared to West Germans, and we ask if there are differences between national sub-groups.

Our guiding hypotheses are derived from the theoretical framework presented in Chapter 2.1 and consist of two parts: In Part 1, we formulate hypotheses for the entry into motherhood (first conception); in Part 2, the hypotheses are applied to the transitions to subsequent children (second and third conception). For the first immigrant generation, the hypotheses for the transition to a first child applies only to those who moved to West Germany without having given birth before the move. The framework for the analysis of a second and a third child also admits women who moved to West Germany after giving birth to a first or a second child, respectively. Women of the second migrant generation are included in both parts of the hypotheses.

Our study takes into account the socio-demographic background, as well as the marital and fertility histories of all immigrant and West German women. For first-generation immigrants, marriage and childbearing before migration influence fertility after the move. It can be hypothesized that the duration of stay in West Germany is of crucial importance for the economic situation of a person or a household, as well as for socio-cultural adaptation (and *vice versa*, these factors influence the stay duration, i.e., the more a person is adapted to the destination society, the longer the person continues to stay there). Stay duration, economic factors, and socio-cultural factors have an impact on fertility. Therefore, our analyses will include the time since arrival of first-generation immigrants and socio-cultural covariates (c.f. Rumbaut and Weeks 1986).

Before turning to the hypotheses, we comment briefly on the terminology as used. Most statistics in Germany use nationality as distinguishing criteria, and speak of foreigners and Germans respectively. The differentiation between Germans and foreigners stems from the perception of many Germans who see Germany as an ethno-nation, rather than as a nation state. Hence, immigrants' children who were born in Germany but have not been granted German nationality are regarded as foreigners, too. Immigrants who have the right to apply for German nationality immediately after their arrival — which is the case for ethnic Germans — are considered Germans in official statistics, although they undergo a real migration process. This hides the migration backgrounds of these groups, as well as the histories of other immigrants who underwent naturalization, or of immigrant children who were granted German citizenship. Therefore, a terminology that distinguishes only between Germans and foreigners does not capture any background of international migration sufficiently (Bade 1994, Münz and Ulrich 2000).

Since the emphasis of our study is on the impact of the migration (background), the target group of our attention is named 'immigrant.' (In addition, we want to avoid the term 'foreigner' since it has received more and more negative connotations in the public sphere, and since 'foreigners' have been increasingly stigmatized as such [Jung and Niehr 2000]). Persons without any background of international migration are named (West) Germans. We prefer here the reference to nationality instead of the term non-migrants because non-migrants would also include internal migration.

A distinction is made between the immigrant generations by using the terms first and second generations. Persons who left their countries of birth and moved to West Germany when they were adults are counted in the first generation of immigrants. The children of the first immigrant generation, regardless of whether they immigrated as children or were born in Germany, are referred to as second-generation (im)migrants. It is clear that this word is somewhat vague since the migrant children did not move country on their own, or did not move at all. Nevertheless, we prefer this terminology since, again, it emphasizes the criteria of interest in this study. International literature has suggested different terminologies, such as the distinction between the allochthon and the autochthon population in francophone publications (e.g., Eggerickx, Poulain, and Kesteloot 2002), but this does not solve the problem of attributing a move to somebody who did not move. The same is true for the somewhat new suggestion to use just the term ‘second generation’ (without the addition of ‘migrant’) (e.g., Crul and Vermeulen 2006). In this case, it is not clear what second generation refers to.

2.5.2 Hypotheses, Part 1 — entry into motherhood

The working hypotheses for the transitions to a first, a second, and a third birth among immigrants of the first and second generations in West Germany are as follows.

H1) Disruption

First-generation immigrants: According to previous theory for first-generation immigrants, we should expect a disruption effect on fertility caused by the move. The hypothesis would be that the move delays childbearing and/or decreases first-birth intensities of immigrant women shortly after immigration.

Second-generation immigrants: According to the minority-group argument, the hypothesis of fertility disruption can be extended to second-generation immigrants. One would expect lower birth risks due to the effects of frustration and uncertainty as they are associated with the minority-group status in general.

In addition, we pay attention to the employment status of the woman. According to the minority-status argument, relatively low first-child transition rates should be

expected when women of the first immigrant generation are employed in West Germany. If there is such a fertility-decreasing effect of employment, this would be found also for second-generation immigrants. Since women's employment and childbearing also represent competing careers in West Germany for the majority population, such a hypothesis may be hard to test. Therefore, we extend the hypothesis to the status of non-employment. Kreyenfeld (2001a) has shown that West German women use times of unemployment for childbearing, i.e., have higher birth risks during unemployment. If immigrants and their descendants view their stay in West Germany with uncertainty, and strive for financial security (before or instead of investing in childbearing), their birth risks during non- or unemployment should be lower than those of West Germans.

H2) Interrelation of events

First-generation immigrants: The hypothesis on the interrelation of events applies to first-generation immigrants only. It competes with the disruption hypothesis and predicts elevated birth risks in particular in the first few years after the move.

The countries that are selected for our study had a tradition of higher fertility in earlier years. Women of the first immigrant generation who came to Germany from these countries moved to a lower-fertility context. A large share of these moves may have been due to family reunion, i.e., to join a spouse belonging to the first immigrant generation at an earlier time. In recent years, union formation may be of particular importance for immigration to Germany as the second-generation immigrants living in Germany have grown into marriage ages. When women immigrate to Germany in order to marry a man of the second immigrant generation, who grew up in Germany, the formation of the conjugal household usually takes place in Germany. In either case, the birth of a first child may be desirable among immigrant women and their partners in order to complete the union formation. A situation that involves such major life changes — as the decisions to leave one's home country and to enter into a marriage can be characterized — may also create uncertainty. Since children can be regarded as reducing uncertainty in certain situations in life (Friedman, Hechter, Kanazawa 1994), first-birth intensities may be elevated shortly after immigration.

H3) Adaptation

First-generation immigrants: Next, we want to find out whether or not there is an adaptation effect caused by the duration of stay of first-generation immigrants (this hypothesis does not apply to the second immigrant generation). The longer immigrants live in the new environment, the more they get to know the fertility behavior and norms that are dominant at destination, and the more they are exposed to the socio-economic conditions that structure daily life. Therefore, immigrants may be more likely to behave in a manner similar to West Germans as the length of stay increases.

The labor-force participation of a person is included as a channel of adaptation. Whereas the disruption hypothesis argues that persons who belong to a minority group may aim at improving their economic conditions, and may therefore suppress fertility intentions in general, the context of the receiving society is now taken into account. Andersson and Scott (2005) suggest that the answer to the question of whether immigrants engage in fertility behavior or in the labor force depends on general societal conditions. In Sweden, for example, where ‘no general pattern of a very pronounced incompatibility between childbearing and labor-force participation for the majority of native-born women’ is found (Andersson and Scott 2005: 23), immigrant women of all sub-groups are more likely to start childbearing when they are established in the labor market.

By contrast, the West German welfare state has supported mothers who stay at home with their children for decades (Kreyenfeld 2001a, Zabel 2006). In contrast to the policies of the respective countries of origin, mothers who stay at home receive financial support in West Germany. Note, in addition, that women from non-EU (or non-EG) states are subject to special conditions for immigration when they arrive due to family reunion, such as the denial of permission to work in the initial period after arrival. Therefore, we expect that women of the first immigrant generation do not strive to become gainfully employed in the first years of stay in West Germany, and that non-employment may not have a fertility-decreasing impact. Rather on the contrary, times of non- or unemployment may be seen as the best time to realize family formation and first-birth risks of immigrant women may be high during non-employment, similarly to those of West Germans. (This hypothesis competes with the disruption hypothesis.)

Since an adaptive process can be accelerated or hampered by the choice of a partner, the partner's country of origin will be included in this analysis, too. The adaptive process may accelerate when a woman with an immigration background is married to a man of the indigenous population (Saenz, Hwang, and Aguirre 1994, Andersson and Scott 2007). Therefore, lower transition rates to motherhood are expected for immigrant women married to a West German man, compared to an immigrant woman who is married to a partner from the same country of origin.

H4) Socialization

First-generation immigrants: The women in our study stem from five countries of origin, or are born to a parent from one of these five countries: Turkey, former Yugoslavia, Greece, Italy, and Spain. A common trait of these countries is that they all experienced a fertility decline in the past four decades. However, there are differences in the timing of the decline and in the patterns of fertility. We expect that these differences are reflected in the first-birth intensities of emigrants from these countries to West Germany. Therefore, first-generation immigrant women from Turkey may have higher transition rates than their counterparts from Southern and Southeastern Europe, because women in Turkey enter earlier and more often into motherhood than women of the remaining listed countries. This has also been seen for Turks in other countries of destination (Alders 2000, Andersson 2004).

When the immigration background of the partner is taken into account, we expect that the effect of socialization is even bigger for women who are married to a partner from the same country of origin than for women who are married to a West German.

Second-generation immigrants: In order to see long-term effects of international migration, the first-birth risks of first-generation immigrants are compared to those of the second generation. Second-generation immigrants experienced the low-fertility context of West Germany much longer than their parents' generation did. Therefore, first-birth intensities may be similar to those of West Germans, but lower than those of first-generation immigrants.

Competing with this hypothesis is the suggestion that birth intensities of second-generation immigrants may more closely resemble those of the first generation, and may be different from those of West Germans when the framework of minority groups or segmented assimilation is taken into account. According to this line of reasoning, migrant children may remain in their parents' national communities within the host country and preserve their values and behaviors. It has not yet been proven though that immigrant populations in West Germany preserve a closed sub-culture in this sense. If they do so, the elements, as well as the extent of preservation and lack of openness of the sub-culture may vary between groups, and may also depend on the size of the respective group. In general, West Germany and other Western European countries provide a societal framework sufficiently different from that of the U.S. as to make the application of U.S.-context theories to West Germany not particularly appropriate. For example, the welfare state affects individuals' behavior in Western Europe to a much greater extent — as can be seen in the role of employment status for childbirth in countries with different conditions — whereas the welfare state is much weaker in the U.S. Therefore, we assume that the second generation of immigrants in West Germany is more influenced by overall societal factors than by conditions in the immigrant community, and that sub-culture has no fertility-stimulating effect.

H5) Characteristics

First- and second generation immigrants: Finally, we review the hypotheses of selection and characteristics. The educational attainment (as a proxy for socio-economic status) of immigrant women is, in general, lower than that of women of the host society. These differences may cause fertility levels to differ as well. For the most part, we expect that higher education makes childbearing intensities lower (Mayer and Riphahn 2000, Kreyenfeld 2001a). When there is a trend towards attaining higher levels of education among second-generation immigrants than was achieved by the first generation, these compositional differences may cause fertility differentials between the generations as well.

Moreover, we control for the partner's and for parents' educational attainment and include indicators of the cultural background in the estimates. These are religious

affiliation, religiosity, and the characteristics of the place where the woman lived at age 15. If the composition of the immigrant groups is different from that of the West Germans, fertility differentials may be reduced when we control for these factors.

2.5.3 Hypotheses, Part II — transitions to a second and a third child

H1) Disruption

First-generation immigrants: Assuming again that a move abroad constitutes a stressful situation in life, it is logical to conclude that the stress associated with an international move will be even greater when a woman migrates with one or two children. At least two persons (possibly also the partner) have to cope with the changes. Therefore, it can be hypothesized — in accordance with the assumption for the transition to a first child — that those women of the first immigrant generation who moved to West Germany when they already had one or two children will have lower transition rates to a second or third birth than women without any, or without recent, migration experience.

When we compare first-generation immigrants who experienced the first and/or second birth in West Germany to those immigrating as mothers, it is possible that an immigrant who became a mother in Germany, has higher transition rates to a subsequent birth because her living circumstances may have become more stable by that stage. On the other hand, the minority-status argument may gain more importance when we consider subsequent children: Women who have spent some years in West Germany already may have experienced a downward trend in social mobility and a worsening in their economic and/or living conditions. When these immigrant women gave the first birth in Germany they have already ‘confirmed’ the marital union. Therefore, they may now, i.e., after the first child, aim to realize goals other than family enlargement. Therefore, their transition rates to a subsequent child may be expected to be relatively low compared to West Germans.

Second-generation immigrants: According to the minority-status argument, depressed subsequent-child transition rates should be observed for the second migrant generation, too.

H2) Interrelation of events

First-generation immigrants: In line with the hypothetical framework of the first-child behavior, the second hypothesis contradicts the disruption argument and posits higher birth risks. For one- or two-child mothers moving to West Germany a (subsequent) marriage may be an exceptional case. Nevertheless, it can be assumed that several events appear within a short time frame for the study population: the reunion of the spouses and the family. Since it was typical for the ‘guest-worker’ immigration that the partners moved at different points in time, their reunion can be seen as a formation of a new household or as a re-formation of an old household under new circumstances. This re-formation and the migration of the woman and the first one or two children occur simultaneously, and may trigger an effect of ‘union or family confirmation.’ This can also be seen as a time to catch-up with births which were postponed in anticipation of the move.

H3) Adaptation

First-generation immigrants: In correspondence with the hypothesis for the first child, we expect a convergence of fertility risks by stay duration of first-generation immigrants towards the levels of West Germans. The assumption is again that immigrants react to similar circumstances — mainly their employment situation — like West Germans do. This contradicts the assumption of fertility disruption.

H4) Socialization

First-generation immigrants: Our hypothesis is that differences by national sub-group appear mainly in the transitions to a second or a third child. Since a first child is almost universal in all countries of origin that are included in our analysis, country differences in first-birth risks may appear only due to different ages at first-time motherhood. However, the frequencies of second and third children are different in the respective countries of origin. If socialization has an influence on fertility behavior, higher transition rates to a second and a third child are expected for women of the first

immigrant generation from Turkey than for women from the former Yugoslavia, Greece, Italy, and Spain.

Second-generation immigrants: Again, in line with the argumentation for the entry into motherhood, second-generation immigrants may show birth risks which are similar to those of West Germans, but are different (i.e., lower) from those of the first immigrant generation. For second-generation immigrants, it is assumed that the West German context is more dominant than the country background of the parents, and that the fertility behavior of the second generation does therefore not vary between the different country groups.

H5) Characteristics

First- and second-generation immigrants: Finally, we review the assumption of selection and characteristics. If the first-birth behavior of immigrant women in West Germany is characterized by a relatively early start, the transition rates to a higher parity may be elevated compared to West Germans.

Moreover, the differences in educational attainment may cause differences in fertility levels as well. Mainly (and in contrast to first-child behavior) we assume that higher education increases childbearing intensities (Kreyenfeld [2002] on parity 2, Kravdal [2001, 2007] on parities 2 and 3). Again, our analysis controls for the educational background of the partner and the woman's parents, as well as for cultural background variables. In addition, the sex of the first and second child is considered.

3 Empirical Analysis

3.1 Data, method, and explanatory variables — 3.2 Introductory description of the sample — 3.3 Transition to a first child — 3.4 Transition to a second child — 3.5 Transition to a third child

3.1 Data, method, and explanatory variables

3.1.1 Data

The data used in this study come from the German Socio-Economic Panel (GSOEP, DIW 2006), which has several sub-samples. Foreigners in West Germany are overrepresented in the Sample called B. This sample includes households with a Turkish, Greek, Spanish, former Yugoslavian, or Italian household head. The original sample size was 1393 in 1984. Sample D, called ‘immigrants,’ was started in 1994/95. It includes households in which at least one person has moved from abroad to Germany after 1984. The starting size was 522 households. Sample A, called the ‘West German’ sample, contains households with heads of German nationality. Few of the respondents in sample A have an immigration background. The initial sample size was 4528 households in 1984. In 2002, almost half of the respondents of the initial sample were re-interviewed. Third persons who had moved into and children who had grown up in an existing GSOEP household were added (Haisken-DeNew and Frick 2003).

Since 1984 respondents have been questioned annually. The waves used in our investigation are from 1984 to 2004. The GSOEP also provides retrospective information, such as on childbearing, marriage, immigration, and education. The focus of our study is on women who were born in 1946 to 1983, and who lived in West Germany at any time of the survey. In distinguishing between West Germans on the one hand and immigrants and their children on the other it is not sufficient to use the sub-sample indicator alone, since the possibility of naturalization must also be taken into account. Women in our analysis are, therefore, considered to be West Germans if they were born in Germany and have reported German nationality in each survey year.

Accordingly in our study, the people who are classified as immigrants or as having an immigration background are those who have ever reported having a non-German nationality, and/or who were born abroad (even if a change of citizenship took place later). All respondents of sub-samples A, B, and D who can be defined as being of Turkish, former Yugoslavian (or its successor states in the sample: Croatia, Bosnia-Herzegovina, Macedonia, Slovenia), Greek, Italian, Spanish, or West German origin were included in our analysis.¹³

In total, valid biographic information and birth histories for 5483 women who were born in 1946 to 1983 could be constructed. These are 728 women of the first immigrant generation and 828 women of the second immigrant generation, as well as 3932 West German non-immigrant women. The focus of the analysis is on women during periods when they have not been married or when they were in a first marriage. A record is censored at the end of a first marriage; the periods of time (duration spells) women may have spent in subsequent marriages are excluded from the analysis.

Three transitions among women living in West Germany are analyzed: the entry into motherhood as well as the transitions to a second and a third child. Naturally, first-generation immigrants who gave birth to one or more children before they moved from their home countries cannot be considered for the respective transitions in West Germany. Therefore, three different sub-samples are used for the respective transitions. The sub-sample for the first child contains 5261 women in total who are at risk of a first birth in West Germany: 1369 women with an immigration background (558 women of the first generation, 811 women of the second generation) and 3892 non-immigrant West Germans. First-generation immigrants who gave birth to a first child before immigration or who were pregnant at immigration are excluded from this analysis (170 first-generation immigrants had at least one birth before the move to Germany).

The sub-sample for the second child contains women who gave birth to the first child in West Germany. Naturally, all mothers whose first births were twins are excluded from the sample for the transition to a second child, but included in the third-child estimations (the risk of a third birth being counted from the twin birth). For the first immigrant generation, this entails including in the sub-sample all women who came

¹³ Further Samples of the GSOEP are not relevant for our analysis, such as Sample C that contains East German respondents.

childless to West Germany and who gave birth for the first time in Germany. Women are added whose first pregnancy started before the move and who gave birth in West Germany; therefore, the second-child sample is larger than the number of women in the first-child sample who had the first child in West Germany. Finally, women who experienced only one childbirth before they moved in are included in the analysis of the second-birth risk from this time of in-migration (except that women migrating during their second pregnancy are excluded). Moreover, the birth-risk analysis concentrates on women in their first marriages. Therefore, never-married women were excluded, as were the periods preceding a first marriage and any periods after separation among women whose first marriage ended either by divorce or widowhood. The sub-sample for the second-child risk contains 454 first-generation immigrants in total; among them are 407 who gave birth to their first child in West Germany (47 arrived with one child). Meanwhile, 287 women belong to the second generation, and 1771 West Germans are included in this sample.

The procedure is similar for the transition to a third child: The sub-sample consists of the women who had the second child in West Germany. First-generation immigrants moving to West Germany with two children or during a second pregnancy are included in the sample. Mothers of twins at the second birth are excluded. The sub-sample for the third child consists of 415 women belonging to the first immigrant generation. Among them are 317 women who had their first and second births in West Germany, 40 women who moved with one child and experienced the second birth in West Germany, and 58 first-generation immigrants who arrived with two children. The third-child sample includes 172 second-generation immigrants and 1099 West Germans.

Table 9: Overview of the sub-samples

	First child		Second child		Third child	
	Persons	Events	Persons	Events	Persons	Events
First-generation immigrants	558	389	454	361	415	174
Second-generation immigrants	811	304	287	177	172	57
West Germans	3892	2018	1771	1122	1099	283

Source: Calculations based on GSOEP, 1984–2004.

Note: Events: conceptions (counted as nine months before recorded birth).

Differences between person numbers in sub-samples 2 and 3 and events of previous births are due to missing information; exclusion of twin births as well as of unmarried and separated women; inclusion of immigrants moving during pregnancy.

Age 15 is chosen as a cutoff point for distinguishing between the immigrant generations: immigrants coming to Germany at age 15 and older are considered to be of the first immigrant generation; while women immigrating at age 15 or under, or who were born in Germany to at least one immigrant parent, are defined as second-generation migrants (c.f. Abbasi-Shavazi and McDonald 2002). There are several reasons for using age 15 to distinguish between the migrant generations. First, the basic process time that we use in the analysis — age of the woman — starts with the 15th birthday. Second, a relatively early start of marriage formation in the countries of origin under consideration must be taken into account. Ergöcmen and Eryurt (2004), for example, show that about eight percent of women born in the 1950s were married by age 15 in Turkey (the GSOEP also contains women married before age 18, who are also included in our analysis). Third, compulsory school education in Germany generally ends at about age 15 or 16. Hence, persons immigrating at younger ages are assumed to participate in school education in Germany, and are therefore more exposed to the influence of German socialization than older immigrants, who no longer participate in compulsory education.

Concerning second-generation migrants, the GSOEP does not contain enough information to reconstruct whether both of their parents are immigrants for all respondents. Therefore, the group defined as second-generation migrants includes persons with both one and two immigrant parents. No distinction is drawn between second-generation migrants born in Germany and those who moved during childhood, either. This choice is related to the relatively small size of the sample. Thus, the second-generation group includes both women who moved with their parents during childhood and women who were born in West Germany. Therefore, one may not consider all of these persons to be ‘real’ immigrants in the sense that these women migrated themselves and decided to do so on their own. Nevertheless, the term ‘second-generation (im)migrants’ is used here in order to stress any migration background.

Since the focus of this study is on fertility behavior after immigration, conceptions of first-generation immigrants are taken into account only if they occurred after the move to West Germany. Hence, we excluded cases where a birth took place in the same year as immigration as well. The underlying assumption is that these pregnancies may be correlated with the anticipation of the move.

3.1.2 Method

This study analyzes the transitions to a first, second, and third conception leading to a live birth. The first statistical tool used to describe the patterns are Kaplan-Meier survival estimates. These calculations give an estimate of the share of women who have a child of the respective parity, and of how quickly they do so (after any previous birth). A crucial indicator here is the median age at the respective birth. Therefore, this tool can be used even when not all women of the study population have reached an age when childbearing can be assumed to be finished (e.g., Kreyenfeld 2002).

Second, piecewise-linear intensity regression models are estimated as a form of indirect standardization, as suggested by Hoem (1987; c.f. Hoem 1993, Blossfeldt and Rohwer 1995, Andersson 2004). Monthly information on births, available for births since January 1983, is used. For births occurring before 1983, only yearly data are available. As usual in demography, we impute such births to have occurred in mid-June. In order to calculate the time at the corresponding conception, the birth is backdated by nine months. Concerning the date at immigration of first-generation migrants, monthly information is used. If this is not available, we have imputed that the immigration took place in January of the year reported (this choice was made in order to minimize the number of first-generation cases where a move possibly took place during pregnancy).

The model can be formalized as follows:

$$\ln \mu_i(t) = y(t) + \sum_k Z_k(t - u_{ijk}) + \sum_l \alpha_l x_{ijl} + \sum_m \beta_m w_{ijm}(t) ,$$

where $\mu_{ij}(t)$ denotes the hazard of a pregnancy leading to a j th birth for individual i at process time t and $y(t)$ represents the baseline log-hazard. The process time for the transition to a first conception is the time since the woman turned 15. For the transition to a second conception, the process time is the number of months since the first birth (age of the first child). Correspondingly, the process time for the transition to a third conception is the number of months since the second birth. Note that first-generation immigrants contribute to the exposure only from the time of arrival in West Germany.

The end of the respective process time (censoring) is either at the conception of the next order, at a dissolution of the first marital union of the woman, or at the last interview when neither conception nor union dissolution are reported. Return migrants or second-generation migrants who moved abroad are censored when they leave the survey. Thus, return and out-migrants contribute to the analysis during the time they lived in West Germany.

The function $z_k(t-u_{ijk})$ is a linear-spline representation of the impact of a continuously time-varying covariate with the origin u_{ijk} (such as the duration of stay in West Germany for first conceptions to first-generation immigrants and the duration of marriage). The term $w_{ijm}(t)$ represents the effect of a time-varying variable (such as employment). The term x_{ijl} denotes the effect of a time-constant covariate (immigrant generation, country of origin, marital status at migration, birth cohort, educational attainment).

The piecewise-linear spline specification is used in order to account for the log-hazard and the effect of (other) variables that change on a continuous time scale. In contrast to the widespread piecewise-constant approach, the piecewise-linear model specification uses slopes as parameter estimates instead of user-defined time periods. A piecewise-linear specification using a sufficient number of nodes (bend points) can efficiently capture any log-hazard pattern in the data (Kulu 2005, Boyle *et al.* 2008).

The preparation of the data and the exploratory analyses were carried out in Stata. It mainly follows the example of Kreyenfeld (2001b), but pays special attention to the reconstruction of the immigration background. In order to combine the retrospective and panel data for marital status and the employment history, two modules are applied that are provided by Walke and Kreyenfeld (2006a, b), called *Spellsort* and *Spelljoin*. The intensity regression models have been estimated in the program *aML* (Lillard and Panis 2003). This program allows for the accounting of different entry times of persons to the basic process, for example, and to the representation of time-varying covariates as piecewise-linear splines.

3.1.3 Explanatory variables

Covariates for the transition to a first child

There are three groups of covariates:

- Socio-demographic characteristics for each woman in the sample,
- Socio-demographic indicators for the spouse of married women only, and
- Information on the immigration background which applies, by definition, to immigrant women only.

The covariates capturing migrant-specific characteristics are as follows: migrant generation, country of origin (for immigrants derived from ever-reported non-German citizenship), and time since arrival for the first generation. First-generation immigrants start becoming at risk of a first conception from the date of their arrival in West Germany (the mean age at immigration is about 20 years), while second-generation immigrants and West German women are at risk from age 15 onwards.

In our analysis, only women who were unmarried or were married for the first time at a first birth or at censoring are considered. The number of women who were married more than once before they had a first conception is negligible. They are included with their first marriage in the analysis. Also, the share of immigrant women living in non-marital unions is negligible. Less than six percent of first-generation immigrants were not married at the time of censoring, and there is no unmarried mother among the first-generation immigrants in our sample (one percent of the mothers of the second migrant generation are not married, compared to 3.4 percent of West German mothers). The vast majority of first-generation immigrants, even in the youngest cohorts of the sample, were married at censoring, whereas the shares of unmarried women are lower among the second generation and West Germans. This may be an indicator for a selection towards family migration of the first generation.

Of the first-generation immigrant women in the sample of the first birth, the core sample of our analysis, 65.7 percent of the married women have a spouse of the first immigrant generation, 21.7 percent were married to a man of the second immigrant generation, and 3.4 percent were married to a German at censoring (9.1 percent of the women have missing information on the partner's immigration background).

The marital status and marriage situation at the time of migration is reconstructed for the first-generation immigrants; this variable is called ‘migration process’. The first category of this variable contains women who were married before moving to West Germany, and who migrated with the partner in the same year (5.2 percent of all first-generation immigrants in the first-birth sub-sample). To fit into this category, both partners must have settled in West Germany at the same time. The second category encompasses first-generation immigrants who were married before the move, but who immigrated at a different time (i.e., earlier or later) than the partner (43.9 percent in the first-birth sub-sample); it also includes women married before migration or in the same year, but whose spouse is a West German or second-generation immigrant to West Germany (36.4 percent). The women in this category share the experience of spatial separation from the spouse, but in most of the cases the husband had already settled in Germany when his wife migrated. Finally, a category of women is distinguished who were not married at the time of the move (5.9 percent; a last category is for women without information on the spouse). In this manner, different forms and phases of migration, as introduced in the immigration overview, are accounted for.

It is possible to identify the partner(s) of each woman, both in marriage and in non-marital cohabitation, because the GSOEP contains information on the household to which she belongs since 1983. Our final analysis, however, includes the partner’s information only for married couples. Although the share of married women in the second immigrant generation is only about 50 percent in the sample, this is considered sufficient because non-marital births are an exception among these women. Since the panel data containing information on the household the woman belongs to is, however, available only since 1983, our procedure was as follows: a woman married only once is related for the whole duration of the marriage (i.e., also before 1983) to the partner she was sharing a household with during the time of the panel. By contrast, a woman who was divorced or widowed before the time of the panel (i.e., before 1983) cannot be linked to her first spouse (i.e., the covariates capturing information on the spouse have missing values).

As an indicator of the socio-economic background, the school degree of the woman, is used. Several school-degree categories are constructed. ‘First degree’ designates completion of *Hauptschule* (nine years of schooling) or *Realschule* (ten years

of schooling) in Germany, or of the completed level of compulsory school education in the respective country of origin. ‘Second degree’ refers to completion of the German *Abitur* or *Fachabitur*, or the equivalent secondary education abroad (a certificate qualifying for entry into college or university). A third category encompasses schooling that cannot be summed up under the previous two categories, but will be combined with first degree in the analysis since the number of the respondents here is very small. The fourth category captures respondents who did not receive any school degree or have never attended school. Finally, there is a very small category for women who were still in school education at censoring. We decided to focus on school-leaving certificates instead of completed apprenticeship or tertiary education (university) because this seems to be more appropriate to the sample. The first-generation immigrants had left school before their move. About 24.2 percent ($n=135$) of the first-generation immigrants in the first-birth sub-sample did not complete school with any degree, compared to 11.8 percent of the women of the second generation ($n=96$) (2.7 percent among West Germans, $n=104$). Some 18.1 percent of the women of the first immigrant generation, and 15.4 percent of the second generation, completed secondary school education (compared to every fourth West German woman).

Moreover, the employment status of the women is reconstructed as a time-varying covariate. Its categories are ‘full-time employment,’ ‘part-time employment,’ ‘non-employed,’ and ‘in education.’ The latter category captures, for example, apprenticeships as well as tertiary education, and only refers to women who have finished school. For the periods of time when a woman is in a marriage, the employment situation of the husband is also reconstructed. The variable is comprised of the same categories as the woman’s employment status.

When information on the spouse is available, the partner’s educational attainment and employment information are included in the analysis for all the married women, and the partner’s country of origin is included in the analysis for immigrant women. For the latter variable, the distinction is drawn between spouses coming from the same country as the woman (77.5% of all married immigrant women in the first-birth sub-sample), spouses from a different country (3.5%), and West German partners (5.5%; missing percentage are due to missing information on spouse’s origin).

Moreover, the analysis controls for birth cohort in order to capture possible period effects. The four categories of this variable are as follows: ‘1946–1959,’ ‘1960–1969,’ ‘1970–1979,’ and ‘1980+.’ These categories are based on the phases of labor immigration to West Germany and the developments in fertility rates in West Germany, mainly the baby boom in the 1960s and its end at the beginning of the 1970s.

Three variables refer to the socio-cultural background of the women in the sample. The type of the place where the respondent lived at age 15 has the following categories: ‘large city,’ ‘medium city,’ ‘small town,’ and ‘rural area.’ Previous studies show remarkable fertility differentials by municipality type; controlling for this factor greatly reduced fertility differentials between immigrants and non-migrants (e.g., Rumbaut and Weeks 1986).

Religion is captured by the affiliation: ‘Roman Catholic,’ ‘Protestant’ (mainly Lutheran), ‘Greek Orthodox or other Christian affiliation,’ ‘other religion’ (mainly Muslim), and ‘no affiliation.’ The GSOEP asked about the religious affiliation in three waves; in the years 1990, 1997, and 2003. In order to account for changes in the religious affiliation, this variable is constructed as time-varying, assuming that the change took place in the middle between the respective waves. The procedure is similar for the variable that refers to religiosity. The GSOEP asked about the importance of religion three times (1994, 1998, and 1999). The original five groups are combined to two: ‘(very) important’ and ‘less/not important.’ Again, the variable takes into account changes by time. As to religious affiliation, previous studies systematically show a higher fertility of women of Muslim affiliation than for other religions. This coincides with relatively low educational level, low labor-force participation, high in-marriage, and universality of marriage (Abbasi-Shavazi and McDonald 2000, Andersson 2004).

Furthermore, information on the parental backgrounds of the women is taken into account, including school education. For both her mother and father, distinctions are made between having completed basic school education with a degree, and not having obtained any degree or not having attended school at all.

For sample statistics, see Table 10. Note: Missing values appear as ‘n.a.’ in the tables; this represents both ‘no answer’ and ‘not applicable’ (as in the case of immigrant-specific covariates).

Table 10: Sample statistics: Transition to a first child — person-months (exposures) and first conceptions (occurrences)

Variable	First-generation Immigrants			Second-generation immigrants			West Germans		
	Exposures	Exp. in %	Occ.	Exposures	Exp. in %	Occ.	Exposures	Exp. in %	Occ.
	31,240.5		389	74,870.0		304	514,199.0		2018
<u>Women's characteristics</u>									
<i>Country of origin</i>							n.a.		
Turkey	11,186.5	35.8	168	27,546.0	36.8	139			
Yugoslavia	8608.5	27.6	86	12,454.0	16.6	34			
Greece	3907.0	12.5	37	12,768.0	17.1	37			
Italy	4427.5	14.2	64	15,678.0	20.9	67			
Spain	3111.0	10.0	34	6424.0	8.6	27			
<i>Birth cohort</i>									
1946–59	21,452.5	68.7	230	7847.0	10.5	47	193,807.0	37.7	972
1960–69	6900.5	22.1	97	33,458.0	44.7	162	202,937.0	39.5	753
1970–79	2761.5	8.8	58	29,115.0	38.9	87	100,846.0	19.6	271
1980+	126.0	0.4	4	4450.0	5.9	8	16,609.0	3.2	22
<i>School education</i>									
No degree	8131.0	26.0	82	6473.0	8.6	28	7507.0	1.5	20
First or other degree	17,105.0	54.8	234	50,705.0	67.7	234	340,776.0	66.3	1601
Second degree	5752.0	18.4	64	16,153.0	21.6	35	158,863.0	30.9	379
In school education	84.0	0.3	1	728.0	1.0	1	2501.0	0.5	3
N.A.	168.5	0.5	8	811.0	1.1	6	4552.0	0.9	15
<i>Employment^a</i>									
Full-time	13,276.0	42.5	119	22,638.0	30.2	143	209,639.0	40.8	1062
Part-time	1271.0	4.1	11	2795.0	3.7	11	22,001.0	4.3	101
Non-employed	13,089.5	41.9	226	10,093.0	13.5	122	44,705.0	8.7	481
In education or training	1643.0	5.3	3	31,633.0	42.3	16	182,574.0	35.5	137
N.A.	1961.0	6.3	30	7711.0	10.3	12	55,280.0	10.8	237
<i>Marital status^a</i>									
Unmarried	19,594.5	62.7	49	65,188.0	87.1	71	435,262.0	84.6	710
Married	11,646.0	37.3	340	9682.0	12.9	233	78,937.0	15.4	1308
<u>Spouse's characteristics</u>									
<i>Spouse's school education</i>									
No degree	4927.5	15.8	60	2323.0	3.1	24	1779.0	0.3	12
First or other degree	15,607.0	50.0	232	22,039.0	29.4	183	171,505.0	33.4	1056
Second degree	4688.5	15.0	59	7300.0	9.8	57	97,471.0	19.0	427
N.A.	3579.5	11.5	38	8994.0	12.0	32	73,111.0	14.2	390
Never married	2438.0	7.8	0	34,214.0	45.7	8	170,333.0	33.1	133
<i>Spouse's employment^a</i>									
Full-time	9388.5	30.1	280	5439.0	7.3	164	50,298.0	9.8	900
Part-time	165.0	0.5	4	322.0	0.4	6	968.0	0.2	9
Unemployed	523.5	1.7	13	1091.0	1.5	27	2926.0	0.6	34
In education or training	320.0	1.0	10	672.0	0.9	8	3780.0	0.7	76
N.A.	1249.0	4.0	33	2158.0	2.9	28	20,965.0	4.1	289
Not married	19,594.5	62.7	49	65,188.0	87.1	71	435,262.0	84.6	710

Table 10: (Cont.)

Variable	First-generation Immigrants			Second-generation immigrants			West Germans		
	Exposures	Exp. in %	Occ.	Exposures	Exp. in %	Occ.	Exposures	Exp. in %	Occ.
<i>Spouses' origins</i>									
She migrant, he German	1460.0	4.7	13	5225.0	7.0	25	n.a.		
Both migrants, from same Country	23,525.5	75.3	333	26,369.0	35.2	232	n.a.		
Both migrants, from different countries	1028.0	3.3	9	2156.0	2.9	17	n.a.		
She German/he migrant	n.a.			n.a.			20,709.0	4.0	112
Both German	n.a.			n.a.			262,295.0	51.0	1429
Partner, n.a.	2789.0	8.9	34	6906.0	9.2	22	60,862.0	11.8	344
Never married	2438.0	7.8	0	34,214.0	45.7	8	170,333.0	33.1	133
<i>Migration process</i>									
Married, spouses migrated together	1429.5	4.6	23	n.a.			n.a.		
Married, spouses migrated separately	5919.0	18.9	216						
Unmarried at migration	21,103.0	67.6	116						
Partner, n.a.	2789.0	8.9	34						
<u>Women's socio-cultural background</u>									
<i>Place where woman lived at age 15</i>									
Large city	4015.0	12.9	88	12,663.0	16.9	57	103,051.0	20.0	410
Medium city	3505.0	11.2	54	9357.0	12.5	50	77,080.0	15.0	309
Small town	4784.0	15.3	104	13,679.0	18.3	75	95,835.0	18.6	404
Rural area	6765.5	21.7	127	9201.0	12.3	46	152,001.0	29.6	739
N.A.	12,171.0	39.0	16	29,970.0	40.0	76	86,232.0	16.8	156
<i>Mother's school education</i>									
School degree	8161.5	26.1	106	30,904.0	41.3	104	448,399.0	87.2	1806
No school or no degree	11,121.5	35.6	213	37,584.0	50.2	158	3149.0	0.6	9
N.A.	11,957.5	38.3	70	6382.0	8.5	42	62,651.0	12.2	203
<i>Father's school education</i>									
School degree	10,016.0	32.1	152	42,876.0	57.3	163	439,895.0	85.5	1769
No school or no degree	8169.5	26.2	164	25,223.0	33.7	102	3308.0	0.6	10
N.A.	13,055.0	41.8	73	6771.0	9.0	39	70,996.0	13.8	239
<i>Religious affiliation</i> ^a									
Catholic	5687.5	18.2	99	20,337.0	27.2	86	172,803.0	33.6	779
Protestant	139.0	0.4	3	766.0	1.0	3	172,112.0	33.5	750
Greek or other Christian	3603.0	11.5	58	11,892.0	15.9	41	6749.0	1.3	35
Other religion	6200.0	19.8	134	20,903.0	27.9	115	856.0	0.2	7
No affiliation	1323.0	4.2	16	2724.0	3.6	10	50,856.0	9.9	161
N.A.	14,288.0	45.7	79	18,248.0	24.4	49	110,823.0	21.6	286
<i>Importance of religion</i> ^a									
(Very) important	9561.5	30.6	199	31,397.0	41.9	162	130,216.0	25.3	640
Less or not important	3934.5	12.6	65	17,458.0	23.3	67	217,179.0	42.2	896
N.A.	17,744.5	56.8	125	26,015.0	34.7	75	166,804.0	32.4	482

Source: Calculations based on GSOEP, 1984–2004; event: first conception.

^a — Time-varying covariate.

Covariates for the transition to a second child

The sample for the second child also includes the first-generation immigrants who moved to West Germany with one child. These women are called ‘move after first birth abroad.’ Excluded from this analysis, as well as from the transition to a third child, are unmarried one-child mothers. Regardless of whether these women were never married, got divorced, or were widowed, the number of cases is negligible, and these respondents would constitute a very distinct group. The analysis uses the same covariates as for the first child (except religiosity). In addition, the indicator of the age of the mother at the first birth is used: ‘younger than 20 years,’ ‘20–24 years,’ ‘25–29 years,’ ‘30–34 years,’ and ‘35+ years.’ In addition, the analysis controls for the sex of the first child (for sample statistics, see Table 11).

Covariates for the transition to a third child

The analysis uses the same covariates as for the second child. Regarding the first-generation immigrants, the following two groups are distinguished: The first group consists of the women who delivered the first child in West Germany and of women who moved after having the first birth in their country of origin; these women had the second child in West Germany. The second group includes the women who arrived with two children in West Germany. The age of the mother at the previous birth refers to parity 2. The analyses also control for the sex of the first two children, but do not include employment spells since the case and event numbers are too small for time-varying covariates (for sample statistics, see Table 12).

Table 11: Sample statistics: Transition to a second child — person-months (exposures) and first conceptions (occurrences)

Variable	First-generation immigrants			Second-generation immigrants			West Germans		
	Exposures	Exp. in %	Occ.	Exposures	Exp. in %	Occ.	Exposures	Exp. in %	Occ.
Total	22,111.2		361	12,331.0		177	101,130.0		1122
<i>First birth in Germany</i>	20,362.2	92.1	321	n.a.			n.a.		
<i>Move after first birth</i>									
<i>Abroad</i>	1749.0	7.9	40	n.a.			n.a.		
<u>Women's characteristics</u>									
<i>Country of origin</i>							n.a.		
Turkey	7931.5	35.9	156	5639.0	45.7	80			
Yugoslavia	6202.5	28.1	86	1198.0	9.7	13			
Greece	1809.0	8.2	35	1502.0	12.2	20			
Italy	4060.2	18.4	60	2888.0	23.4	45			
Spain	2108.0	9.5	24	1104.0	9.0	19			
<i>Birth cohort</i>									
1946–59	14,546.5	65.8	237	2143.0	17.4	35	63,271.0	62.6	615
1960–69	4841.8	21.9	83	7304.0	59.2	100	31,741.0	31.4	408
1970+	2722.8	12.3	41	2884.0	23.4	42	6118.0	6.0	99
<i>School education</i>									
No degree	5578.7	25.2	107	2753.0	22.3	36	694.0	0.7	12
First or other degree	13,240.4	59.9	200	8605.0	69.8	129	86,762.0	85.8	919
Second degree	2735.0	12.4	46	812.0	6.6	8	13,251.0	13.1	185
N.A.	557.2	3.4	8	161.0	1.3	4	423.0	0.4	6
<i>Employment</i> ^a									
Full-time	6901.0	31.2	91	3508.0	28.4	43	17,720.0	17.5	114
Part-time	1398.0	6.3	22	1229.0	10.0	13	18,745.0	18.5	145
Non-employed	12,789.2	57.8	231	7038.0	57.1	117	58,534.0	57.9	809
In education or training	84.0	0.4	2	81.0	0.7	0	721.0	0.7	5
N.A.	939.0	4.2	15	475.0	3.9	4	5410.0	5.3	49
<i>Age at first birth in years</i>									
<20	4089.8	18.5	90	2268.0	18.4	46	12,059.0	11.9	142
20–24	12,159.2	55.0	206	6198.0	50.3	90	37,222.0	36.8	429
25–29	4025.2	18.2	59	3199.0	25.9	36	37,260.0	36.8	415
30–34	1561.0	7.1	4	631.0	5.1	4	11,104.0	11.0	127
35+	276.0	1.2	2	35.0	0.3	1	3485.0	3.4	9
<u>Spouse's characteristics</u>									
<i>Spouse's school education</i>									
No degree	3476.7	15.7	58	749.0	6.1	16	776.0	0.8	6
First or other degree	13,205.7	59.7	223	8410.0	68.2	122	63,058.0	62.4	661
Second degree	3634.7	16.4	59	2085.0	16.9	32	18,683.0	18.5	269
N.A.	1794.2	8.1	21	1087.0	8.8	7	18,613.0	18.4	186
<i>Spouse's employment</i> ^a									
Full-time	18,582.9	84.0	313	9229.0	74.8	146	73,874.0	73.0	836
Part-time	144.0	0.7	3	208.0	1.7	1	685.0	0.7	12
Non-employed	970.2	4.4	16	1287.0	10.4	21	3737.0	3.7	33
In education or training	379.2	1.7	3	186.0	1.5	1	2133.0	2.1	33
N.A.	2035.0	9.2	26	1421.0	11.5	8	20,701.0	20.5	208

Table 11: (Cont.)

Variable	First-generation immigrants			Second-generation Immigrants			West Germans		
	Exposures	Exp. in %	Occ.	Exposures	Exp. in %	Occ.	Exposures	Exp. in %	Occ.
<u>Migration background</u>									
<i>Spouses' origins</i>									
She migrant, he German	991.0	4.5	7	1147.0	9.3	9	n.a.		
Both migrants, from same Country	19,056.2	86.2	326	9794.0	79.4	157	n.a.		
Both migrants, from different countries	410.0	1.9	7	451.0	3.7	6	n.a.		
She German/he migrant	n.a.			n.a.			5032.0	5.0	63
Both German	n.a.			n.a.			78,920.0	78.0	890
Partner, n.a.	1654.0	7.5	21	939.0	7.6	5	17,178.0	17.0	169
<i>Migration process</i>				n.a.			n.a.		
Married, spouses migrated together	2155.2	9.7	28						
Married, spouses migrated separately	11,961.0	54.1	228						
Unmarried at migration	6341.0	28.7	84						
Partner, n.a.	1654.0	7.5	21						
<u>Women's socio-cultural background</u>									
<i>Place where woman lived at age 15</i>									
Large city	4363.3	19.7	76	2209.0	17.9	36	22,545.0	22.3	214
Medium city	2797.8	12.7	48	1965.0	15.9	30	16,329.0	16.1	168
Small town	6802.8	30.8	99	3494.0	28.3	43	21,057.0	20.8	227
Rural area	7148.2	32.3	129	2067.0	16.8	27	36,957.0	36.5	450
N.A.	999.0	4.5	9	2596.0	21.1	41	4242.0	4.2	63
<i>Mother's school education</i>									
School degree	6328.0	28.6	87	4541.0	36.8	54	90,460.0	89.4	1026
No school or no degree	11,729.2	53.0	214	5921.0	48.0	95	314.0	0.3	7
N.A.	4054.0	18.3	60	1869.0	15.2	28	10,356.0	10.2	89
<i>Father's school education</i>									
School degree	8686.2	39.3	128	6372.0	51.7	90	88,782.0	87.8	1008
No school or no degree	9376.2	42.4	171	4411.0	35.8	63	714.0	0.7	4
N.A.	4048.8	18.3	62	1548.0	12.6	24	11,634.0	11.5	110
<i>Religious affiliation</i> ^a									
Catholic	7130.5	32.2	88	3528.0	28.6	54	38,794.0	38.4	483
Protestant	369.0	1.7	2	204.0	1.7	1	37,205.0	36.8	427
Greek or other Christian	3489.0	15.8	60	1861.0	15.1	22	2329.0	2.3	20
Other religion	6419.4	29.0	132	4747.0	38.5	71	245.0	0.2	3
No affiliation	1076.0	4.9	12	313.0	2.5	9	9688.0	9.6	63
N.A.	3627.3	16.4	67	1678.0	13.6	20	12,869.0	12.7	126
<i>Sex of first child</i>									
Boy	10,732.0	48.5	171	7316.0	59.3	96	49,776.0	49.2	570
Girl	11,316.2	51.2	189	5015.0	40.7	81	51,274.0	50.7	551
N.A.	63.0	0.3	1	0.0			80.0	0.1	1

Source: Calculations based on GSOEP, 1984–2004; event: second conception.

^a — Time-varying covariate.

Table 12: Sample statistics: Transition to a third child — person-months (exposures) and first conceptions (occurrences)

Variable	First-generation immigrants			Second-generation immigrants			West Germans		
	Exposures	Exp. in %	Occ.	Exposures	Exp. in %	Occ.	Exposures	Exp. in %	Occ.
Total	41,946.5		174	11328		57	111,420.5		283
<i>Second birth in Germany (total)</i>	36,153.0	86.2	149						
First birth in Germany	31,660.5	75.5	131						
Move after first birth	4492.5	10.7	18						
<i>Move after second birth abroad</i>	5789.5	13.8	24						
<u>Women's characteristics</u>									
<i>Country of origin</i>							n.a.		
Turkey	11,901.0	28.4	100	3866.5	34.1	30			
Yugoslavia	15,179.5	36.2	25	797.5	7.0	6			
Greece	5276.0	12.6	15	1801.0	15.9	4			
Italy	6647.0	15.8	27	3163.0	27.9	13			
Spain	2943.0	7.0	7	1699.5	15.0	4			
<i>Birth cohort</i>									
1946–59	34,323.0	81.8	123	3772.5	33.3	11	83,943.5	75.3	168
1960–69	5809.0	13.8	37	6024.0	53.2	33	24,748.0	22.2	99
1970+	1814.5	4.3	14	1531.0	13.5	13	2729.0	2.4	16
<i>School education</i>									
No degree	12,998.5	31.0	65	2498.5	22.1	11	729.0	0.7	6
First or other degree	22,713.5	54.1	89	8419.0	74.3	42	97,066.0	87.1	231
Second degree	4985.0	11.9	14	371.0	3.3	2	13,321.5	12.0	45
N.A.	1249.5	3.0	6	39.0	0.3	2	304.0	0.3	1
<i>Age at second birth in years</i>									
<25	18,505.5	44.1	105	5249.5	46.3	40	28,984.0	26.0	105
25–29	17,374.5	41.4	59	4361.0	38.5	17	51,550.5	46.3	113
30+	6066.5	14.5	10	1717.0	15.2	0	30,886.0	27.7	65
<u>Spouse's characteristic</u>									
<i>Spouse's school education</i>									
No degree	5140.5	12.3	33	1189.0	10.5	4	376.5	0.3	3
First or other degree	28,552.5	68.1	104	8001.0	70.6	37	72,338.0	64.9	158
Second degree	5784.5	13.8	22	1801.5	15.9	14	23,791.5	21.4	75
N.A.	2469.0	5.9	15	336.0	3.0	2	14,914.5	13.4	47
<u>Migration background</u>									
<i>Spouses' origins</i>									
She migrant, he German	816.5	1.9	1	427.0	3.8	3	n.a.		
Both migrants, from same Country	38,002.0	90.6	158	9968.5	88.0	50	n.a.		
Both migrants, from different countries	809.0	1.9	2	688.0	6.1	2	n.a.		
She German/he migrant	n.a.			n.a.			4937.0	4.4	17
Both German	n.a.			n.a.			92,782.5	83.3	223
Partner, n.a.	2319.0	5.5	13	244.0	2.2	2	13,701.0	12.3	43

Table 12: (Cont.)

Variable	First-generation Immigrants			Second-generation immigrants			West Germans		
	Exposures	Exp. in %	Occ.	Exposures	Exp. in %	Occ.	Exposures	Exp. in %	Occ.
<i>Migration process</i>				n.a.			n.a.		
Married, spouses migrated together	5747.5	13.7	9						
Married, spouses migrated separately	24,740.0	59.0	120						
Unmarried at migration	9140.0	21.8	32						
Partner, n.a.	2319.0	5.5	13						
<u>Women's socio-cultural background</u>									
<i>Place where woman lived at age 15</i>									
Large city	5821.0	13.9	41	1958.0	17.3	12	19,977.5	17.9	57
Medium city	5516.0	13.2	19	2648.0	23.4	5	17,690.5	15.9	37
Small town	12,385.0	29.5	50	2959.5	26.1	14	23,747.5	21.3	62
Rural area	17,629.5	42.0	62	2185.0	19.3	10	48,049.0	43.1	115
N.A.	595.0	1.4	2	1577.0	13.9	16	1956.0	1.8	12
<i>Mother's school education</i>									
School degree	11,552.5	27.5	34	3458.0	30.5	14	103,542.5	92.9	263
No school or no degree	25,754.5	61.4	113	6393.0	56.4	32	615.0	0.6	0
N.A.	4639.5	11.1	27	1476.5	13.0	11	7263.0	6.5	20
<i>Father's school education</i>									
School degree	15,699.5	37.4	51	5203.0	45.9	28	101,701.0	91.3	255
No school or no degree	20,931.0	49.9	92	4844.0	42.8	20	506.0	0.5	1
N.A.	5316.0	12.7	31	1280.5	11.3	9	9213.5	8.3	27
<i>Religious affiliation^a</i>									
Catholic	15,498.0	36.9	38	4854.5	42.9	13	49,174.5	44.1	134
Protestant	173.0	0.4	1	209.0	1.8	0	44,075.5	39.6	113
Greek or other Christian	8001.0	19.1	21	1971.0	17.4	5	2228.5	2.0	5
Other religion	11,767.0	28.1	80	3371.0	29.8	32	141.5	0.1	1
No affiliation	1879.0	4.5	6	259.0	2.3	1	7391.0	6.6	9
N.A.	4628.5	11.0	28	663.0	5.9	6	8409.5	7.5	21
<i>Sex of first and second child</i>									
2 boys	9381.5	22.4	55	2768.0	24.4	16	28,262.0	25.4	81
2 girls	9673.0	23.1	50	2460.5	21.7	21	25,989.0	23.3	70
Boy + girl	22,831.0	54.4	69	6099.0	53.8	20	57,141.5	51.3	132
N.A.	61.0	0.1	0	0.0			28.0	0.0	0

Source: Calculations based on GSOEP, 1984–2004; event: third conception.

^a — Time-varying covariate.

The GSOEP contains, of course, more variables that would be of interest for the research question of our study. It may, for example, be possible to imagine indicators for whether an immigrant woman has ever been gainfully employed in her life, or whether she has a command of the German language. However, the variables under consideration would have caused problems for our analysis. Either the respective question was asked of one of the sub-groups only, or the response rates turned out to be too low for the sample drawn here. Another problem is that some of the variables of possible interest are not asked in each survey year. Since the respective covariate may have changed in time, it is not possible to correctly estimate its impact on childbearing (anticipatory analysis, c.f. Hoem and Kreyenfeld 2006a, b).

3.2 Introductory description of the sample

Before we turn to the analyses of the first three parities, this chapter gives an introductory description of the sample. Since it is hypothesized that immigrant women in West Germany are a selected group regarding family migration, the chapter begins with information about first marriages. A brief look at the completed family size follows.

3.2.1 Marriage

Table 13 displays the share of women in the sample who were unmarried at censoring. Note that, for first-generation immigrants, no distinction is made between women who were, and who were not, already married at the time of the move (this will be specified in the following chapters). Nevertheless, the overview shows that first-generation immigrants in the sample have, overall, a very high share of women ever married. Almost all women (98 percent) of the Spanish first generation are married at censoring, and the lowest share is seen among women of Greek background (94 percent). When comparing first-generation migrants by their motherhood status at the time of the move, it is apparent that women with at least one child are also the ones most likely to be married. This reflects the strong association between marriage and childbearing, the relatively high levels of marriage in general in the respective countries of origin, and probably also the legal conditions for international migration. By contrast, 36 percent of the West German women in the sample had not (yet) been married at censoring.

The share of unmarried women is higher among the second migrant generation. This, however, is related to the relatively young birth cohorts of this group. Table 14 shows that the highest shares of never- or not-yet-married women are to be found in the younger cohorts. When comparing the share of married women of the second generation to that of the first immigrant generation in the respective birth cohorts, the levels are lower for the descendants of migrants, and resemble approximately the marriage shares of West Germans.

Table 13: Share of women unmarried at censoring, per country of origin — %

	Turkey	Yugoslavia	Greece	Italy	Spain	West Germany
						36.0
<i>First-generation immigrants</i>						
Total	3.9	5.9	6.2	5.5	2.0	
Childless at move	5.0	8.3	7.6	5.6	2.2	
1+ child at move	0.0	0.0	0.0	5.0	0.0	
<i>Second-generation immigrants</i>	41.8	68.3	56.9	43.0	53.5	

Source: Calculations based on GSOEP, 1984–2004.

Table 14: Share of women unmarried at censoring, in respective birth cohort — %

	Total	1946–59	1960–69	1970–79	1980+
<i>First-generation immigrants</i>					
Total	4.7	0.9	12.15	9.2	0.0
Childless at move	5.9	0.9	14.1	10.0	0.0
1+ child at move	0.6	0.8	0.0	0.0	0.0
<i>Second-generation immigrants</i>	49.5	14.3	40.2	60.0	84.6
<i>West Germans</i>	36.0	10.1	36.8	62.2	92.1

Source: Calculations based on GSOEP, 1984–2004.

Table 15: Mean age at first marriage, in respective birth cohort — years

	Total	1946–59	1960–69	1970–79	1980+
<i>First-generation immigrants</i>					
Total	21.8	22.6	20.6	20.0	18.6
Childless at move	22.6	24.0	20.7	20.1	18.4
1+ child at move	19.3	19.2	19.8	19.1	19.7
<i>Second-generation immigrants</i>	21.4	21.6	21.6	21.3	19.8
<i>West Germans</i>	24.3	23.5	25.2	24.5	21.2

Source: Calculations based on GSOEP, 1984–2004.

The differences in the shares of married women are accompanied by differences in the mean ages at first marriage. Except for the cohorts born before 1960, first-generation immigrants were the youngest at marriage, and West Germans the oldest; while the mean age at first marriage among the second generation lies in between (see Table 15).

Table 16 gives an overview of the mean age at marriage for the respective countries of origin. The pattern of age differences between first-generation immigrants is repeated in the second generation: women of Turkish background marry the earliest, whereas Greeks and Spaniards marry the latest. The only exception are second-generation migrants of Spanish descent, who marry earlier than women of the first immigrant generation.

Table 16: Mean age at first marriage, per country of origin — years

	Turkey	Yugoslavia	Greece	Italy	Spain	West Germany
						24.3
<i>First-generation immigrants</i>						
Total	20.9	22.3	22.7	22.0	24.3	
Childless at move	21.5	23.4	23.3	22.6	24.8	
1+ child at move	18.6	19.8	20.4	19.2	19.9	
<i>Second-generation immigrants</i>	20.6	22.0	22.5	22.1	21.8	

Source: Calculations based on GSOEP, 1984–2004.

3.2.2 Completed family size

More than half of the women in the sample drawn for this analysis can still be considered within their reproductive life span, i.e., they had not yet reached age 40 by censoring in 2002. In general, fertility studies use age 40 in estimating a woman's completed number of children (c.f., Kreyenfeld 2001a). At censoring, 27.2 percent of the whole sample had reached age 40 (n=1475) when we include the whole first immigrant generation. When only those women of the first immigrant generation who were childless at the move are taken into account, this share is 26.2 percent (n=1377). Among the total first-generation group, 39.5 percent had reached age 40 at censoring,

33.3 percent of those first-generation immigrants who were childless at move, 4.4 percent of the second-generation migrants, and 29.7 percent of the West Germans.

Since the sample is relatively young and small, age 35 may be used in order to get an approximate overview of the total number of children born to each woman. At censoring, 42.5 percent of the sample had reached age 35 ($n=2302$). When only those women of the first immigrant generation who were childless at the move are taken into account, this share is 41.4 percent ($n=2178$). Among the total first immigrant generation, 57.8 percent had reached age 35 at censoring, compared to 52.1 percent of the first generation who were childless at the time of the move, 14.4 percent of the second generation, and 45.5 percent of the West Germans in the sample.

Table 17 shows a dominance of the two-child family among immigrant women and West Germans, alike. About 40 percent of the women have two children at age 35. Whereas the share of women with no children or only one child is smaller among immigrants than among West Germans, migrants are more likely to have more than two children. The share of women who have three and more children is highest (57 percent) among those who moved to West Germany when they had already at least one child.

Table 17: Completed number of children — %

	0	1	2	3+
<u>At age 35</u>				
<i>First-generation immigrants</i>				
Total	11.6	10.4	38.6	39.5
Childless at move	16.5	12.7	38.5	32.3
1+ child at move	n.a.	4.8	38.7	56.5
<i>Second generation</i>	8.6	22.2	42.7	26.5
<i>West Germans</i>	17.9	24.7	39.0	18.5
<u>At age 40</u>				
<i>First generation</i>				
Total	6.7	8.8	43.0	41.6
Childless at move	10.2	10.8	45.2	33.9
1+ child at move	n.a.	5.1	38.8	56.1
<i>Second-generation immigrants</i>	13.9	11.1	47.2	27.8
<i>West Germans</i>	15.8	22.8	41.0	20.4

Source: Calculations based on GSOEP, 1984–2004.

Table 18 displays the number of children ever born by country of origin. Since the sample is very small, especially for the second generation, these numbers should be regarded merely as trend indicators. Whereas first-generation immigrants from Turkey and Italy have the highest shares of women with more than two children, the two-child family dominates among women from the former Yugoslavia, Greece, and Spain. For the second generation, there appears to be a trend towards a smaller family size among all five groups.

Table 18: Completed number of children at age 35, per country of origin — %

	0	1	2	3+
<u>Turkey</u>				
<i>First-generation immigrants</i>				
Total	12.2	6.1	23.0	58.8
Childless at move	18.8	7.3	26.0	47.9
1+ child at move	n.a.	3.9	17.3	78.9
<i>Second-generation immigrants</i>	7.9	23.7	34.2	34.2
<u>Yugoslavia</u>				
<i>First-generation immigrants</i>				
Total	13.3	11.7	51.6	23.4
Childless at move	20.2	15.5	46.4	17.9
1+ child at move	n.a.	4.6	61.4	34.1
<i>Second-generation immigrants</i>	23.1	38.5	23.1	15.4
<u>Greece</u>				
<i>First-generation immigrants</i>				
Total	13.3	11.1	46.7	28.9
Childless at move	17.1	11.4	42.9	28.6
1+ child at move	n.a.	10.0	60.0	30.0
<i>Second-generation immigrants</i>	15.0	20.0	50.0	15.0
<u>Italy</u>				
<i>First-generation immigrants</i>				
Total	4.8	12.9	38.7	43.6
Childless at move	6.4	14.9	42.6	36.2
1+ child at move	n.a.	6.7	26.7	66.7
<i>Second-generation immigrants</i>	3.0	21.2	42.4	33.3
<u>Spain</u>				
<i>First-generation immigrants</i>				
Total	12.5	18.8	46.9	21.9
Childless at move	13.8	20.7	44.8	20.7
1+ child at move	n.a.	0.0	66.7	33.3
<i>Second-generation immigrants</i>	0.0	7.7	76.9	15.4
<i>West Germans</i>	17.9	24.7	39.0	18.5

Source: Calculations based on GSOEP, 1984–2004.

Table 19: Mean age at first, second, and third conception, per country of origin — years

	Total	Turkey	Yugoslavia	Greece	Italy	Spain	West Germany
<u>First conception</u>							24.9
<i>First-generation immigrants</i>							
Total	21.7	21.0	21.9	22.5	22.4	23.5	
Childless at move	22.4	21.5	23.0	22.9	22.8	24.1	
1+ child at move	20.1	19.6	20.0	21.2	23.9	19.4	
<i>Second-generation immigrants</i>	22.8	22.0	23.0	23.6	21.0	22.8	
<u>Second conception</u>							27.8
<i>First-generation immigrants</i>							
Total	25.1	24.2	25.5	25.1	26.0	27.3	
Childless at move	25.9	25.0	26.5	25.5	27.0	27.8	
1+ child at move	23.3	22.4	24.2	23.9	23.3	24.2	
<i>Second-generation immigrants</i>	25.7	25.3	24.5	25.7	26.2	26.8	
<u>Third conception</u>							30.0
<i>First-generation immigrants</i>							
Total	27.8	27.1	28.1	27.9	29.6	29.5	
Childless at move	28.7	28.2	28.3	27.6	31.4	30.1	
1+ child at move	26.4	25.5	26.4	29.0	28.4	25.8	
<i>Second-generation immigrants</i>	27.8	27.8	27.9	24.5	27.0	31.6	

Source: Calculations based on GSOEP, 1984–2004.

The higher-than-average number of children ever born among first-generation immigrants coincides with an earlier entry into motherhood (see Table 19). The mean age at first conception is 21.7 years for the first generation in total. Of this group, the women who were childless at the move started family formation about two years later than the women who moved after having at least one child. Women of the second migrant generation have a mean age at first conception of 22.8 years, and the highest mean age is calculated for West German women, at 24.9 years of age. The pattern is similar for the subsequent conceptions.

Comparing the birth cohorts, there appears to be a trend towards a slightly declining age at entry into motherhood among younger cohorts of the first immigrant

generation, whereas the first conception took place later among the younger cohorts of the second generation and the West Germans (see Table 20). This pattern is similar for the second and the third conceptions.

Table 20: Mean age at first, second, and third conception, per birth cohort

	Total	1946–59	1960–69	1970–79
<u>First conception</u>				
<i>First-generation immigrants</i>				
Total	21.7	22.0	21.6	20.8
Childless at move	22.4	23.1	21.9	21.0
1+ child at move	20.1	20.0	20.5	19.0
<i>Second-generation immigrants</i>	22.8	22.1	23.1	22.9
<i>West Germans</i>	24.9	24.2	26.1	24.7
<u>Second conception</u>				
<i>First-generation immigrants</i>				
Total	25.1	25.3	24.8	24.2
Childless at move	25.9	26.6	25.0	24.4
1+ child at move	23.3	23.2	24.1	22.4
<i>Second-generation immigrants</i>	25.7	25.4	26.1	25.1
<i>West Germans</i>	27.8	27.4	28.8	26.7
<u>Third conception</u>				
<i>First-generation immigrants</i>				
Total	27.8	27.9	27.8	26.7
Childless at move	28.7	29.2	28.2	26.9
1+ child at move	26.4	26.4	26.3	25.4
<i>Second-generation immigrants</i>	27.8	27.7	28.5	26.1
<i>West Germans</i>	30.0	30.6	29.5	27.8

Source: Calculations based on GSOEP, 1984–2004.

3.3 Results: Transition to a first child

This chapter opens with the presentation of Kaplan-Meier survival estimates for the transition to a first child; the event under study is a first conception leading to a live birth. The results of the piecewise-linear intensity models, which were achieved by stepwise modeling, are then presented. First, a comparison between immigrants and West Germans (3,892 women) is drawn, and second, the immigrant groups (558 first-generation and 811 second-generation migrants) are compared. (The main results of the analysis of the transition to motherhood have been published in Milewski 2007.)

3.3.1 Kaplan-Meier survival estimates

Figures 2 and 3 display the transition to a first child by immigrant generation, compared to West German women (see also Table 21). The basic process time of the first-generation group is time since arrival in West Germany (not age, because first-generation immigrants arrived in West Germany at different ages). For second-generation migrants and West Germans, the basic process time is the time since the woman turned age 15. The estimates are based on the duration-specific probabilities of women having a child when living in West Germany. The differences between second-generation migrants and West Germans are significant.

These calculations give an estimate of the share of women who become mothers, and how quickly they do so. Fifty percent of first-generation immigrants become mothers after a stay of 3.4 years in West Germany. The median age at entry into motherhood of second-generation migrants is 26.4 years. The family formation of immigrant children starts earlier than that of West Germans; half of the West German women enter motherhood about two years later than women of the second migrant generation (median age: 28.2 years).

The level of ultimate childlessness is as follows: first-generation immigrants have the lowest level of childlessness, at 17.5 percent; while the share of women who remain childless is 21.8 percent among second-generation migrants, and 23.5 percent among West Germans.

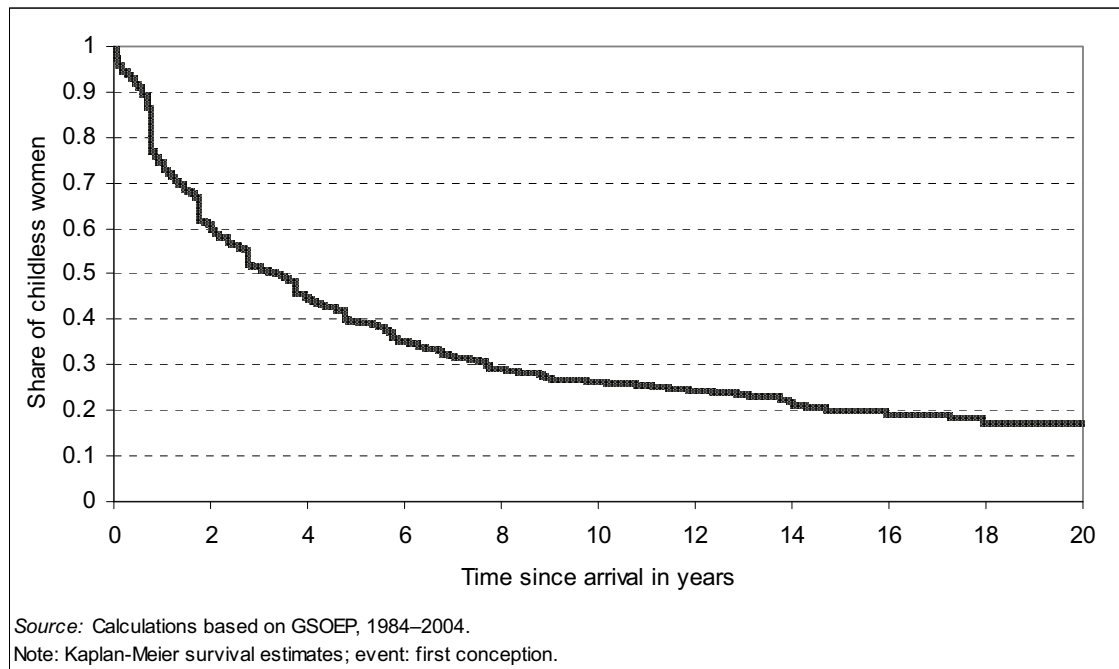
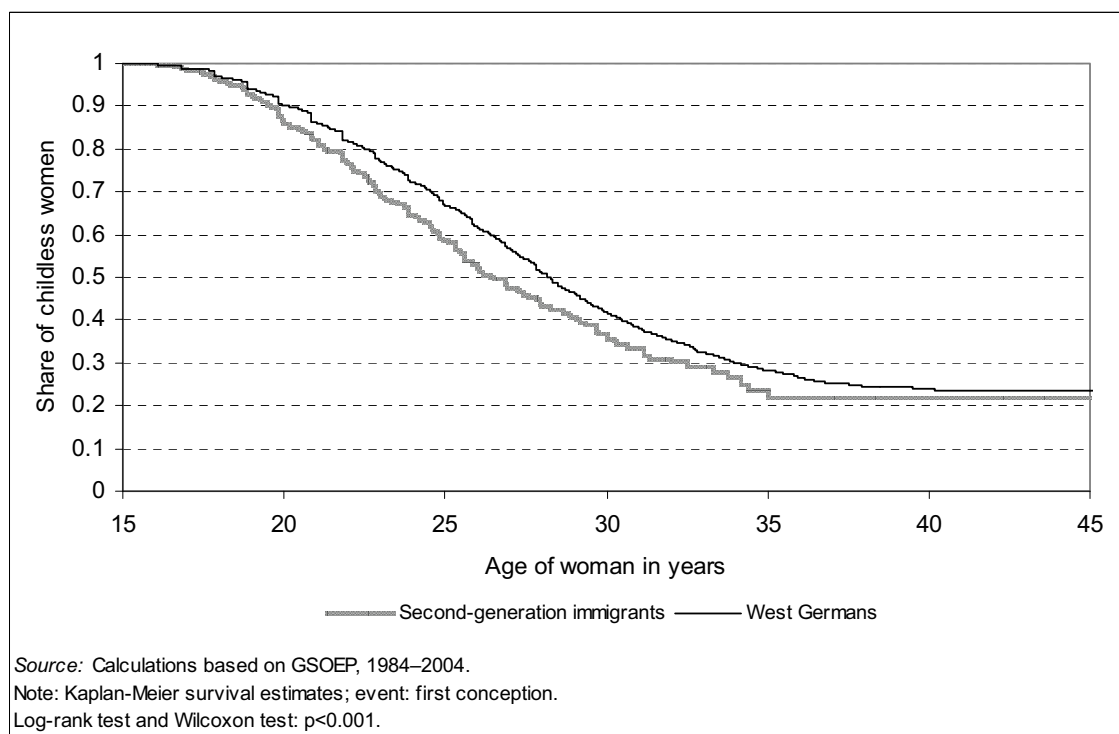
Figure 2: Transition to a first child, first-generation immigrants**Figure 3: Transition to a first child, second-generation immigrants and West Germans**

Table 21: Share of childlessness and median age at first-time motherhood by immigrant generation and country of origin

	N	Share of childless women in %	Median in years
			<u>Time since arrival</u>
<i>First-generation immigrants (total)</i>	558	17.5	3.4
Turkey	237	15.5	2.5
Yugoslavia	132	24.6	3.8
Greece	53	20.9	4.2
Italy	90	16.8	3.6
Spain	46	16.3	4.6
			<u>Age</u>
<i>Second-generation immigrants (total)</i>	811	21.8	26.4
Turkey	335	23.5	24.5
Yugoslavia	126	37.9	29.7
Greece	123	33.5	30.0
Italy	156	10.0	26.2
Spain	71	13.9	25.8
<i>West Germans</i>	3892	23.5	28.2

Source: Calculations based on GSOEP, 1984–2004; Kaplan-Meier survival estimates; event: first conception.

The next two figures display the survival estimates for first- and second-generation immigrants by country background (Figures 4 and 5, Table 21). Among first-generation immigrants, the earliest and highest transitions to a first child are observed for women from Turkey (15.5 percent childlessness), whereas women from the former Yugoslavia and Greeks have the highest levels of childlessness (24.6 and 20.9 percent respectively). These correspond to a relatively late entry into motherhood.

Among second-generation migrants, Yugoslavians and Greeks have the highest levels of childlessness. At 37.9 and 33.5 percent, these shares exceed the corresponding levels of the first immigrant generation from Yugoslavia and Greece, respectively. Women of these groups also have the highest median age at first-time motherhood, about 30 years old. In contrast to first-generation immigrants, the lowest levels of childlessness are estimated for women of Italian and Spanish descent. At 10 and 13.9 percent, these shares are lower than the shares of childless women among the first generation. In line with the first generation, women of Turkish background are the youngest mothers in the sample of the second generation; their median age at first conception is 25.5 years. Their share of childlessness remains, however, on an intermediate level in the sample.

Figure 4: Transition to a first child of first-generation immigrants by country of origin

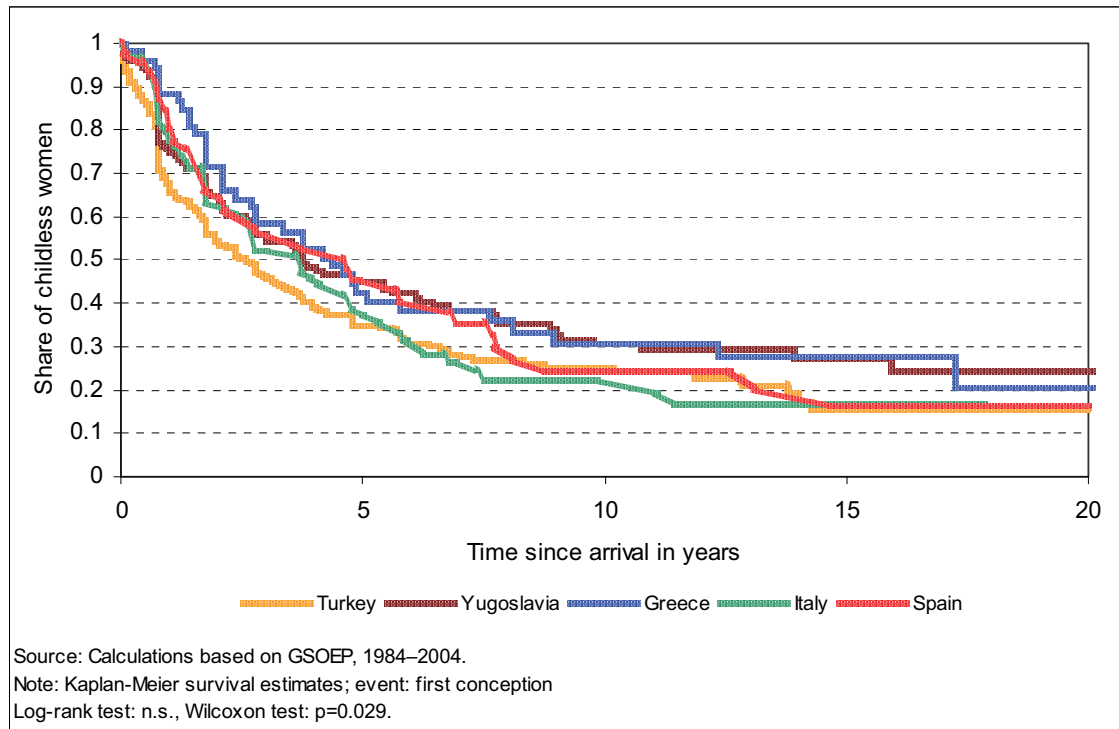
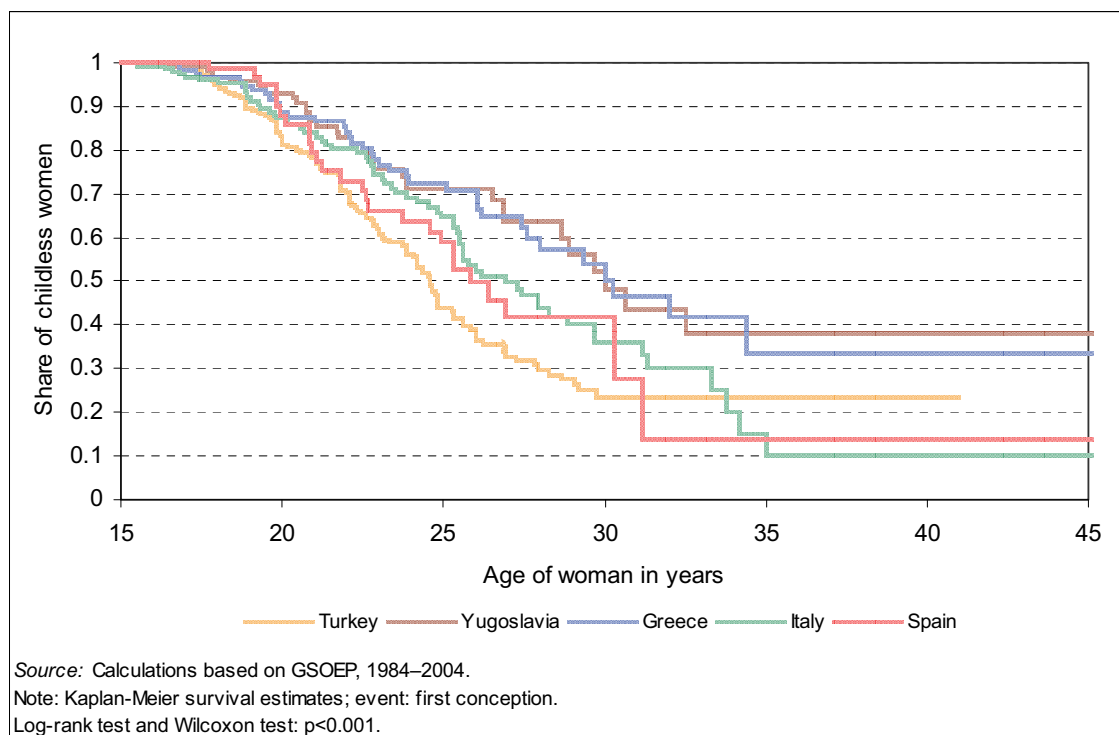


Figure 5: Transition to a first child of second-generation immigrants by country of origin



3.3.2 Immigrant generation and baseline intensity (age of the woman)

Our presentation now turns to the intensity-regression analysis with the age of the woman as process time.

Model 1.1: In a first step, we ask whether or not there are differences between women of the first and second immigrant generations and West Germans in order to provide an initial answer to the hypothesis of socialization. Remember that if socialization is important for family formation, the first-conception risks are supposed to be higher for first-generation immigrants than for the second generation. The results of the Kaplan-Meier survival estimates point in this direction. Model 1.1 in Table 22 displays a comparison between the two immigrant generations and West Germans, controlling for the age of the woman (baseline intensity; see Figure 17 in the Appendix; Figure 6 displays the number of births per 1000 person-years for the immigrant generations and West Germans).

Figure 6: Transition to a first child — baseline intensity

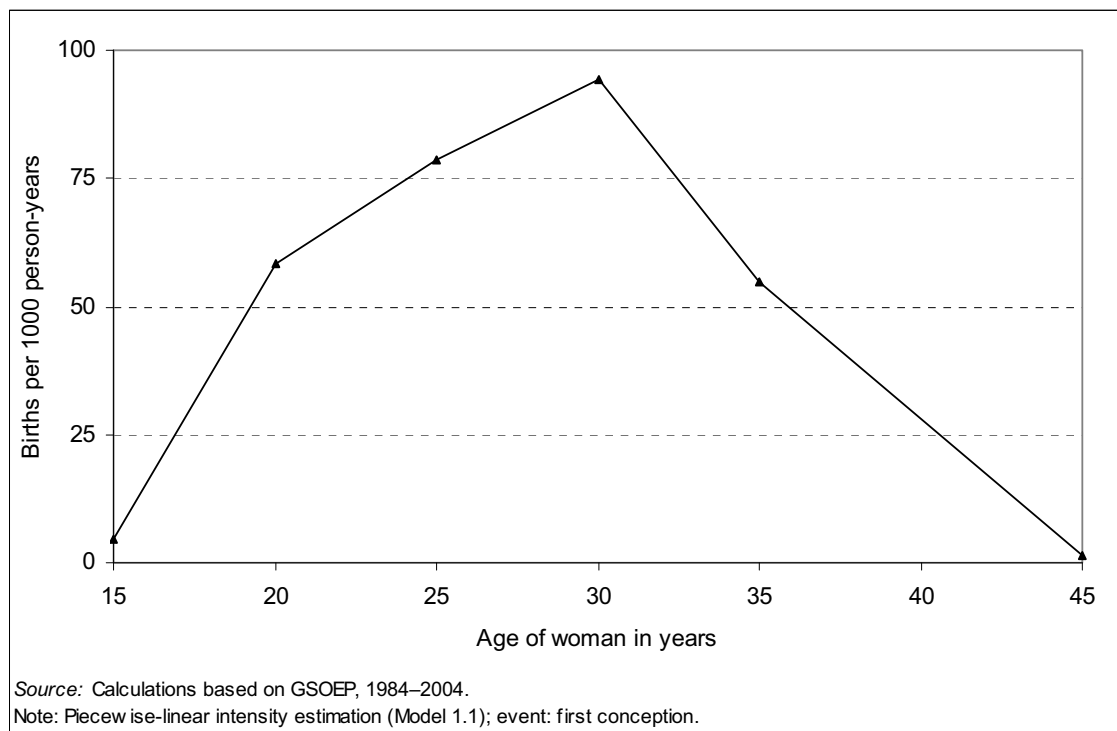


Table 22: Factors influencing the transition to a first child: Immigrant generation and stay duration — relative risks for categorical variables and slope estimates for continuous variables

Variable	Model 1.1		Model 1.2	
West German	1		1	
<i>Immigrant generation</i>				
First generation	2.53	***		
Second generation	1.23	***	1.25	***
First generation:				
<i>Time since arrival in years (slope)</i> ^a				
Intercept			1.813	***
0–1			0	
1–2			-0.050	***
2–5			-0.024	***
5+			-0.009	***
<i>Age in years (slope)</i>				
15–20	0.042	***	0.042	***
20–25	0.005	***	0.006	***
25–30	0.003	*	0.004	***
30–35	-0.009	***	-0.008	***
35–45	-0.030	***	-0.030	***
<i>Constant</i>	-7.85	***	-7.90	***
Log-likelihood	-17,133.71		-17,035.35	

Source: Calculations based on GSOEP, 1984–2004; event: first conception.

Note: Significance: **=10%; ***=5%; ****=1%.

^a — Piecewise-linear spline for first-generation immigrants.

The first-birth risks for the first immigrant generation are highly elevated: it is 2.5 times higher than that of West Germans. The corresponding transition rates are smaller, but are still elevated for the second generation, too, compared to West Germans (about 20 percent higher). These differences are significant.

3.3.3 Stay duration of first-generation immigrants

Model 1.2: One of the guiding hypotheses of studies of immigrant fertility is the disruption hypothesis for first-generation immigrants, which suggests that the transition to a first child may be hampered by the migration process and related difficulties. To check the validity of this hypothesis, the second step in the modeling process replaces the constant risk for first-generation immigrants by a risk that varies by time since arrival in West Germany (see Table 22). Contrary to the disruption hypothesis, a jump

in conception risks appears immediately following immigration, followed by slightly declining levels in subsequent years. Although the transition rates decline by stay duration, they remain significantly above the risks of West Germans. This is suggestive of a childbearing behavior that adapts somewhat (but not fully) towards the country of destination (see Figure 7).

Table 23: Factors influencing the transition to a first child: Stay duration and marriage duration — relative risks for categorical variables and slope estimates for continuous variables

Variable	Model 1.2		Model 1.3	
West German	1		1	
<i>Immigrant generation</i>				
Second generation	1.25	***	1.07	
First generation:				
<i>Time since arrival in years (slope)^a</i>				
Intercept	1.813	***	0.902	***
0–1	0		0	
1–2	-0.050	***	-0.030	**
2–5	-0.024	***	-0.010	*
5+	-0.009	***	-0.007	**
<i>Marriage duration in years (slope)^b</i>				
Intercept			2.386	***
0–1			0.033	***
1–2			-0.023	***
2–5			-0.008	***
5+			-0.009	***
Ref.: unmarried			0	
Log-likelihood	-17,035.35		-15,336.73	

Source: Calculations based on GSOEP, 1984–2004; event: first conception.

Note: Significance: **=10%; ***=5%; ****=1%; controlled for age of the woman.

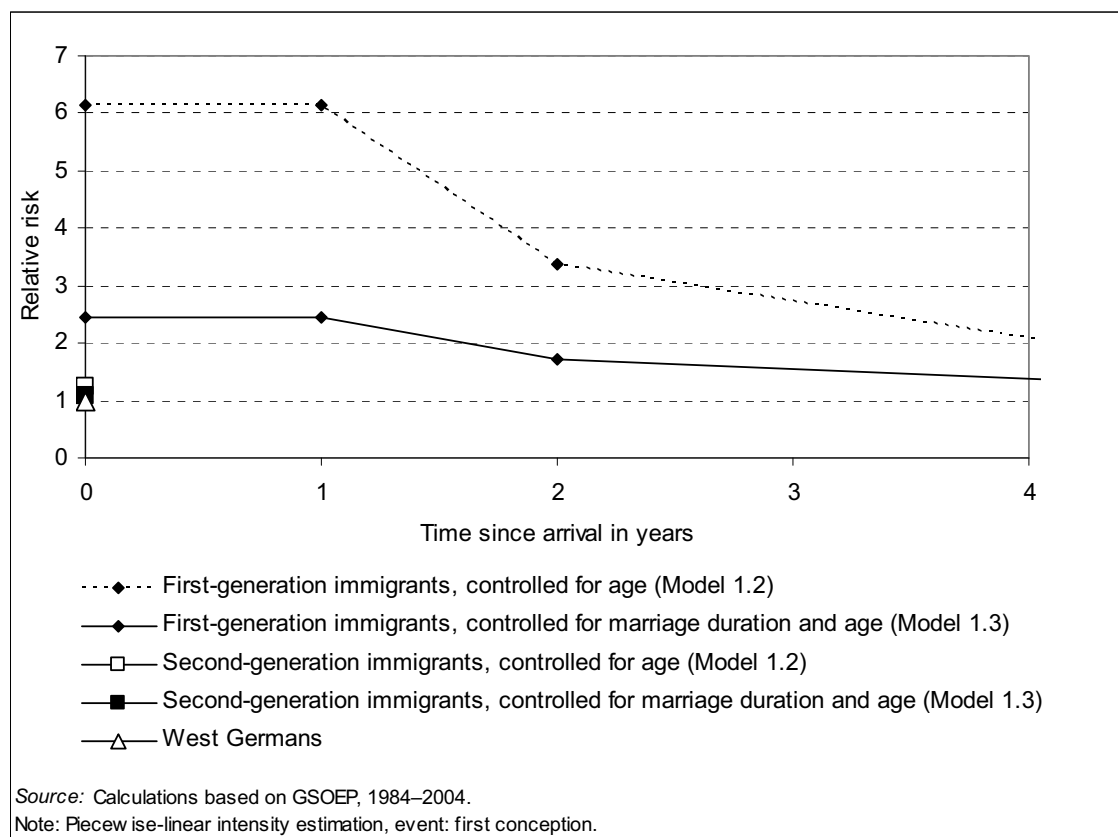
^a — Piecewise-linear spline for first-generation immigrants.

^b — Piecewise-linear spline for married women.

Note that women moving to West Germany while pregnant are excluded from this analysis. Even without them, the effect of arriving in the new country on first-birth behavior is very strong. The spline representation of the time since arrival is piecewise-linear in order to identify easily sufficient bend points. However, one must be careful here with the assumptions that were used when we constructed the variables. Since the month of birth was imputed as appearing in the middle of a calendar year for respondents with missing information, and the month at immigration at the beginning of

a calendar year for respondents of the first immigrant-generation with missing information, the intervals between the respective bend points must not be smaller than one year in general. Note that first-generation immigrants are assumed to have a constant risk between their arrival in West Germany and the end of the first year of stay, represented by the zero coefficient at duration 0–1 in Table 22. Technically speaking, we have frozen the value between the respective nodes at 0 by default.

Figure 7: Transition to a first child by time since arrival, relative risks — Models 1.2 and 1.3



3.3.4 Marriage duration

Model 1.3: In the third step of the analysis, the hypothesis of the interrelation of events is tested by also including marital status and marriage duration as a control process (c.f. Hoem and Nedoluzhko 2008). As seen in Chapter 3.2, marriage is more frequent and takes place earlier among the first-generation immigrants in the sample than among the second generation and West Germans. Controlling for marriage duration reduces the high first-birth risks right after immigration by about 60 percent¹⁴. When we take marital status and marriage duration into account, first-birth risks of second-generation immigrants are not significantly different from those of West Germans, whereas the transition rates of first-generation immigrants remain significantly higher (see Table 23). Figure 7 displays the effect of stay duration of first-generation immigrants on the first-child transition as relative risks, both without and with control for marriage duration¹⁵. The transition to a first marriage and to a first conception are processes endogeneous to each other, as the first-conception rates are much elevated mainly in the first year of a first marriage.

3.3.5 Women's characteristics

Cohort

Models 1.4: In the next steps in our investigation, we include the woman's educational attainment and a birth-cohort indicator (Model 1.4A, see Table 24). Neither of them adds much of an explanation to the fertility differentials between first-generation immigrants and West Germans.

In a preliminary analysis, an indicator for the immigration cohort of first-generation immigrants was used (not displayed here). The estimates showed higher first-birth risks for first-generation immigrants who had moved since 1980 than for women who immigrated between the 1960s and 1980. The results were significant and interesting only when we did not control for stay duration and marriage duration. Hence, we decided to include the birth cohort (and not the immigration cohort) as a covariate and

¹⁴ Example for the calculation of a relative-risk difference between Models 1.2 and 1.3 (see Table 23) at duration 0–1: $\exp(0.902-1.813)=0.4$.

¹⁵ Example for the calculation of a relative risk for a continuous time-varying covariate in Model 1.3 (see Table 23): relative risk of marriage duration at the one-year node: $\exp((1-0)*0.033+2.386)=11.2$.

this variable applies to all women in the sample. For second-generation immigrants, the first-birth risks are slightly enlarged when we control for birth cohort. This suggests that they may be overrepresented in cohorts that have lower fertility. The second migrant generation in the sample is a ‘younger’ study population than the first immigrant generation and West Germans. Almost 50 percent of the second generation were born in the 1970s and 1980s, whereas these shares are only about 15 and 27 percent for first-generation immigrants and West German women, respectively. Women of the birth cohorts 1970–79 and 1980+ have significantly lower first-birth risks than women who were born before 1970 (this step of the analysis is not displayed here; see Appendix-Table 37 for the sample composition and Table 10 for the occurrences and exposure time).

Educational attainment

For the second migrant generation, educational attainment matters also (Model 1.4 A). Controlling for this covariate reduces fertility risks and differentials, which indicates compositional differences (results of stepwise modeling are not displayed here, for the composition of the sample and test statistics see Appendix-Tables 38–47). In general, both immigrant women and West Germans show the same behavior as revealed in the preliminary steps of the analysis: the first-child risks are significantly lower if a woman has a higher educational attainment than if a woman ‘only’ has a first school certificate.

Employment

So far, the transition rates for first-generation immigrants remain high shortly after arrival. In model 1.4B (see Table 24), the employment status is added. This covariate decreases the transition rates of first-generation immigrants by 25 percent. The important status here is non-employment, which increases the transition to motherhood by about 65 percent compared to women who work either full- or part-time. The effect is similar for immigrants and West Germans.

Table 24: Factors influencing the transition to a first child: Women's characteristics — relative risks for categorical variables and slope estimates for continuous variables

Variable	Model 1.4A	Model 1.4B
West German	1	1
<i>Immigrant generation</i>		
Second generation	1.08	1.06
First generation:		
<i>Time since arrival in years (slope) ^a</i>		
Intercept	0.935 ***	0.652 ***
0–1	0	0
1–2	-0.030 **	-0.023 *
2–5	-0.011 *	-0.009
5+	-0.008 **	-0.007 **
<i>Marriage duration in years (slope) ^b</i>		
Intercept	2.326 ***	2.190 ***
0–1	0.033 ***	0.034 ***
1–2	-0.023 ***	-0.022 ***
2–5	-0.009 ***	-0.008 ***
5+	-0.010 ***	-0.009 ***
Reference: unmarried	0	0
<i>Birth cohort</i>		
1946–59	1	1
1960–69	1.02	1.05
1970–79	0.97	1.02
1980+	0.86	0.98
<i>School education</i>		
No degree	0.90	0.86
First or other degree	1	1
Second degree	0.66 ***	0.76 ***
In education	0.74	0.87
N.A.	0.95	0.84
<i>Employment ^c</i>		
Full-time		1
Part-time		0.99
Non-employed		1.65 ***
In education or training ^d		0.46 ***
N.A.		1.73 ***
Constant	-7.574 ***	-7.366 ***
Log-likelihood	-15,299.74	-15,150.99

Source: Calculations based on GSOEP, 1984–2004; event: first conception.

Note: Significance: **=10%; ***=5%; ****=1%; controlled for age of the woman.

^a — Piecewise-linear spline for first-generation immigrants.

^b — Piecewise-linear spline for married women.

^c — Time-varying covariate.

^d — Conditional covariate for persons who have finished school education.

Table 25: Factors influencing the transition to a first child: Spouse's characteristics — relative risks for categorical variables and slope estimates for continuous variables

Variable	Model 1.5
West German	1
<i>Immigrant generation</i>	
Second generation	1.04
First generation:	
<i>Time since arrival in years (slope)</i> ^a	
Intercept	0.604 ***
0–1	0
1–2	-0.021
2–5	-0.010
5+	-0.007 **
<i>Spouse's school education</i> ^b	
No degree	1.40 ***
First or other degree	1
Second degree	1.05
In education	n.a.
N.A.	0.98
<i>Spouse's employment</i> ^c	
Full-time	1
Part-time	0.65
Non-employed	0.52
In education or training ^d	0.63
N.A.	1.37
Constant	-7.388 ***
Log-likelihood	-15,143.59

Source: Calculations based on GSOEP, 1984–2004; event: first conception.

Note: Significance: *'=10%; ***'=5%; ****'=1%; controlled for age, birth cohort, education, and employment of the woman and marriage duration.

^a — Piecewise-linear spline for first-generation immigrants.

^b — Conditional spline for married women.

^c — Time-varying covariate.

^d — Conditional covariate for persons who have finished school education.

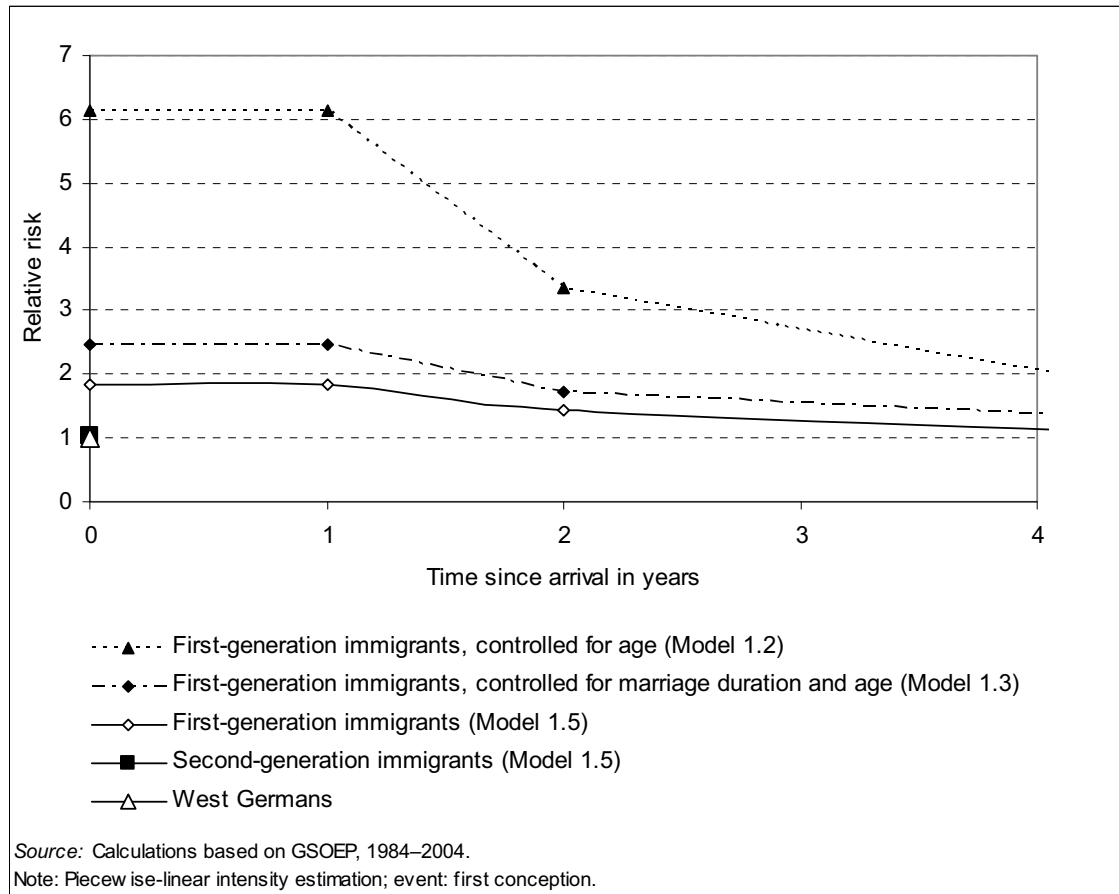
3.3.6 Partner's characteristics

Model 1.5: This step adds to the analysis the partner's educational attainment for married women. Controlling for the partner's educational attainment, first-child risks are slightly reduced for first-generation immigrants; however, adding the partner's school education does not change the results for the second migrant generation. This indicates that the composition of the first-generation group is different from that of the second generation; namely, that spouses without school degrees are overrepresented in the first immigrant generation (see Appendix-Table 42). The decrease in fertility

differentials is explained by the category of women married to a man who has not obtained any school degree. The first-child risk among this group is almost 40 percent higher than among women with a spouse who has a first school certificate.

This model also controls for the employment status of the husband, which, however, hardly affects the first-birth risks of any of the three groups. It is the employment status of the woman that remains crucial (see Table 25 and Figure 8).

Figure 8: Transition to a first child by time since arrival, relative risks — Models 1.2, 1.3, and 1.5



3.3.7 Immigration background

The next steps control for factors that apply to immigrant women only (conditional covariates; see Table 26).

Woman's country of origin

Model 1.6: We test differences by country of origin in Model 1.6A (see Table 26). Initially, we had run the models testing the effect of each of the countries of origin interacting with the immigrant generation compared to West Germans. Then, tests were conducted to see whether or not there are differences between the migrant groups. Differences by country of origin cannot be found for first-generation immigrants after controlling for the duration of stay and the duration of marriage. When looking at second-generation immigrants and comparing women of Turkish, Yugoslavian, Greek, Italian, and Spanish descent, small differences are found only for women of Turkish descent. There are no differences between women from the Southern and Southeastern European (SSEE) countries. Therefore, the categories of the variable referring to the country of origin are combined as follows: 'Turkish' and 'Southern/Southeastern European.' However, taking the covariates from the previous models into account, these differences do not remain significant.

Spouse's country of origin and migration process

Model 1.6B: The next steps take into account the partner's country of origin among immigrant women, and the marital status of the first-generation immigrants at the time of the move. These steps apply to married women only (conditional covariates). Neither of them contributes significantly to explaining first-child differentials between the groups, though one may see a trend here: women who are married to a husband from a different country or to a West German have elevated transition rates compared to immigrant women in an origin-homogeneous marriage (Model 1.6B, see Table 26).

First-generation immigrants who moved at a different point in time than their partners also have higher transition rates than women who moved with their husbands (results of stepwise modeling not displayed here). However, since there is probably an

overlap with the category for which information on the husband's immigration history is not available, the effect of the categories with missing information become significant; therefore, the model including these three factors together may be overspecified (see Appendix-Table 48).

Note that West German women are the reference category in Models 1.6A–B for first- and second-generation immigrants from Turkey, whereas the estimates for the other immigrant groups are calculated relative to the respective immigrant generation from Turkey. For second-generation migrants, for example, read Model 1.6B as follows: the first-conception risk of a second-generation immigrant from a Southern/Southeastern European country who is married to a man of the same origin is 17 percent lower than for a second-generation migrant of Turkish descent who is married to a Turkish man (though these differences are not significant).

Table 26: Migrant-specific factors influencing the transition to a first child — relative risks for categorical variables and slope estimates for continuous variables

Variable	Model 1.6A	Model 1.6B
West German	1	1
<i>Immigrant generation and country of origin</i>		
First generation, Turkey:		
<i>Time since arrival in years (slope)</i> ^a		
Intercept	0.591 ***	0.595 ***
0–1	0	0
1–2	-0.021	-0.020
2–5	-0.010 *	-0.010
5+	-0.007 **	-0.007 **
First generation, SSEE ^b	1.03	1.03
Second generation, Turkey ^c	1.14	1.16
Second generation, SSEE ^b	0.87	0.83
<i>Spouse's origin</i> ^d		
Migrant from same country		1
Migrant from different country or German		1.16
N.A.		0.82
Log-likelihood	-15,142.76	-15,141.14

Source: Calculations based on GSOEP, 1984–2004; event: first conception.

Note: Significance: **=10%; ***=5%; ****=1%; controlled for age, birth cohort, school education, employment status of the woman; school education, employment of spouse; marriage duration.

^a — Piecewise-linear spline for first-generation immigrants from Turkey relative to West Germans.

^b — SSEE (Southern and Southeastern Europe): Yugoslavia, Greece, Italy, Spain relative to Turkey.

^c — Turkish-descent women relative to West Germans.

^d — Conditional covariate for married immigrant women.

3.3.8 Further covariates

Further control variables have been included in this analysis; their impact on first-birth behavior is, however, hardly important. A covariate often used in fertility studies in general, and particularly in studies on international migration, is religious affiliation. Our analysis showed that the religious affiliation does not reveal significant differences by religion for immigrants to West Germany (c.f. Mayer and Riphahn 2000). This probably results from a high correlation between the country of origin and religious affiliation. Other indicators for cultural background, such as religiosity and type of place where the woman lived at age 15, were also used in the analysis. However, as each of these variables had a large share of missing answers, they are not included here in the final model. The results of the additional variables that are not included in the final model are displayed in Appendix-Table 49.

3.3.9 Intermediate conclusion

Before turning to the transitions to subsequent births, we present a short summary of the results of the first child. The analysis reveals that it is important to distinguish between the immigrant generations. The first-birth risk among first-generation immigrants who move to West Germany when childless is 2.5 times higher than the corresponding risk among West Germans. Second-generation immigrants living in Germany have only 1.2 times higher transition rates to first births compared to West Germans.

The marriage status is the most important covariate for both immigrant generations. It stresses the endogeneity of first marriage and first child (Baizan, Aassve, and Billari 2003). The socio-demographic characteristics of the partner matter little, however. For first-generation immigrants, the hypothesis of interrelated events is proven: migration, marriage, and a first pregnancy follow in short sequence. As the transition to a first pregnancy is much elevated in the first year following immigration, the hypothesis of fertility disruption shortly after immigration cannot be proven.

So far, the question of the impact of socialization cannot be answered in full when analyzing only the transition to a first birth. The elevated transition rates of first-generation immigrants can be attributed to selection, or, more specifically, to the interrelation of events, rather than to the influence of socialization. This is because the

risks are elevated mainly shortly after immigration, and fertility differentials in the respective countries of origin are not reflected in the first-birth risks of first-generation immigrants to West Germany.

Among first-generation immigrants from Turkey, the former Yugoslavia, Greece, Italy, and Spain, first-birth risks decrease as the duration of stay increases. This suggests that immigrants adapt to the behavior at destination with increasing length of stay. It may be speculated that the group of first-generation immigrants consists of two sub-groups with different behavioral patterns; women with immediate intentions to found a family (marriage migrants) and those who may wish to establish themselves after the move before having a child. This is supported by the fact that the fertility levels of first-generation migrants decline after controlling for socio-economic characteristics. In addition, we find the shares of childless immigrants much higher than those in the respective countries of origin, which again stresses the importance of adaptive behavior at destination.

As for second-generation immigrants, their fertility behavior may be placed within the context of adaptation rather than socialization. The first-birth risks of the second generation reflect the fertility differences between the respective countries of origin; women of Turkish background in West Germany have higher first-birth risks than women of Southern and Southeastern European background. This can be traced back, however, to the compositional differences of the second immigrant generation in West Germany in terms of their schooling and labor-force participation. The latter observation confirms the hypothesis of compositional differences between the immigrant groups and West Germans.

3.4 Results: Transition to a second child

The analysis of the transition to a second child follows the same procedure as that of the first child. The sample used in this analysis includes women whose first birth took place in Germany, and first-generation immigrants who had the first birth only before they immigrated. The sub-sample of the first immigrant generation consists of 454 one-child mothers in total: 407 women whose first birth took place in Germany (who migrated either before or during first pregnancy), and 47 women who moved with one child. The sub-sample of the second migrant generation consists of 287 women, while the West German sub-sample includes 1771 respondents.

3.4.1 Kaplan-Meier survival estimates

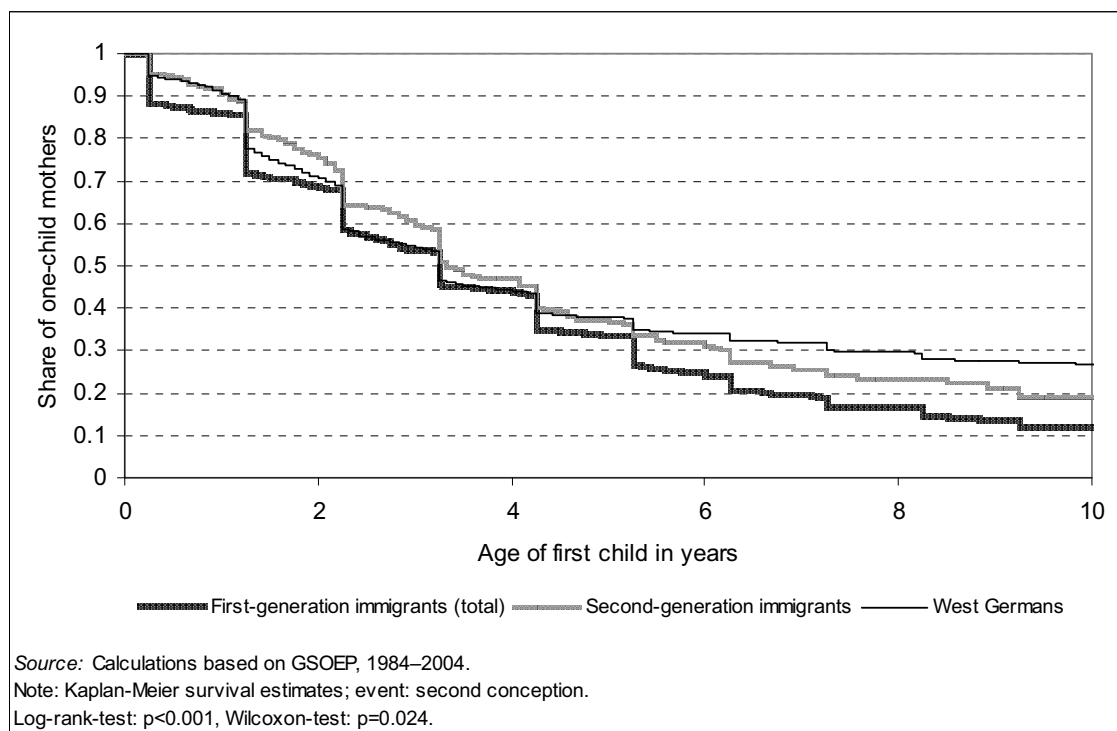
The basic time process is the time since the first birth, i.e., the age of the first child. Figure 9 shows the Kaplan-Meier survival estimates comparing the immigrant generations to West Germans (see also Table 27). The sample contains two groups of first-generation immigrants: the first category, called ‘total,’ captures all first-generation immigrants in this sample, the second group contains only the women who had their first birth in West Germany. Due to the small number of cases in the category of immigrants who moved with one child, a separate calculation for them is not appropriate. Therefore, the calculations were done for the total first-generation group, and for the first generation that includes only the women with the first birth in Germany.

Regardless which of the first-generation indicators is used, the result is the same: first-generation immigrants have the highest frequency of a second child in the sample, and this is significantly different from the frequency among West Germans ($p < 0.001$). About 90 percent of one-child mothers of the first immigrant generation also have a second child. The progression to a second child is significantly lower among the second generation than among the first generation ($p = 0.029$); 81 percent of second-generation migrants have a second child. The lowest share of second births is observed for West Germans; 75 percent of German one-child mothers have a second birth. However, the difference between the second generation and West Germans is not significant. The

groups hardly differ in the median age of the first child when the mother has the second conception: the first child is 3.2 and 3.3 years old, respectively, at second conception (see Table 27).

Comparing the first-generation immigrants in total by country background, the highest shares of second births are observed for women from Turkey and Greece, with more than 90 percent. Meanwhile, 82 percent of Spanish mothers have a second child. The highest second-child shares correspond to the lowest median ages at second conception (under three years). As is observed for the first child, the patterns vary between the immigrant generations: women of Spanish background are the most likely to have a second birth, whereas women of Yugoslavian, Turkish, and Greek descent less frequently have a second child (It is, however, important to note that the sample is relatively small for the second generation. The number of events is about 20 each for the Yugoslavian, Greek, and Spanish groups). Therefore, Figures 10 and 11 display the survival estimates by immigrant generation and a combined country background.

Figure 9: Transition to a second child, first- and second-generation immigrants and West Germans



(Note: The stair-case patterns that appear in Figures 9–11 are due to the imputation of the months of births for missing values. Since we imputed June for all missing values, the difference between the occurrences of the first and second births are full years in the cases where the months of the first and the second births are missing.)

Table 27: Share of one-child mothers and median age at second conception

	N	Share of one-child mothers in %	Median age of first child in years
<i>First-generation immigrants (total)</i> ^a	454	9.6	3.2
<i>First-generation immigrants with first birth in West Germany</i>	407	10.9	3.2
Turkey	176	6.9	2.7
SSEE ^b	231	13.7	3.6
<i>Second-generation immigrants (total)</i>	287	19.0	3.3
Turkey	133	22.5	3.5
SSEE ^b	154	17.5	3.3
<i>West Germans</i>	1771	24.9	3.2

Source: Calculations based on GSOEP, 1984–2004; Kaplan-Meier survival estimates; event: second conception.

^a — Immigrants with first birth in West Germany and with first birth before move.

^b — SSEE (Southern and Southeastern Europe): Yugoslavia, Greece, Italy, Spain.

Figure 10: Transition to a second child of first-generation immigrants by country of origin

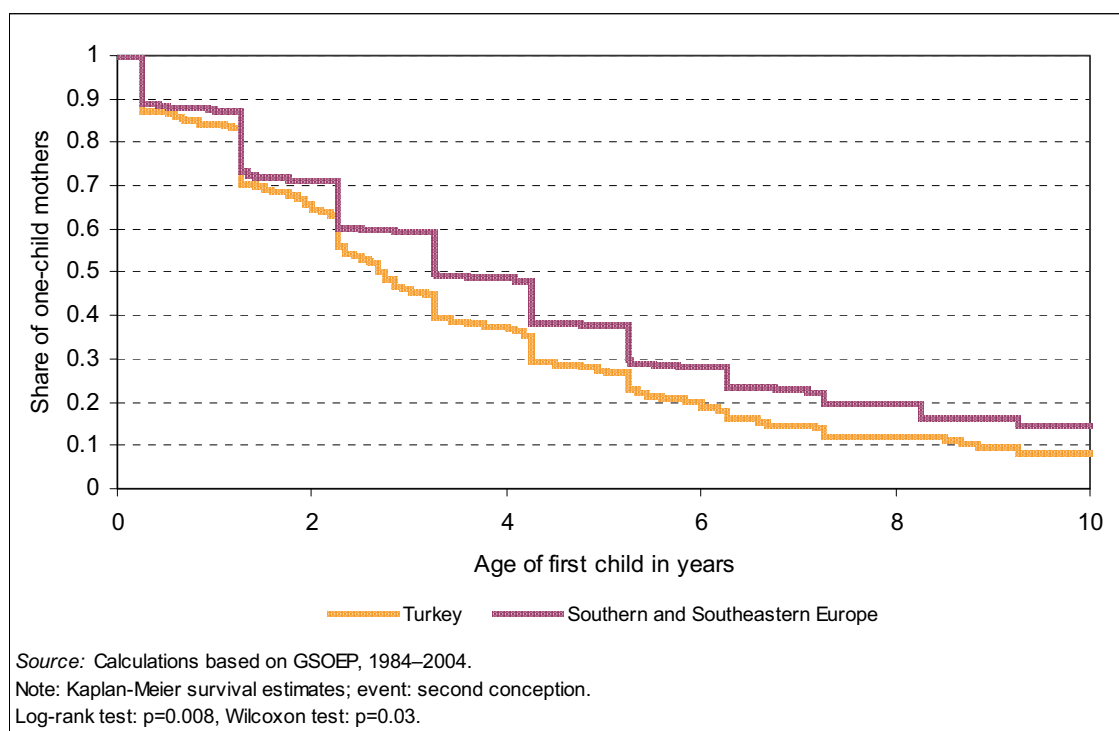
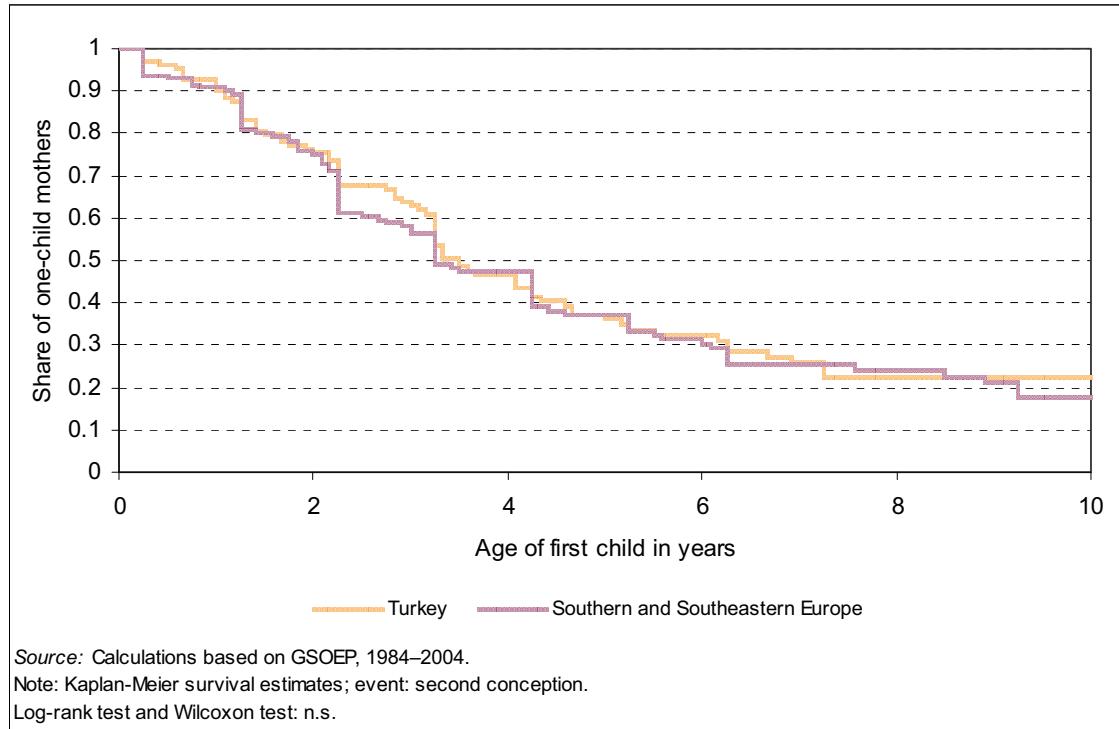
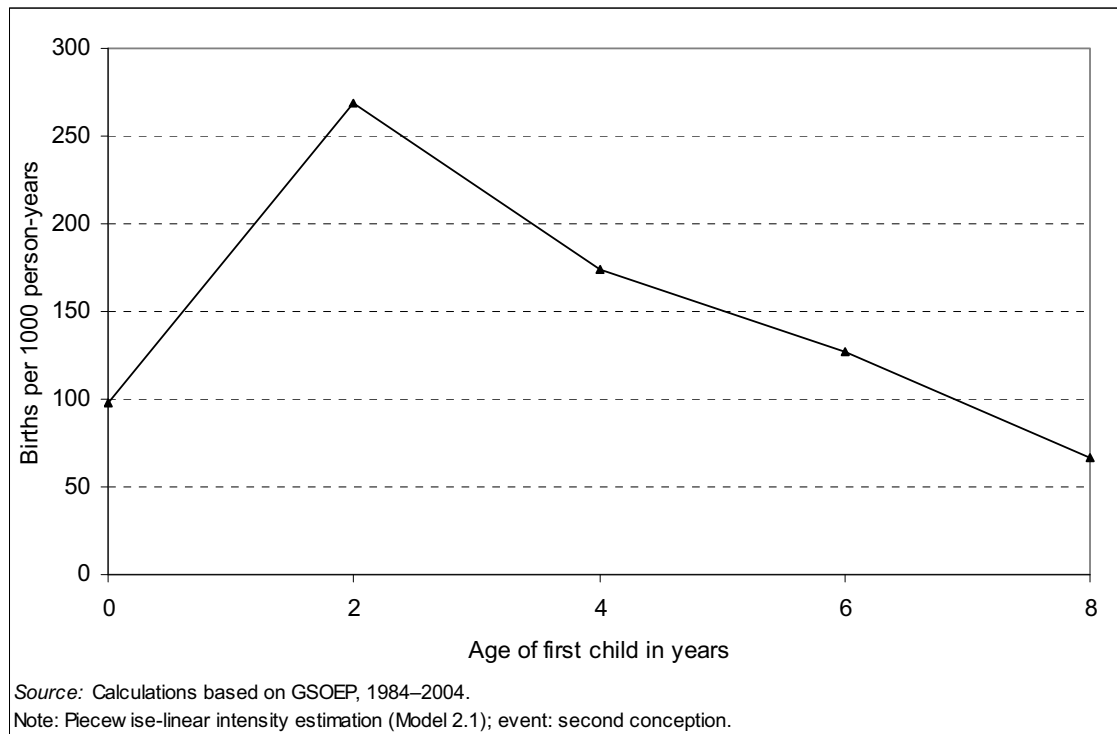


Figure 11: Transition to a second child of second-generation immigrants by country of origin



3.4.2 Immigrant generation and baseline intensity (age of the first child)

Model 2.1: Our first step in the intensity-regression analysis is to compare the main groups under consideration, controlling for the age of the first child only (see Figure 12 and Appendix-Figure 18). As in the case of the first-birth analysis, the working hypothesis of socialization is that there are differences in the second-birth transition between first-generation immigrants and West Germans, but less so between the second generation and West Germans. Model 2.1 in Table 28 tends to verify this hypothesis. Whereas there are no significant differences in second-birth rates between second-generation women and West Germans, first-generation immigrants have a 31 percent elevated second-birth risk compared to West Germans.

Figure 12: Transition to a second child — baseline intensity

3.4.3 Stay duration of first-generation immigrants

Model 2.2: In a preliminary analysis, the next step has been to ask whether or not an adaptation effect by duration of stay at destination, or a disruption effect appears. In answering this question, the stay duration of first-generation immigrants has been taken into account (controlling for the age of the first child). Whereas Model 2.1 estimates the second-child risk for the whole group of first-generation immigrants, we then divided the first-generation immigrants into several sub-groups, and replaced the time-constant risk by a time-varying estimate.¹⁶ For the first-generation immigrants who had their first births in Germany, a distinct duration pattern cannot be identified. Significantly elevated transition rates are observed only in the third year of stay in West Germany

¹⁶ Following the modeling process of the transition to a first birth: for the women who had the first birth in Germany, the risk of a second birth was set to zero by default naturally within the first-year interval and is allowed to vary only after the first year. The ‘frozen’ interval may appear relatively small; however, this is considered to be sufficient since this sample admits women who immigrated to West Germany during pregnancy and had their first birth shortly after the move.

relative to West Germans (about 40 percent). However, the sample of first-generation immigrants who arrived with one child in West Germany is too small for a separate analysis with a time-varying risk by stay duration (this step is not displayed here).

Thus, due to the relatively small sizes of the sub-samples and the insignificance of the impact of the stay duration, the next step in the modeling process — Model 2.2 — uses again a time-constant risk for the first generation, but distinguishes between the women who had the first birth in Germany, and those who had the child before the move (see Table 28). The results reveal high transition rates for the new immigrants: the risk of having a second child among immigrants who arrive after the first birth is almost twice as high as that of West Germans. Although the transition rates of first-generation immigrants who had the first birth in Germany are lower, the latter group still has a significant 26 percent higher second-birth risk than West Germans.

This result suggests a kind of ‘arrival’ effect for the new immigrants, i.e., those who moved after the first birth. It also implies that immigrants who had the first child already in Germany are more adapted to West German second-birth behavior than the women who immigrated only after the first birth.

Table 28: Factors influencing the transition to a second child: Immigrant generation and timing of first birth and move — relative risks

Variable	Model 2.1		Model 2.2	
West German	1		1	
<i>Immigrant generation</i>				
First generation (total)	1.31	***		
<i>First generation with first birth abroad</i>			1.96	***
<i>First generation with first birth in West Germany</i>			1.26	***
Second generation	1.03		1.03	
<i>Age of first child in years (slope)</i>				
0–2	0.042	***	0.042	***
2–4	-0.018	***	-0.018	***
4–6	-0.013	**	-0.013	**
6+	-0.027	***	-0.027	***
<i>Constant</i>	-4.808	***	-4.801	***
Log-likelihood	-8875.23		-8872.17	

Source: Calculations based on GSOEP, 1984–2004; event: second conception.

Note: Significance: **=10%; ***=5%; ****=1%.

3.4.4 Women's characteristics

Age at first birth

Model 2.3A: We continue the modeling process by including characteristics of the women. Model 2.3A (Table 29) adds the age of the women at the first birth. About 80 percent of the first-generation immigrants in the sample had become mothers below age 25, whereas this share is about 70 percent among the second generation, and is barely 50 percent among West Germans (Appendix-Tables 52 and 53). Controlling for this covariate reduces the second-child risks of both first-generation sub-groups, but they remain elevated. The results show significantly lower transition rates for women who gave birth for the first time at age 25 or older than for women who became mothers at younger ages.

In the same step, the indicator of the women's birth cohort is introduced — as in the case of the first-child analysis, this covariate does not add explanation to the model.

Educational attainment

Model 2.3B: The next step adds the educational attainment of the women. The immigrant groups and West Germans differ significantly in terms of socio-demographic composition (see Appendix-Tables 50–60): while the share of women without a school-leaving certificate is higher among the first and second generations than among West Germans, the latter group has a higher share of women with secondary school education. Controlling for education reduces the differences in second-birth risks between the first generation whose first birth was in Germany and West Germans by about six percent. There is also a diminishing effect for the women of the first immigrant generation who arrived with one child in West Germany, but the birth risk among this group remains much elevated. The effect of the school-leaving certificate on second-birth risks is similar for the groups: women who completed secondary education have higher transition rates to a second child, compared to women without a school degree or with a first degree. This effect is the opposite of the impact of education on first-birth behavior, whereby women with secondary education have lower transitions to motherhood. This finding is in accordance with the results of a study by Kreyenfeld (2002). In a recent study, Kravdal (2007) has demonstrated selection effects also for Norway.

Employment

Model 2.3C: The employment status is the last step in Model 2.3C. The first-birth analysis has revealed that non-employment is of crucial importance both for the immigrant groups and West Germans, i.e., women have elevated birth risks during periods of non-employment. The same is true for the transition to the second birth. The conception risk is 64 percent higher for non-employed women than it is for full-time employed women. Note that this analysis includes only married women. Unlike in the first-birth analysis, however, the employment status cannot explain the fertility differentials between the first immigrant generation and West Germans.

Table 29: Factors influencing the transition to a second child: Women's characteristics — relative risks

Variable	Model 2.3A		Model 2.3B		Model 2.3C	
West German	1		1		1	
<i>Immigrant generation</i>						
First generation with first birth abroad	1.82	***	1.77	***	1.74	***
First generation with first birth in Germany	1.22	***	1.17	**	1.19	**
Second generation	0.99		0.97		1.02	
<i>Age at first birth in years</i>						
<20	1		1		1	
20–24	0.91		0.91		0.90	
25–29	0.85	**	0.83	**	0.82	***
30+	0.64	***	0.61	***	0.58	***
<i>Birth cohort</i>						
1946–59	1		1		1	
1960–69	1.04		1.03		1.00	
1970+	0.98		0.98		0.89	
<i>School education</i>						
No degree			1.13		1.13	
First or other degree			1		1	
Second degree			1.23		1.25	
N.A.			0.86		0.85	
<i>Employment</i> ^a						
Full-time					1	
Part-time					1.13	
Non-employed					1.64	
N.A.					1.22	
<i>Constant</i>	-4.661		-4.674		-5.054	
<i>Log-likelihood</i>	-8861.22		-8856.43		-8822.43	

Source: Calculations based on GSOEP, 1984–2004; event: second conception.

Note: Significance: **=10%; ***=5%; ****=1%; controlled for age of the first child.

^a — Time-varying covariate.

Table 30: Factors influencing the transition to a second child: Characteristics of the women and the spouse — relative risks

Variable	Model 2.4A	Model 2.4B
West German	1	1
<i>Immigrant generation</i>		
First generation with first birth abroad	1.67 ***	1.65 ***
First generation with first birth in Germany	1.16 **	1.15 *
Second generation	1.00	1.00
<i>Age at first birth in years</i>		
<20	1	1
20–24	0.89 *	0.88 *
25–29	0.78 ***	0.77 ***
30+	0.53 ***	0.53 ***
<i>Birth cohort</i>		
1946–59	1	1
1960–69	0.99	0.99
1970+	0.87	0.87
<i>School education</i>		
No degree	1.12	1.12
First or other degree	1	1
Second degree	1.18 **	1.19 **
N.A.	0.85	0.85
<i>Employment^a</i>		
Full-time	1	1
Part-time	1.12	1.12
Non-employed	1.63 ***	1.63 ***
N.A.	1.21	1.22
<i>Spouse's school education</i>		
No degree	1.05	1.05
First or other degree	1	1
Second degree	1.25 ***	1.27 ***
N.A.	0.89	1.08
<i>Spouse's employment^a</i>		
Full-time		1
Part-time		1.15
Non-employed		0.90
N.A.		0.80 *
<i>Constant</i>	-5.031 ***	-5.005 ***
Log-likelihood	-8813.46	-8811.11

Source: Calculations based on GSOEP, 1984–2004; event: second conception.

Note: Significance: **=10%; ***=5%; ****=1%; controlled for age of the first child.

^a — Time-varying covariate.

3.4.5 Partner's characteristics

Model 2.4: As was done in the first-birth analysis, the educational level and employment status of the husband are controlled for in the following steps (Table 30). Again, contrary to the results on the first birth, the partner's higher education is

associated with higher second-birth risks, which confirms other findings (Kreyenfeld 2002, Kravdal 2007). The employment status of the husband does not have an additional impact on second-birth risks, however. Both factors together account for about one-tenth of the fertility differentials between first-generation immigrants and West Germans (Models 2.4A and B).

Note that none of these steps changes the result that second-generation migrants and West Germans do not show differences in second-birth risks.

3.4.6 Immigration background

Model 2.5: The final steps in our analysis take the immigration background of the women and their partners into account. Due to the small sample size, no distinction is made by country of origin for the new first-generation immigrants who arrived after the first birth. For the first generation with the first birth in Germany and the second generation, tests were made by country of origin. The results are not shown here since they do not reveal significant differences between the various countries. The only exception are ‘old’ first-generation Turks whose second-birth risk is 21 percent higher than that of West Germans (see Table 31). Second-generation Turks, as well as first- and second-generation immigrants from the former Yugoslavia, Greece, Italy, and Spain, show no significant differences when compared to first-generation Turks or West Germans (results not shown here). Therefore, the country backgrounds are combined again.

After comparing immigrants and their descendants to West Germans, Model 2.5B asks whether differences within the immigrant groups occur by adding migrant-specific covariates that apply to immigrant women only (conditional covariates, see Table 31). Model 2.5B adds the partners’ origin. This step does not greatly change the risks of the migrant groups. It is, however, noteworthy that immigrant women who are married to a man from West Germany or a third country have second-child risks that are about 30 percent lower than those of homogeneously married women. This variable does not have a significant impact on the first-child transition.

This is different for the covariate on the migration process that indicates spatial separation during the migration process of first-generation immigrants. However, due to

the small sample size and the relatively large share of missing values (overlapping for partner's origin and migration process), it is important to proceed carefully when including this covariate. The results indicate that the circumstances of the migration play a role in the first birth, but not really for the second child (see Appendix-Table 61).

Table 31: Factors influencing the transition to a second child: Characteristics of immigration background — relative risks

Variable	Model 2.5A	Model 2.5B
West German	1	1
<i>Immigrant generation and country of origin</i>		
First generation with first birth abroad ^a	1.65 **	1.63 ***
First generation with first birth in Germany, Turkey	1.21 *	1.26 **
First generation with first birth in Germany, SSEE ^b	1.11	1.19 *
Second generation, Turkey	0.94	0.99
Second generation, SSEE ^b	1.06	1.18
<i>Spouse's origin ^c</i>		
Migrant from same country		1
Migrant from different country or German		0.68 **
N.A.		0.65 **
Log-likelihood	-8810.51	-8806.25

Source: Calculations based on GSOEP, 1984–2004; event: second conception.

Note: Significance: **=10%; ***=5%; ****=1%; controlled for age of the first child, age at first birth, birth cohort, school education, employment status of the woman; school education, employment of spouse.

^a — Turkey, Yugoslavia, Greece, Italy, Spain.

^b — SSEE (Southern and Southeastern Europe): Yugoslavia, Greece, Italy, Spain.

^c — Conditional covariate for immigrant women.

3.4.7 Further covariates

In addition, we have tested the effect of further covariates (see Appendix-Table 62). As in the previous analysis, these variables are shown to affect immigrants and West Germans in a similar manner, but do not explain fertility differentials if existent after the control variables are added as described. The variable on the type of the place where the woman lived at age 15 was, after several tests, re-categorized into rural versus urban. Results showed, in line with the literature (e.g., Kane 1986), that women with an urban background have significantly lower transition rates both to a first and to a second birth.

The religious affiliation has one category with a significant effect on first and second births, i.e., having no religious affiliation was found to have a birth-risk-lowering impact (e.g., Mayer and Riphahn 2000). In general, this probably reflects more of the variability within the West German group than differences between immigrants

and Germans; for immigrants, there appears a relatively high association between country background and religion. Therefore, it may be more appropriate to focus on structural indicators than on cultural attributes.

3.4.8 Intermediate conclusion

Repeating one of the main conclusions of the first-child analysis, the results on the transition to the second birth show the importance of distinguishing between the immigrant generations. No significant differences can be found between the second generation and West Germans, whereas the birth risks of first-generation immigrants are elevated compared to these two groups. Furthermore, a distinction between women who had their first child in West Germany and those who had their first child before the move seems reasonable: women who immigrated with a child have even higher parity-progression rates than women with the first birth after the move. This once again contradicts the disruption hypothesis, and applies to both short-term effects for first-generation immigrants moving with one child, and to longer-term effects for women of the first migrant generation who had their first child in Germany.

While these results confirm the assumption that an adaptive behavior becomes more important with an increasing length of stay at destination, the ‘arrival’ effect seen among newly arriving immigrants is interesting.

Coming back to the question on the impact of socialization, the similarities between second-generation immigrants and West Germans seem to support this hypothesis. The second-birth risk of first-generation immigrants who had their first birth in Germany remains significantly higher than that of West Germans. The result of the comparison between countries of origin of the first generation is less clear. The elevated birth risks of Turkish women compared with West Germans points in the direction of the importance of socialization, but the differences with the other countries of origin are smaller than expected. The results rather suggest that compositional differences in socio-demographic characteristics and current living circumstances explain the fertility differentials between the first generation and West Germans to a large extent, though not completely.

3.5 Results: Transition to a third child

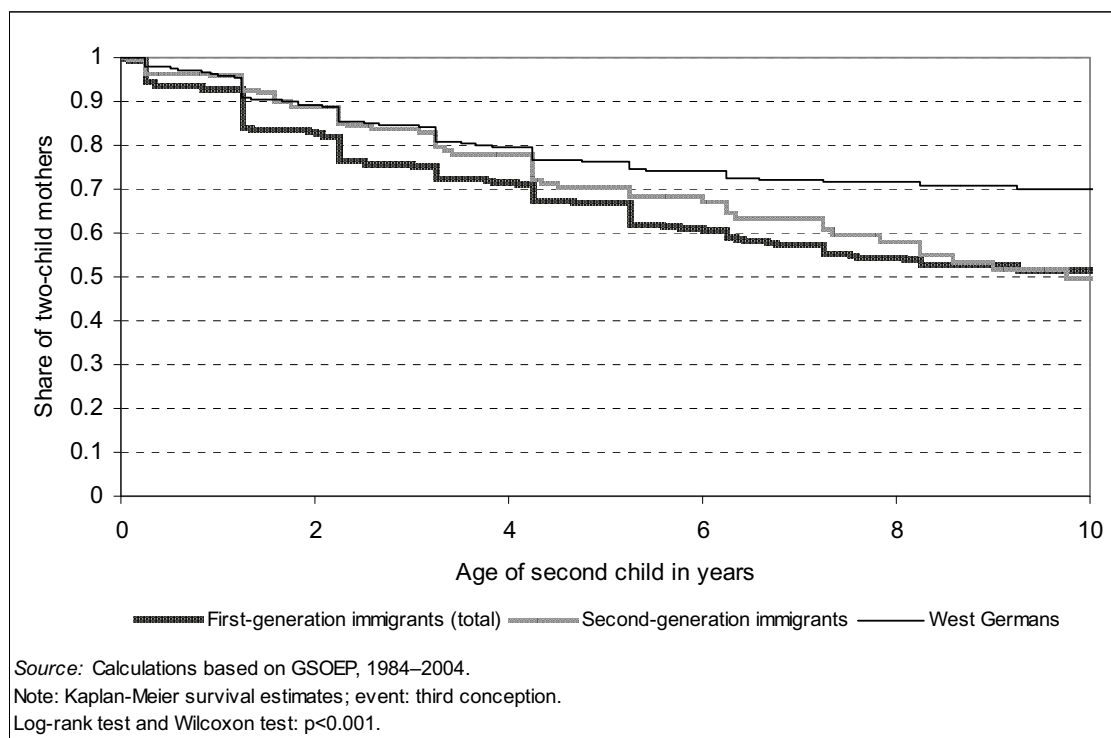
The analysis of the transition to a third child includes 415 women who belong to the first immigrant generation. Among them are 317 who had their first and second births in West Germany, 40 women who emigrated with one child and had the second birth in West Germany, and 58 first-generation immigrants who arrived with two children. The third-child sample also includes 172 second-generation migrants and 1099 West German women. All women in the sub-sample are included during the time spent in the first marriage.

3.5.1 Kaplan-Meier survival estimates

The basic process time is the time since the second birth, i.e., the age of the second child. Figure 13 gives the Kaplan-Meier survival estimates comparing the immigrant generations to West Germans (see also Table 32). The calculation for first-generation immigrants includes all women in this category, regardless of whether they moved to Germany while childless or after the first or second birth. This choice is related to the sample size, and to the fact that the results do not differ much with and without those women who had the second birth before the move.

Again, the results reveal significant differences between first-generation immigrants and West Germans ($p < 0.001$). More than 50 percent of the two-child mothers of the first immigrant generation progress to a third child, whereas only one-third of West Germans also have a third child. In contrast to the second-child analysis, significant differences occur between second-generation immigrants and West Germans ($p = 0.004$), but not between the first and second generations ($p = 0.45$). The share of two-child mothers having a third child is similar for first- and second-generation immigrants.

Figure 13: Transition to a third child, first- and second-generation immigrants and West Germans



The next step would be a comparison within the immigrant groups by origin. However, a differentiation by the various countries of origin is not feasible due to the small sizes of the respective sub-groups and their respective numbers of events. Turks are the biggest group in both immigrant generations. Their numbers of events are higher than the sum of births among the Yugoslavian, Greek, Italian, and Spanish women in the sample. Therefore, the women from the Southern and Southeastern European countries have been grouped together again.

Among the first immigrant generation, about 75 percent of Turkish two-child mothers have another child. The median age of the second child is 5.3 years. Of the SSEE countries, less than 40 percent progress to a subsequent child ($p < 0.001$). Second-generation immigrants from Turkey are less likely to have a third child than the first generation, but their transition is still significantly higher than that of second-generation women of SSEE background ($p = 0.012$; see Table 32, Figures 14 and 15).

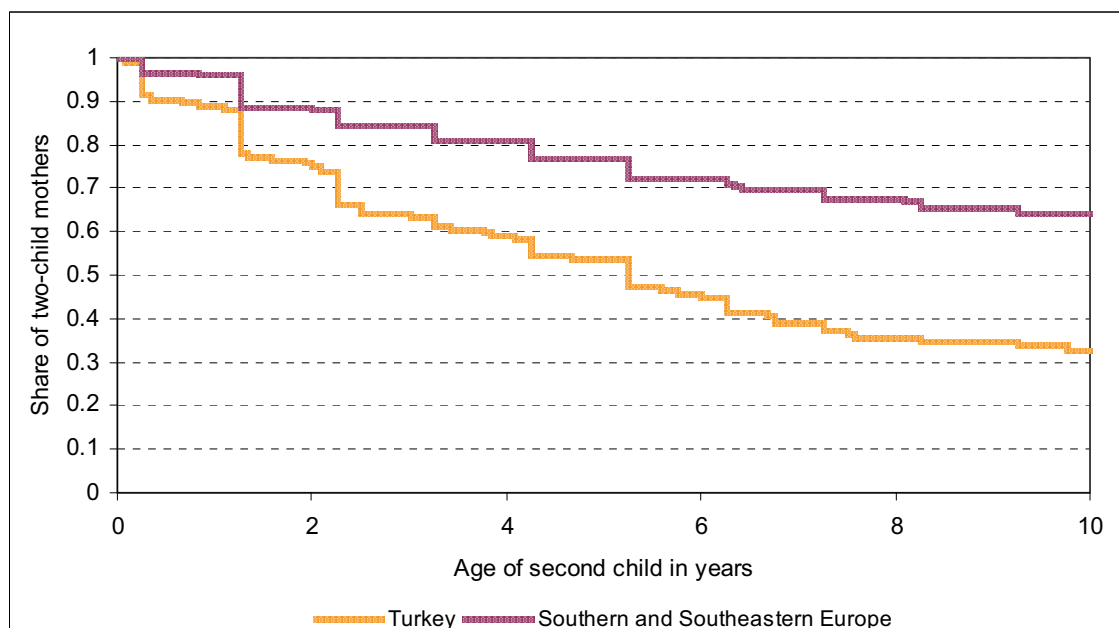
Table 32: Share of two-child mothers and median age of second child at third conception

	N	Share of two-child mothers in %	Median age of second child in years
<i>First-generation immigrants (total)</i> ^a	415	46.3	11.2
<i>First-generation immigrants with second birth in West Germany</i>	357	48.7	13.2
Turkey	153	24.3	5.3
SSEE ^b	204	61.1	n.a.
<i>Second-generation immigrants (total)</i>	172	45.1	9.8
Turkey	78	31.0	7.3
SSEE ^b	94	53.6	n.a.
<i>West Germans</i>	1099	66.8	n.a.

Source: Calculations based on GSOEP, 1984–2004; Kaplan-Meier survival estimates.

^a — Immigrants with second birth in West Germany and with second birth before move.

^b — SSEE (Southern and Southeastern Europe): Yugoslavia, Greece, Italy, Spain.

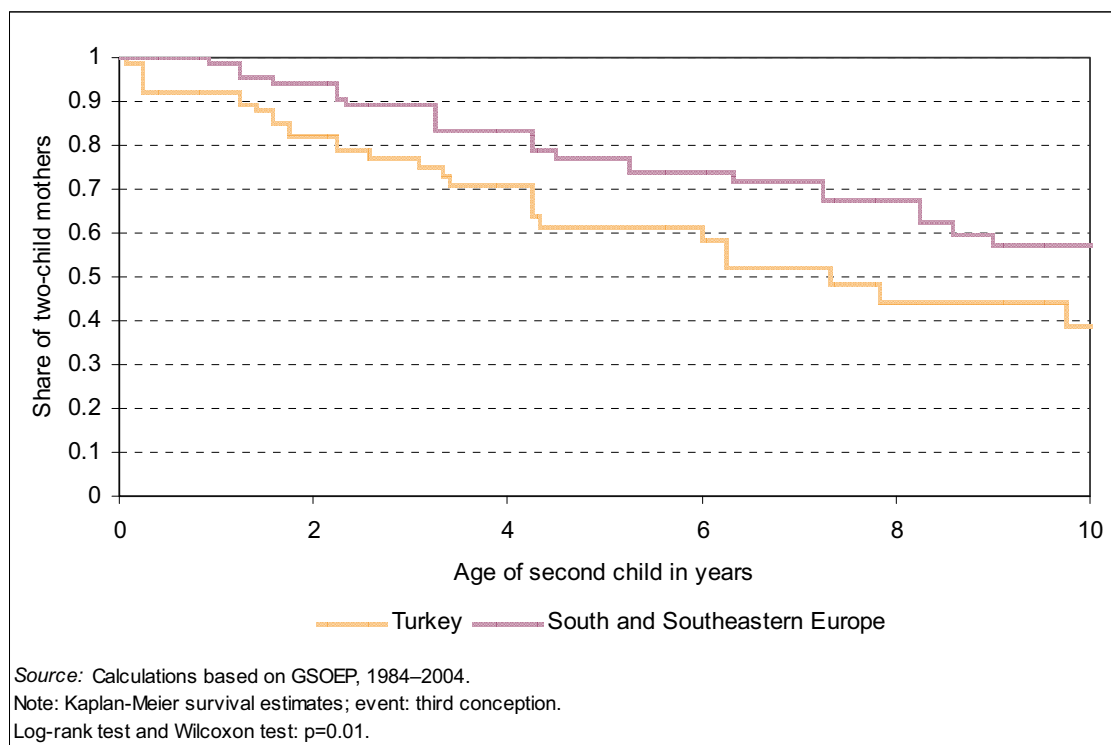
Figure 14: Transition to a third child of first-generation immigrants by country of origin

Source: Calculations based on GSOEP, 1984–2004.

Note: Kaplan-Meier survival estimates; event: third conception.

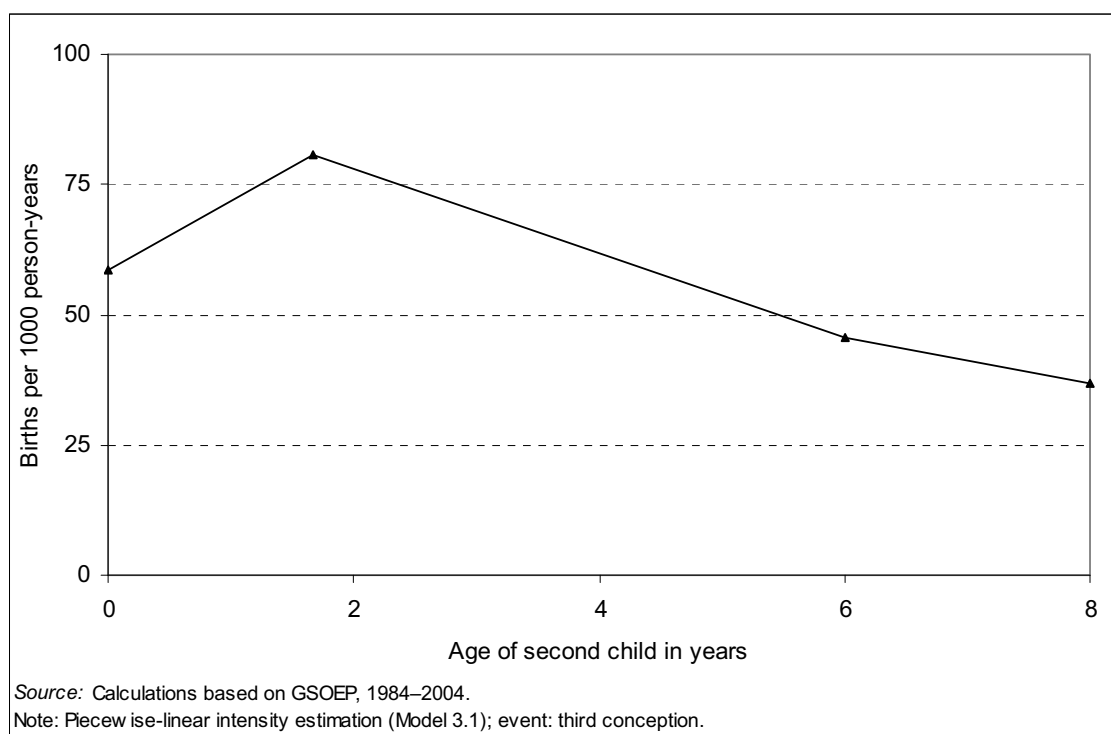
Log-rank test and Wilcoxon test: $p < 0.001$.

Figure 15: Transition to a third child of second-generation immigrants by country of origin



3.5.2 Immigrant generation and baseline intensity (age of the second child)

Model 3.1: The first modeling step in the intensity-regression analysis compares the immigrant generations to West Germans using the age of the second child as basic process time. Model 3.1 (Table 33, Figure 16, Appendix-Figure 19) applies the simple distinction between the first and second immigrant generations. In line with the analyses on the first and second births, first-generation immigrants have a significantly higher risk of having a third child than West Germans (+27 percent). The transition rates of women of the second generation appear to be elevated by almost the same magnitude, although the differences between the second generation and West Germans, as well as between the second and the first generations, are not significant.

Figure 16: Transition to a third child — baseline intensity**Table 33: Factors influencing the transition to a third child: Immigrant generation and timing of previous births and move — relative risks**

Variable	Model 3.1	Model 3.2A	Model 3.2B
West German	1	1	1
<i>Immigrant generation</i>			
First generation (total)	1.27 ***		
Second generation	1.24	1.23	1.23
First generation with:			
second birth abroad		1.77 ***	
second birth in West Germany		1.20 **	
first + second birth in West Germany			1.19 *
first birth abroad + second birth in Germany			1.33
first + second birth abroad			1.77 ***
<i>Age of first second child in months (slope)</i>			
0–20	0.016 *	0.016 *	0.016 *
20–72	-0.011 ***	-0.011 ***	-0.011 ***
72+	-0.009 ***	-0.009 ***	-0.009 ***
Constant	-5.320 ***	-5.308 ***	-5.308 ***
Log-likelihood	-4255.22	-4253.79	-4253.68

Source: Calculations based on GSOEP, 1984–2004; event: third conception.

Note: Significance: **=10%; ***=5%; ****=1%.

3.5.3 Stay duration of first-generation immigrants

Models 3.2: To explore whether it is possible to discern an effect of an interrelation of events for immigrants who arrived with two children, or an effect of adaptation or disruption among the first immigrant generation, we take into account the timing of the previous births and of the move in the next steps (the duration of stay cannot be included due to the small sample size). Model 3.2A (Table 33) compares women who had their first and second children before moving to Germany to those who had their second child in Germany (with the first child having been born either before or after the move). As in the case of the transition to the second child, we find significantly increased birth risks for the new immigrants compared with the birth risks for West Germans. These women have a 77 percent higher transition to a subsequent child, whereas the risk of the earlier immigrants is only 20 percent higher (also significant).

Model 3.2B further divides the group of the immigrants who had the second birth in West Germany by also taking into account whether the first birth took place before or after the move. The results show significantly elevated risks for the women who had both births in West Germany, but not for those who had one child abroad and the second one in Germany. Since the group with both births in Germany is the biggest in the sample and the number of events in the latter category is relatively small, the further steps in the analyses proceed with the distinction as introduced in Model 3.2A.

3.5.4 Women's characteristics

The women's characteristics are added in the next two modeling steps (Table 34).

Age at second birth

Model 3.3A: Model 3.3A controls for the age of the woman at the second birth (see Table 34). More than 40 percent of the women of both immigrant generations have had their second child before they turned 25, whereas this share is only about 20 percent among West Germans (see Appendix-Tables 64 and 65). Inserting this covariate reduces the significance of the difference in third-child risks between first-generation immigrants and West Germans, and also reduces the third-birth risks by about a third.

The effect of this variable are largely decreasing third-birth risks for the women who had their second birth at ages 25 to 29 (-45 percent), and at ages 30+ (-60 percent).

Educational attainment

Model 3.3B: This model adds the birth cohort and school education of the women (see Table 34). The decrease in the birth risks of the immigrant groups (though group differences are not significant) indicates that compositional differences between the groups play a role in explaining the fertility differentials: second-generation migrants are overrepresented in the birth cohorts 1960+, and the third-birth risk for this group is around 40 percent higher than that of women born before 1960 (see Appendix-Table 63).

Table 34: Factors influencing the transition to a third child: Women's characteristics — relative risks

Variable	Model 3.3A	Model 3.3B
West German	1	1
<i>Immigrant generation</i>		
First generation with second birth abroad	1.23	1.11
First generation with second birth in Germany	1.06	0.96
Second generation	1.03	0.85
<i>Age at second birth in years</i>		
<25	1	1
25–29	0.55 ***	0.54 ***
30+	0.40 ***	0.38 ***
<i>Birth cohort</i>		
1946–59		1
1960–69		1.37 ***
1970+		1.44 **
<i>School education</i>		
No degree		1.34 **
First or other degree		1
Second degree		1.29 **
N.A.		1.47
Constant	-4.803 ***	-4.964 ***
Log-likelihood	-4212.75	-4201.66

Source: Calculations based on GSOEP, 1984–2004; event: third conception.

Note: Significance: **=10%; ***=5%; ****=1%; controlled for the age of the second child.

As far as educational attainment is concerned, a U-shape effect is found (Model 3.3B, see Table 34). Women without a school-leaving certificate have a 34 percent higher risk of having a third child than women with a first degree. With a share of about 30 and 20 percent, respectively, first- and second-generation immigrants are far more frequently found in the category without a formal educational degree than West Germans (see Appendix-Table 66). As in the analysis of the second child, having a higher level of education also increases the transition to a third child. This applies to both immigrant groups as well as to West Germans, and these results are in line with the findings in a study by Kravdal (2007).

3.5.5 Partner's educational attainment

Model 3.4: Next we control for the educational attainment of the spouse. Inserting this covariate to the model further diminishes the birth-risk differentials between the groups under consideration.

The educational background of the spouse has a U-shaped influence on third-birth risks. Women who are married to a man without a school-leaving certificate (here, the biggest group in the sample are first-generation immigrants, see Appendix-Table 67) have transition risks that are almost 60 percent higher than those of women married to a husband with a first degree or with secondary education (+25 percent; see Table 35).

Table 35: Factors influencing the transition to a third child: Spouse's educational attainment — relative risks

Variable	Model 3.4	
West German	1	
<i>Immigrant generation</i>		
First generation with second birth abroad	1.12	
First generation with second birth in Germany	1.11	
Second generation	1.02	
<i>Age at second birth in years</i>		
<25	1	
25–29	0.60	***
30+	0.44	***
<i>Birth cohort</i>		
1946–59	1	
1960–69	1.43	***
1970+	1.86	***
<i>School education</i>		
No degree	1.39	**
First or other degree	1	
Second degree	1.26	*
N.A.	1.85	*
<i>Spouse's school education</i>		
No degree	1.59	***
First or other degree	1	
Second degree	1.25	**
N.A.	3.37	***
<i>Constant</i>	-5.492	***
Log-likelihood	-4127.86	

Source: Calculations based on GSOEP, 1984–2004; event: third conception.

Note: Significance: **=10%; ***=5%; ****=1%; controlled for the age of the second child.

3.5.6 Immigration background

Models 3.5: Finally, in order to test the socialization hypothesis, we draw a comparison within the immigrant generation groups by country background. Again due to the sample size, the women of Yugoslavian, Greek, Italian, and Spanish descent are grouped into a single category again (SSEE — Southern and Southeastern Europe). Model 3.5A (Table 36) detects significant differences between Turkish women and women from SSEE countries. The highest transition rates to a third child are estimated for first-generation immigrants from Turkey, whose risk is 73 percent higher than that of West Germans. In contrast to the second-child behavior, second-generation migrants of Turkish descent have significantly higher transition rates, as well (+42 percent).

Meanwhile, the risk of having a third child is significantly lower for first-generation immigrants from SSEE countries (-27 percent compared to West Germans), whereas the difference between the second SSEE generation and West Germans is not significant.

Model 3.5B controls for the country background of the husband for immigrants only (conditional covariate). This step does not significantly change the results, and it should be noted that the vast majority of the immigrant women in the third-child sample are homogeneously married.

Table 36: Factors influencing the transition to a third child: Characteristics of immigration background — relative risks

Variable	Model 3.5A	Model 3.5B
West German	1	1
<i>Immigrant generation and country of origin</i>		
First generation with second birth abroad ^a	1.11	1.12
First generation with second birth in Germany, Turkey	1.73 ***	1.75 ***
First generation with second birth in Germany, SSEE ^b	0.73 **	0.74 **
Second generation, Turkey	1.42 *	1.41 *
Second generation, SSEE ^b	0.84	0.84
<i>Spouse's origin</i> ^c		
Migrant from same country		1
Migrant from different country or German		1.03
N.A.		0.92
Log-likelihood	-4113.32	-4113.24

Source: Calculations based on GSOEP, 1984–2004; event: third conception.

Note: Significance: **=10%; ***=5%; ****=1%; controlled for age of the second child, age at second birth, birth cohort, school education of the woman; school education of spouse.

^a — Turkey, Yugoslavia, Greece, Italy, Spain.

^b — SSEE (Southern and Southeastern Europe): Yugoslavia, Greece, Italy, Spain.

^c — Conditional covariate for immigrant women.

3.5.7 Further covariates

Further control variables have been added to this analysis as well. Their sample statistics and results are displayed in the Appendix (see Tables 68–71). In contrast to the analysis of the previous births, the variables on the type of place where the women lived at age 15 and the religious affiliation do not influence the parity-transition rates.

One finding may be interesting: women who have two children of the same sex are significantly more likely to have another child than mothers of a boy and a girl. This

applies to immigrants as well as to West Germans, and confirms the findings of international literature (Andersson, Hank, and Vikat 2007).

3.5.8 Intermediate conclusion

The analysis of the third-birth behavior once again contradicts the hypothesis of disruption. No fertility-decreasing effect can be found either for immigrants who have lived in West Germany for several years and had one or both precedent births in that country, or for immigrants who moved with two children. Instead, as in the case of second births, there appears to be an ‘arrival’ effect for mothers moving with two children, as these women have elevated fertility risks compared to the other immigrant groups and West Germans. These risks can be explained, however, by compositional differences between the new immigrants and West Germans: these immigrants have had the first two children at relatively young ages, and are therefore more likely to have another child. The age at the second birth is also the crucial explanatory variable for the elevated birth risks of the first-generation immigrants who arrived in West Germany before the second birth.

As for the hypotheses of adaptation and socialization, evidence for both can be found: first-generation immigrants who moved without children or with one child to West Germany have smaller transition rates than immigrants who moved with two children. That the risks are nevertheless elevated is explained by the young age at second-time motherhood.

Most important, however, is the support of the socialization hypothesis found here. First-generation immigrants show large differences by country background, with Turks having much higher birth risks than West Germans, and women from SSEE countries having even lower risks than Germans. The differences continue in the second generation, except that the birth risks of the second generation from SSEE countries and West Germans are not significantly different from each other.

4 **Discussion**

4.1 Conclusions for hypotheses — 4.2 Reflections and perspectives

In this chapter we discuss the results in the context of the theories and our working hypotheses on the impact of international migration on fertility. Some reflections are then offered on the work presented here. The study concludes with perspectives for further research.

The analyses of the transitions to the three parities have shown the importance of distinguishing between immigrant generations when we study the fertility behavior of immigrants from Turkey, the former Yugoslavia, Greece, Italy, and Spain in West Germany. First-generation immigrants are more likely to have a first, second, and third child than are West Germans, whereas women of the second generation have the higher transition rates only for the first (and the third child without significance). The differences in fertility risks between first- and second-generation immigrants are significant for the transitions to a first and second child, but not for the third child.

4.1 Conclusions for hypotheses

Disruption

None of the three analyses finds any evidence for a disruptive effect of migration on fertility. On the contrary, first-generation immigrants have higher transition rates to each of the three births than women of the second immigrant generation and West Germans. In fact, we find that women who immigrated with a child have higher parity-progression rates than first-generation immigrants who had their first child in West Germany. Even so women in the latter group have higher birth-transition rates than West Germans. Therefore, we conclude that there is neither a short nor a mid-term disruption effect of the migration (or due to a minority-group status) as such on fertility.

There is only a single exception, namely that this generalization does not hold for the third birth when the country of origin is taken into account. We find that first-generation immigrants from Southern and Southeastern European (SSEE) countries actually have significantly lower third-birth risks than West German women (Turks show higher risks than do West Germans). Since the lower risks occur only in the third-birth behavior, we do not see this as a disruption effect. We would rather place the lower third-birth risks of women from SSEE countries in the context of socialization and see these differences as reflections of the fertility changes in the respective countries of origin along with adaptive behavior at destination.

The results of this study also contradict the assumption of fertility disruption in the second immigrant generation. The women in the sample have either slightly elevated or similar transition rates compared to West Germans. One reason for the fertility-disruption hypothesis has been that belonging to a minority group could cause frustration and uncertainty as a reaction of negative experiences, such as discrimination by members of the majority population, which may lead to reduced birth intensities. The fact that the fertility rates of second-generation immigrants are no lower than that of the majority population does not prove the absence of minority-group experiences, of course. It only suggests that a minority-group behavior — if it exists — does not result in a low-fertility strategy.

This fits with our findings related to the second part of the minority-group assumption: the effect of employment. Based on household-economic considerations, it has been posited that immigrants of both generations may give priority to economic goals, and thus may invest less in fertility. This should lead to lower fertility among immigrants when employment status is taken into account. In addition, we believed that non-employed women would have lower fertility than gainfully-employed women if their actual goal was to achieve economic position instead of, or prior to, investing in family formation. We did not find this in our data. Therefore, the disruption assumption based on economic arguments and minority-group status must be rejected for women of Turkish, Yugoslavian, Greek, Italian, and Spanish descent in Germany. Like everywhere else, women's employment and fertility are increasingly seen as competing careers in West Germany, and this trend also applies to West Germans.

Interrelation of events

By contrast, the hypothesis that family events and migration are interrelated is supported: first-generation immigrants who move to West Germany without a child experience migration, first marriage, and first conception within a short time span. Child-transition rates are highly elevated in the first two years after arrival. This effect would be even more pronounced if the analysis had included women of the first immigrant generation who had become pregnant shortly before migration, because one might suspect that the pregnancy occurred in anticipation of the move.

The analysis of the first birth demonstrates the strong connection between the first marriage and the first child, and suggests that these transitions are endogenous to each other (Baizan, Aassve, and Billari 2003). For the first child, marriage duration seems to be a more important factor than the immigration background of the partner; it matters little whether the partner immigrated from the same or another country, or is of West German origin. First-child risks are high in the first year following a woman's immigration and in the first year of marriage in any case.

Taking spatial separation of the spouses into account, we have found higher transition rates to motherhood for immigrants who followed after their husbands, and for women who moved to West Germany in order to form a household with either a second-generation migrant or a West German, as compared to immigrant women who moved together with the husband. The conclusion is, therefore, that the temporary separation in itself does not trigger the transition to motherhood. Temporary separation can rather be seen as indicating that one of the spouses has already become familiar with the living circumstances at destination. This familiarity may facilitate the decision to have a first child, in contrast to situations in which both partners have to get used to the new living environment at the same time. However, the size of the sample used for this part of the analysis is not large, and, accordingly, the number of women in a few categories is smaller than we would like to see.

As the transition to a first pregnancy is much accelerated in the first year following the move of first-generation immigrants, it seems that having a first child marks the end of a couple's migration process. A child may also strengthen the position of an immigrant wife, since becoming a mother 'completes' the union of the partners

and solidifies the status of the family. Especially in patriarchal family structures, motherhood confers value and prestige upon a woman.

This mode of thinking has been confirmed in interviews with immigrants in Germany, and with women and men in and from the respective countries of origin. The work on this doctoral thesis was accompanied by unstructured interviews with immigrants and migrant children from the five countries of origin in Germany. During travels to Italy, Spain, and Turkey, I also conducted interviews with men and women there.

Additionally, it has been emphasized in the literature that a child also strengthens the connection between the two families of origin.¹⁷ If a marriage was arranged or supported by family members in a traditional manner, having children early may be seen as desirable by the young couple and their relatives. This attitude is reflected in the transition rates to motherhood; such rates remain slightly elevated for second-generation migrants of Turkish background.

The analyses of the subsequent births show, however, that the hypothesis of the interrelation of events is not only true for the ‘three-pack’ of migration, first marriage, and first child of first-generation immigrants. The study reveals that women moving with one or two children also exhibit higher subsequent birth risks than women who immigrated before they had any children, and also higher rates than West Germans. This ‘arrival’ effect may be related to at least four factors.

First, there is the uncertainty factor. A situation that entails major life changes, such as those associated with international migration, may create feelings of uncertainty for individuals or couples. Children may be seen as reducing uncertainty in such instable situations (Friedman, Hechter, Kanazawa 1994). In interviews with immigrants in Germany, they frequently said that mothers also anticipate and appreciate the role of a (small) child within the new living environment. A child attending a German *Kindergarten*, for example, would learn German much better and faster than the parents, and may even be expected to help the parents with language problems later on. Moreover, having children would make it easier to build up a social network in the new

¹⁷ Straßburger (2003) has shown, for example, that second-generation migrants of Turkish descent in Germany see their union as constituting a link between the two families.

place. These arguments may also apply to first-generation immigrants who were childless at the time of the move.

Second, as in the case of the first-child considerations, the move of the woman may serve to complete a migration project of a whole family and end the spatial separation of the husband and wife. Even when the couple does not get married, the process of the formation of the new household or the reunion of the spouses and the family may lead to a ‘confirmation’ effect as well.

Third, relatively high transition rates after a move could be interpreted as catch-up behavior for births that were postponed in the phase preceding the move. This remains a speculation, however, for it cannot be demonstrated with the data used here since the dataset does not contain information about the women who remain in the respective countries of origin. (Given adequate data one would look for reduced fertility after the separation of the spouses.)

Fourth, women who moved after the first or second child had been born were relatively young when they became mothers. Younger women may be more prone to have a bigger family than women who become mothers at later ages would have, as is traditional in the respective countries of origin, and may therefore intend to have more children. Again, this is a speculation that cannot be checked with our data.

Adaptation

The study supplies ample evidence supporting the hypothesis of adaptive behavior of first-generation immigrants. Women who arrived childless in West Germany show birth risks that decline with increasing length of stay in Germany, and the risks of having a subsequent birth is lower than that of first-generation immigrants who arrive only after having one or two births. For the first birth, we have suggested that German citizenship and the German residence permit do not have a direct impact on the fertility of women in the traditional migrant-worker groups. We do not suspect that women of ‘guest-worker’ groups aim at acquiring the German nationality by childbirth in Germany, since the numbers of naturalizations among ‘guest-worker’ groups are relatively low in general (Diehl 2002b). This suggests that persons of these populations do not need to secure their status by acquiring German citizenship. One may, however, hypothesize

that persons who have attained German citizenship may feel that their stay in Germany is thereafter more secure, and that their circumstances are therefore more appropriate for family formation. A test of this hypothesis must, however, be left to future research.

However, there are other (West) German laws that may directly or indirectly affect the childbearing behavior of immigrants. The first is the law relating to the childcare benefit, which is generally paid for two years: women from EU countries receive the benefit even if they give birth to and raise the child in their country of origin, provided that they worked in Germany before the childbirth. This is in contrast to rules that apply to families from non-EU countries, who, since 1986, only receive child benefits for children born and raised in Germany (Schwarz 1996). Hence, women from Turkey and the former Yugoslavia may postpone childbearing in anticipation of the move. Note that the mean age at immigration of the first-generation immigrants in the first-child sample is about 20 years. Compared to the women in the country of origin, Turkish immigrants, for example, may have postponed the birth of a first child in anticipation of the move to West Germany; almost every second woman who lives in Turkey has become a mother by this age.¹⁸

The work permit is the second law that is relevant in the context of the fertility behavior of immigrants. Since the end of the recruitment policies, foreigners moving to Germany have not been allowed to work immediately¹⁹. People coming from EU-member states are not affected by this rule, in contrast to family members of persons from non-EU countries who move to Germany for reasons of family reunion. Since 1974, persons immigrating for reasons of family reunion have not received a work permit during the initial years following the immigration (Münscher 1979, Angenendt 2002). Therefore, the first two or three years following the move may be seen as a time that offers few opportunities likely to compete with childbearing and childraising; in other words, immigrants may view this interval as a good time to have children.

This reasoning seems to be supported by the effect of employment status in the analyses. However, caution should be used in interpreting the employment figures. On

¹⁸ If compared to the first-generation immigrants who gave birth before they moved to West Germany, immigrants coming without a child are on average about two years older at entry into motherhood. This may indicate that migration postpones childbearing, however, such a comparison is not reasonable since it conditions the emigrants on the later move, and we do not have information on all women in the countries of origin, either.

¹⁹ The recruitment of highly qualified IT specialists from non-EU countries has been an exception since 2000.

the one hand, women of the first immigrant generation may anticipate family formation, and may therefore not intend to become gainfully employed during the first few years following arrival (endogeneity). On the other hand, non-employment has a fertility-increasing impact on second-generation migrants and on West Germans as well (Kreyenfeld 2001a). Given that, for a long time, West Germany has encouraged young mothers to stay at home, women may regard motherhood as an alternative career in general.

Concerning the second child, the association of non-employment and higher birth risks is confirmed, again both for immigrant women and for West Germans. In addition, the impact of women's educational attainment on birth risks is similar for immigrants and West Germans, in that birth risks among women with higher levels of education are higher for the second and also for the third child. The results of this study stress that immigrants react to similar circumstances in ways similar to persons of the host society. This applies to the effects on fertility of educational attainment, employment status, and union formation, and confirms the hypothesis of adaptation, as it has been found for other countries. Note that these patterns vary between countries, however: Whereas non-employed women in Germany are more likely to give birth than women in the workforce, the birth risks are lower for non-employed women in Sweden, for example. The speed and nature of converging behaviors between immigrants and native-born persons may also depend on the degree of similarities or differences between the countries of origin and destination (Carlson 1985b, Kreyenfeld 2002, Nahmias 2004, Andersson and Scott 2005, Andersson and Scott 2007).

Another channel of the adaptive process can be seen in the origin of the partner. Whereas the background of the spouse does not play a role in first-birth behavior, it does so for the second child: women who are married to a West German partner or a man from a third country have lower second-birth risks than women in a homogeneous marriage. The sample size is too small to allow for distinctions to be drawn between West German and third-country men, but it may be concluded for West German men that, because West Germans grew up in a lower-fertility context, they may have lower fertility preferences than the immigrant wife. Hence, the influence of the West German husband may play a role in the decision-making process concerning a subsequent child. It is, however, also possible to regard immigrant women who marry a partner from

West Germany or from a third country as a selected group whose fertility intentions are lower anyway compared to those immigrant women who marry a partner of the same origin.

Selection and characteristics

The ‘three-pack’ of marriage, migration, and first child suggests that women of the ‘guest-worker’ population are a selected group. First-generation immigrants were found to have moved to West Germany mainly for reasons of family reunion or family formation. Immigrants who move for these reasons may be prone to having a first child faster. Unmarried women immigrating to West Germany, by contrast, have lower transition rates to a first birth than their counterparts who were married by the time of the move. The lower birth rates of single migrants may be attributed to the partner-selection process, a process that may last a relatively long time because it takes place in a new living environment. The lower transition rates may also be the result of selection, as single immigrant women may come to Germany for different reasons than married women. Consider here, for example, the participation in higher education.

In addition, our analyses confirm the hypothesis of compositional differences between the immigrant generations and West Germans. Fertility differentials are diminished or disappear when we control for socio-demographic factors of the women. This applies both to first- and second-generation immigrants. For the first-child analysis, however, compositional differences, such as by educational attainment, do not fully explain fertility differentials between the immigrant groups and West Germans. Marriage is the covariate with the largest influence on fertility.

In order to fully address the hypothesis of selection, it is necessary to take into account the completed number of children, since this theory refers to lifetime intentions. Compared to West Germans, on the one hand, first-generation immigrants appear to have higher fertility preferences and a higher realized number of children. On the other hand, international migrants are a very selected group, also in terms of spatial mobility. As in the case of traditional ‘guest workers’, the men, but also their spouses and female migrant workers, left their countries in order to find work, that must have looked more promising to them than the opportunities available at home. People who willingly face the challenges associated with international migration — such as uncertainty, spatial

separation if already married, a postponement or interruption of the family-formation process — can be assumed to be different from the persons who do not emigrate. Therefore, the emigrants are supposed to have lower fertility preferences than the ones who stay behind at origin.

The results of the transitions to three births in this study suggest that women of the first immigrant generation are a selected group with an ideal of having children, but of a family size that is somewhat smaller than is typical of the respective countries of origin.

Socialization

Fertility differentials that remain after controlling for duration factors and compositional differences between the groups under investigation are usually attributed to the impact of socialization. This study finds evidence for the socialization hypothesis as well.

The first aspect of the socialization hypothesis is the comparison between the immigrant generations: second-generation migrants have birth-transition risks that resemble more closely those of West Germans than those of first-generation immigrants. The second aspect, differential fertility due to differences in the countries of origin, has also been shown to be true in our study. Although country differences do not occur directly in the first-birth analyses — probably because they operate in this context through the marriage channel — they are especially apparent in third-birth behavior. Large differences in third-birth risks are found for first-generation immigrants by country background, with Turks having much higher birth risks than West Germans, and women from the former Yugoslavia, Greece, Italy, and Spain having even lower transition rates than German women. This confirms Kane's (1989) prediction that the number of children of Turkish background in West Germany would remain higher than that of West Germans in the decades to come.

The fertility differences between women of Turkish descent and women of SSEE background continue in the second generation, with Turks having higher fertility. Since one of the working hypotheses of our study is that the welfare-state framework and the low-fertility context in West Germany tend to influence fertility behavior to the extent that women of the second immigrant generation start to exhibit fertility behaviors similar to those of West Germans, the question arises as to why the 'Turkish case' is

different. Coming back to the minority-group argument, the study does not suggest that Turks in Germany follow a path that leads to ‘segmented assimilation’ (e.g., Portes and Zhou 1993). According to the segmented-assimilation theory, the socio-demographic development of a minority group would follow a path that is distinct from the pattern of another group. Since social capital and inter-generational mobility are not the topic of the study presented here, no conclusion can be drawn on this subject. The sample does, however, give the impression that there is a trend towards higher educational attainment among the second generation than among the first generation. Although the socio-demographic structure of all immigrant groups may still be characterized by the former ‘guest-worker’ milieu, there appears to be a development towards a differentiation within each country group. This has also been pointed out by several authors (e.g., Bade 1984, Fritzsche 2000).

Even though the segmented-assimilation theory cannot be supported for the West German context, it seems that the argument of cultural sub-groups receives support: family norms, values, and behavior are influenced by the socio-cultural context. Fertility behavior can, therefore, provide a hint as to whether a social context exists that provides its members with values that are different from others. In the ‘Turkish case,’ it seems that there continues to be a stronger orientation towards marriage and a higher number of children than is the case among Germans and women from SSEE countries.²⁰

What are the specific differentiating factors? First, there is the strong association between leaving the parental home and marriage in the Turkish community. Young women often mention marriage as the only way they may leave the parental home (Straßburger 2003). Second, marriage and childbearing are themselves connected. That not only means that non-marital childbearing is not tolerated, but also that childless marriages are not well-regarded (e.g., Yavuz 2008). Third, a high share of transnational marriages, i.e., with persons from Turkey, reinforces ‘traditional’ Turkish values that are often seen as pure, and in opposition to German majority values and behaviors (Straßburger 2003). Obviously, there is a Turkish family culture which is subject to norms and ideals, and which also transmits these values. Religious affiliation does not appear to have an impact on fertility behavior, but culture clearly does.

²⁰ This has also been shown for women and men of Turkish descent in The Netherlands (de Valk 2006).

4.2 Reflections and perspectives

Our study confirms findings based on macro indicators and other findings from the literature that suggest that immigrants will have higher fertility levels than persons of the receiving society. Although some of our findings fall within the range of conventional expectations — such as the differences between the first and second immigrant generations, or the almost self-evident transition rates to motherhood of first-generation immigrants — our study gives more detailed insights into the impact of international migration on fertility behavior than was previously available. The parity-specific view that takes into account the length of stay in West Germany allows us to detect the dynamic nature of the family-formation process (Kulu and Milewski 2007). The analyses also take the partner's characteristics into account, since decisions about fertility are not usually made by a single person. Controlling for traits of the socio-cultural background and living circumstances indicate that the current societal context has a strong influence on fertility behavior.

There appear, however, to be a few points in our study that should be highlighted. In future research, they may deserve special attention or a different treatment in the analysis.

Disruption and union dissolution

Our results strongly suggest, for example, the rejection of the hypothesis of short- and mid-term impacts of international migration, or being of immigrant descent, on fertility. However, our analysis takes into account only persons with very specific migration conditions (migrant workers and family re-unions). Moreover, it includes only women who are single or in their first marriage; it excludes the time after the first marriage in cases of separated persons. The sample restriction was due to the small number of occurrences of marriage dissolution in the first- and second-generation sub-samples. Nevertheless, the point needs to be made that international migration, or having an immigration background, must not necessarily have a *direct* influence on fertility. Spatial separation of the partners, 'cultural shock,' maintenance of an extended family

network over several countries, changes in the conditions of daily life, language problems, and other factors accompanying international migration may lead to a union disruption. In such a case, fertility disruption following union dissolution would then occur only as an *indirect* effect of international migration.

The number of divorced persons is, however, very small in the immigrant groups in our study. Therefore, we think that the exclusion of the period of time after the first marriage from the sample did not harm our model specifications. The small number of union dissolutions in the respective age groups in our study rather suggests that an indirect disruption impact does not seem to be important in the ‘guest-worker’ population.

It is, however, also important to keep in mind that divorce may not be an option for first-generation immigrant women who moved to West Germany for the purposes of family reunion. First, the right to a residence permit and marriage are interconnected for non-EU persons for the first years of marriage (c.f. Fleischer 2007). Second, divorce rates have been very low in the respective countries of origin. The situation may be different for women who are married to a West German man or a partner from a third country. They are a selected group anyway, and their divorce rates are higher than those of homogeneously married couples (Roloff 1998). Hence, researchers may wish to bear this mind when considering future developments, since the number of persons of the second immigrant generation in Germany is growing, and their divorce rates appear to be rising, as well.

Adaptation and selection of first-generation immigrants

For first-generation immigrants, another possible avenue of research would be to investigate the hypotheses of adaptation and selection in more detail. Our study mainly centers on comparisons between first-generation immigrants who arrived childless in West Germany, and those who moved to West Germany with one or two children, as well as on the impact of stay duration on these women.

Another possibility worthy of investigation is a comparison of the fertility behavior of emigrants with that of women who stayed in the respective countries of origin. Our study indicates, for example, differences in first-birth behavior. Turkish

women who move without a child to West Germany tend to become mothers at higher ages than their counterparts at origin. For a third birth, we find that about 75 percent of Turkish two-child mothers of the first immigrant generation also have a third child in West Germany. When we compare this share to the progression rates of women in Turkey, the levels appear similar. In Turkey, however, there is a fertility-declining trend towards the two-child family that is most apparent for Turkish-native speakers (and less so for ethnic-language minorities; c.f. Yavuz 2008). Therefore, it may be hypothesized that, when international migrants are a selected group, a cross-over will appear for Turkish emigrants and those who remain in Turkey (this has been seen, for example, in the case of Mexicans emigrating to the United States [Frank and Heuveline 2005]).

Moreover, comparisons could be made between the experiences of emigrants from the same country, but at different destinations, in order to take into account more effectively the role of the receiving society in shaping or changing the fertility behavior of international migrants.

Second-generation immigrants

In general, the sample is very small. For the purposes of future analysis, it may be worthwhile to further differentiate the second immigrant generation; for example, to distinguish persons who moved with their parents from persons who were born at destination. Immigrant children who moved country during childhood may feel more attached to their country of origin and be more likely to maintain social networks there than persons of the second generation who were born in West Germany only after their parents' move. Therefore, the influence of the culture of the country of origin and of social networks, both in the country of origin and in Germany, may be different for the two groups of the second generation, and may lead to differences in family formation and fertility as well.

Family patterns

Finally, we would like to point out that fertility behavior must be seen in a wider context. Our analysis is able to show fertility patterns of immigrants in West Germany

and influencing factors, but it cannot explain in full why these patterns and differences between the sub-groups occur. In order to fully understand fertility behavior of immigrants, one must probably also take into account union formation and its interplay with education within a sub-cultural setting. We may illustrate this with an example: the interrelation of educational attainment and marriage among members of the Turkish community, since employment and family have been seen as almost excluding each other for long. Therefore, women who do not intend to seek gainful employment may not participate in any school education that exceeds the basic school-education requirements in the respective countries of origin or in West Germany.²¹ Therefore, women without a school degree or with a first-grade certificate may not have higher fertility because they have a lower levels of education than others; rather, they may choose to forego higher education because they want to marry relatively early and have children. Accordingly, the age at entry into motherhood turns out to be the crucial factor for the second birth, as does the age at second birth for the third child. The younger a woman was when she became a mother, the more likely she is to have more children than later mothers. Therefore, women may fall into a ‘family trap’ when they become mothers at a young age, after which they can no longer catch up with further education.

By contrast, women who are more work-oriented may fall into an ‘education trap’ by postponing family formation in order to continue in higher education, and settle first in work before having a child, as seen in recent developments in Italy (Delgado Perez and Livi-Bacci 1992). As far as the immigrant generations from Southern and Southeastern European countries are concerned, one cannot draw conclusions about a sub-group behavior in West Germany by looking only at fertility. Both the developments in the respective countries of origin and the fertility behaviors of the immigrants and Germans in West Germany show similarities. In order to answer the question of whether strong family ties continue to exist in West Germany, one also has to investigate other factors, such as age at leaving the parental home, non-marital cohabitation, living in extended households, and gender roles.

²¹ Kelek (2006) has pointed out that ‘the’ strong Turkish family coincides with a high degree of social control, as well as a lack of individualization and self-responsibility. Early marriage is seen as desirable mainly for women. Parents may not invest in the (higher) education of their daughters when they assume that the daughter will marry at age 16.

Attention to gender roles is especially important in the context of family policies and women's policies. Immigrant sub-groups within a population may be different from, or show more variations than, the majority population; examples are prominent in family structure, social inequality, family relations, and division of labor between women and men. Since welfare states are based on certain assumptions about the relative homogeneity of their populations, it may be rewarding and necessary to investigate the effects of policies on sub-groups who differ from the majority population.

'Guest workers' and their descendants are only one of the immigrant groups in today's Germany. Future research may also consider other immigrant groups, such as refugees and asylum seekers, and newer immigrant types, such as single migrant women. Initial studies (e.g., Fleischer 2007) show that the fertility behavior of women in these groups seems to be quite different from that of the 'guest-worker' population. One may, however, conclude that in general the low-fertility context in West Germany has a large impact on international migrants in Germany, and that they tend to adapt to the low fertility levels relatively quickly. Hence, our study confirms other research that has indicated that low-fertility countries, such as Germany, cannot rely on the immigrant population to compensate for low fertility (Sørensen 2007).

5 Summary

This doctoral thesis investigates the impact of international migration on the transitions to a first, second, and third child among women from Turkey, former Yugoslavian states, Greece, Spain, and Italy who have immigrated to West Germany. A distinction is made between first-generation immigrants and their descendants.

International migration is associated with rapid changes in the migrants' environment. These changes usually take place within a much shorter time span than societies alter as a whole. Immigrants have to cope with these changes quickly. Therefore, a study of the demographic behavior of migrants enables us to gain insights into the patterns and speed of the demographic responses of individuals or groups to the sudden environmental changes they are exposed to. The life-course approach allows us to analyze the sequencing of several events, and, therefore, to study the short-term as well as the long-term effects of migration on a person's life.

Our study addresses the following questions: Does international migration, and the related cultural and socio-economic consequences, have a depressing or a stimulating effect on childbearing behavior? Do immigrants tend to continue to display the behavior of their old environment, or do they adopt the behavior of the new environment? Does the behavior of the immigrants' children resemble that of their parents, or that of the population at destination?

The first chapter of the thesis provides an overview of Germany's immigration history since 1945. Germany has been one of the main countries of destination in Europe. Three main types of international migration can be distinguished; these are labor immigration, the immigration of ethnic Germans, and the immigration of non-German refugees and asylum seekers. Today, about eight percent of the population in Germany is of foreign nationality. Their main countries of origin are Turkey, Italy, Greece, and the states formerly belonging to Yugoslavia. The first chapter subsequently gives a summary of research carried out on the fertility of immigrants in Germany. In the 1960s, only about five percent of newborn children in Germany were of non-German nationality. But by the end of the 20th century about 13 percent of all newborns were foreign nationals. The increase in the share of foreign births of the total number of

births is related not only to a slight increase in the number of foreign births, but also to the decline in West German births. Although international migration is generally associated with a reduction of births, the level of childlessness is lower among the various immigrant groups in West Germany than in the German population. Moreover, immigrants more often have three and more children, whereas there is a dominance of the two-child family among West German married couples.

The second chapter of the thesis provides the theoretical framework and an overview of previous empirical investigations. We discuss five hypotheses in order to study the fertility behavior of international or internal migrants. They refer to timing effects, the socio-demographic characteristics of migrants, as well as their living circumstances and cultural factors.

The underlying assumption of the *disruption hypothesis* is that a move in itself, as well as the time preceding and following the move, is stressful for a person; therefore, fertility is expected to be low shortly after the move.

By contrast, the *hypothesis of interrelation of events* regards the migration as a situation in which several events take place in a brief time span, namely migration and union formation. Hence, fertility is expected to be high shortly after arrival.

While the hypotheses of disruption and interrelation of events focus on short-term impacts of migration, the *adaptation hypothesis* offers a medium-term perspective. Given that fertility patterns vary between the regions of origin and destination, a convergence may be achieved within some years of arrival.

The *socialization hypothesis* emphasizes the role of the migrants' early socialization, focusing on the values, norms, and behavior dominant during a person's childhood, and assumes their continuance throughout life. According to this hypothesis, immigrants may follow the fertility patterns as perceived in their country of origin, even if they differ from that of the new host society. Immigrants from different countries of origin that exhibit different fertility patterns may also show fertility differences in the same country of destination, and the second migrant generation may exhibit fertility behavior that more closely resembles that of the receiving society.

Finally, the *selection hypothesis* predicts similar fertility patterns between immigrants and their counterparts in the host society because migrants are assumed to

share the fertility intentions of the persons at destination. Therefore, immigrants may have fertility intentions that resemble those of the receiving country, rather than those dominant in their country of origin. This selection can result from observed characteristics or from unobserved factors.

For the second immigrant generation, this study also draws upon the theoretical framework on fertility behavior of minority groups. The composition of the sub-groups, the economic situation, the experience of discrimination and uncertainty, and the maintenance of distinct fertility norms are discussed as having an influence on fertility.

Our study tests these hypotheses in the West German context on women who come from five countries that have provided West Germany with labor migrants since the 1950s ('guest workers'). The second chapter also presents information on the family-formation contexts of the five countries of origin considered here; these are Turkey, the former Yugoslavian states, Greece, Italy, and Spain. Among the selected countries, Turkey has experienced the most substantial changes in the past four decades. Although the birth rates fell in these countries of origin, childlessness still remains an exception in each of them. Moreover, marriage and childbearing are strongly connected in these countries of origin.

Since socio-demographic characteristics of the women and their partners play an important role in fertility behavior, the second chapter also gives an overview of the structure of the 'guest-worker' population of Turkish, former Yugoslavian, Greek, Italian, and Spanish backgrounds living in West Germany. The social and occupational structure of the immigrant population is characterized by social and economic disadvantages stemming from the former 'guest-worker' milieu. These disadvantages were passed on to the next generation in the form of lower social starting position. Accordingly, educational attainment among the immigrant generations is on average lower than among West Germans, and the occupational position of immigrants is worse. Moreover, this part of the study outlines the family-formation context of immigrants in Germany. In union formation, 'guest workers' and their descendants show a preference for a partner of their own national group, their share of married persons is higher than the respective share among the West Germans, and marriage takes place earlier in life.

In the previous decades, parallel to the drop in fertility in the countries of origin, the fertility rates of immigrants to West Germany declined, either to convergence levels or to rates slightly above those of Germans. The second chapter of the thesis assesses research on the fertility of ‘guest workers’ in Germany that has been carried out to date. Previous studies have only sporadically tested the introduced hypotheses, and their main focus has been on first-generation immigrants. So far, evidence has been found mainly for fertility adaptation and the impact of socialization on fertility. Moreover, compositional differences, largely with regard to educational attainment, have been shown to be of importance in explaining fertility differentials between ‘guest workers’ and German women.

The second chapter concludes with the derivation of the working hypotheses that guide our analyses in the next chapter.

Chapter 3 contains the empirical analyses; it begins with information on data, methods, and covariates used. We employ data of the German Socio-Economic Panel Study (waves 1984–2002) on immigrant women and West Germans, born 1946 to 1983. Then we apply a hazard-regression analysis to the transitions to first, second, and third births of women of the first and second immigrant generations and West Germans. The parity-specific view takes into account the length of the immigrants’ stay in West Germany and allows for exploration of the dynamic nature of the family-formation process. The study also examines individual behavior in the context of ‘linked lives’ by including marriage duration and the partner’s characteristics in the analyses.

The results are discussed in the context of our working hypotheses in Chapter 4.

Disruption: None of the analyses of a first, second, and third child finds any evidence for a disruptive effect of migration. First-generation immigrants have higher transition rates to all three births than West Germans and the second generation. Second-generation migrants have either slightly elevated or similar transition rates compared to West Germans, which contradicts the disruption assumption due to a minority-group experience.

Interrelation of events: The hypothesis of the interrelation of events is supported: first-generation immigrants who move to West Germany without a child experience the migration, the first marriage, and the first conception within a short time span. First-

birth rates are high during the first two years after arrival. The analyses of the subsequent births show that first-generation immigrants who moved with one or two children also exhibit higher birth risks than women who migrated without a child.

Adaptation: Our study provides evidence supporting the assumption of adaptive behavior of first-generation immigrants. Women who were childless upon arrival show declining birth risks with increasing length of stay in Germany, and the risks of having a subsequent birth are lower than those of first-generation immigrants who arrive with one or two children.

Selection and characteristics: The first-child analysis clearly demonstrates that first-generation immigrants are a selected group; childless women from ‘guest-worker’ countries experience the move and the first marriage within a short time span. Therefore, it can be concluded that marriage migrants also intend to have a first child soon after the conjugal household is formed. First-child risks are increased in the first two years after arrival and they decrease considerably when controlling for marriage duration, but remain elevated. In addition, the analyses prove the assumption of compositional differences between the immigrant groups and Germans to be true. Fertility differentials are diminished or become non-existent when we control for socio-demographic factors of the women. This applies to both first- and second-generation immigrants.

Socialization: After controlling for compositional differences, we find evidence for the impact of early socialization. On the one hand, birth risks of each parity are much more similar between second-generation immigrants and West German women than they are between the second and the first generations. On the other hand, fertility differences occur by country background, i.e., first-generation immigrants from Turkey have higher transition rates to a second and third child than women from Southern and Southeastern European countries, which is also true for the third child for the second generation of Turkish descent.

Our study gives more detailed insights into the impact of migration on fertility behavior of international migrants and their descendants than has been previously available. This opens new research avenues in family demography, such as a deeper analysis of the fertility differences between first- and second generation immigrants. The thesis concludes with a reflection on the work presented and perspectives for further research.

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7 Appendix

7.1 First-birth analysis — 7.2 Second-birth analysis — 7.3 Third-birth analysis

7.1 First-child analysis

Figure 17: Transition to a first child — log baseline intensity

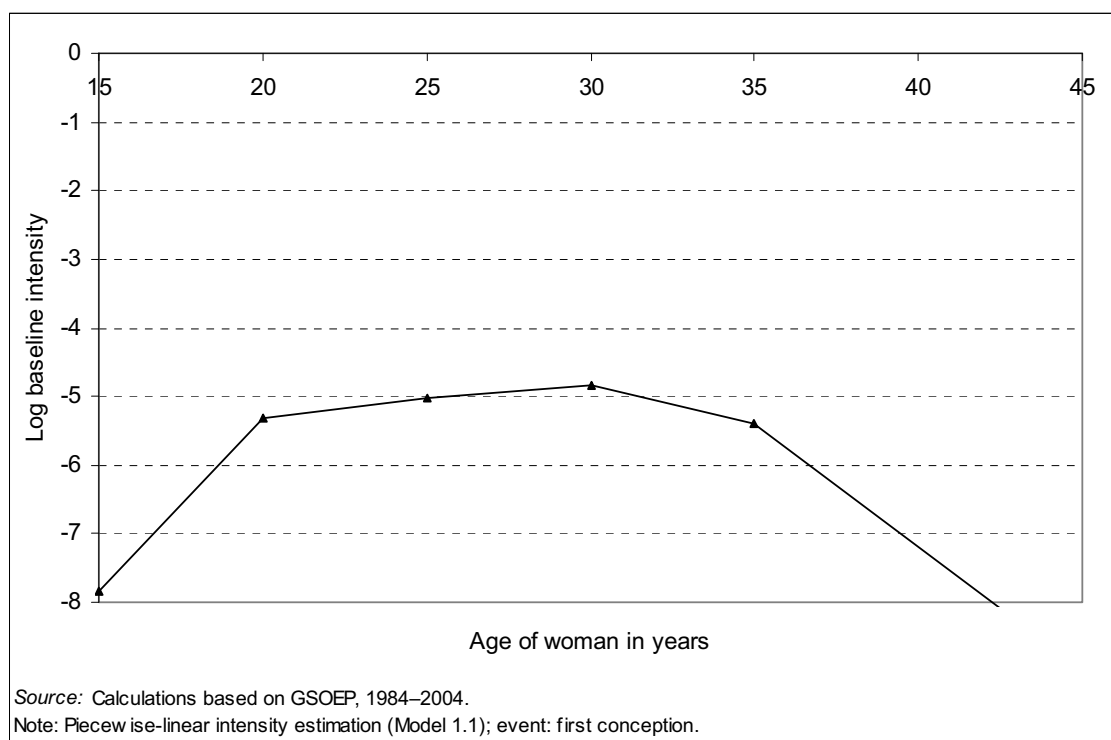


Table 37: Relative frequencies by immigrant generation and birth cohort

	1946–59	1960–69	1970–79	1980+
First generation	57.0	27.8	14.3	0.9
Second generation	8.6	43.2	40.0	8.2
West German	34.6	38.2	21.3	6.0
Total	32.9	37.9	23.4	5.8

Source: Calculations based on GSOEP, 1984–2002; event: first conception; $p < 0.001$.

Table 38: Relative frequencies by immigrant generation and school-leaving certificate

	None	First	Second	Other	In education	N.A.
First generation	24.2	55.9	18.1	0.0	0.4	1.4
Second generation	11.8	69.3	15.4	0.5	1.7	1.4
West German	2.7	69.8	25.0	0.5	1.1	0.8
Total	6.4	68.3	22.8	0.5	1.1	1.0

Source: Calculations based on GSOEP, 1984–2002; event: first conception; $p < 0.001$.

Table 39: First immigrant generation: Relative frequencies by birth cohort and school-leaving certificate

Birth cohort	None	First	Second	Other	In education	N.A.
1946–59	30.2	56.6	12.9	0.0	0.0	0.3
1960–69	19.4	56.8	21.9	0.0	0.0	1.9
1970–79	11.3	50.0	31.3	0.0	2.5	5.0
1980+	0.0	80.0	20.0	0.0	0.0	0.0
Total	24.2	55.9	18.1	0.0	0.4	1.4

Source: Calculations based on GSOEP, 1984–2002; event: first conception; $p < 0.001$.

Table 40: Second immigrant generation: Relative frequencies by birth cohort and school-leaving certificate

Birth cohort	None	First	Second	Other	In education	N.A.
1946–59	18.6	74.3	5.7	0.0	0.0	1.4
1960–69	12.5	71.8	13.1	0.0	0.3	2.3
1970–79	12.0	65.5	19.4	1.2	1.2	0.6
1980+	0.0	68.7	17.9	0.0	13.4	0.0
Total	11.8	69.3	15.4	0.5	1.7	1.4

Source: Calculations based on GSOEP, 1984–2002; event: first conception; $p < 0.001$.

Table 41: West Germans: Relative frequencies by birth cohort and school-leaving certificate

Birth cohort	None	First	Second	Other	In education	N.A.
1946–59	1.0	79.9	18.3	0.4	0.2	0.3
1960–69	3.5	68.2	26.2	0.6	0.0	1.5
1970–79	4.5	61.4	32.2	0.5	0.8	0.6
1980+	31.0	51.7	0.9	0.9	15.1	0.4
Total	2.7	69.8	25.0	0.5	1.1	0.8

Source: Calculations based on GSOEP, 1984–2002; event: first conception; $p < 0.001$.

Table 42: Married women: Relative frequencies by immigrant generation and spouse's school leaving certificate

	None	First	Second	Other	N.A.
First generation	16.1	57.6	16.3	0.0	10.1
Second generation	7.0	55.0	17.8	0.3	20.0
West German	0.7	53.7	23.2	0.3	22.2
Total	3.8	54.4	21.5	0.2	20.0

Source: Calculations based on GSOEP, 1984–2002; event: first conception; $p < 0.001$.

Table 43: Relative frequencies by immigrant generation and type of place where woman lived at age 15

	Large city	Medium city	Small town	Rural area	N.A.
First generation	17.6	12.2	21.2	27.1	22.0
Second generation	15.5	12.4	18.3	12.2	41.6
West German	18.7	14.8	18.7	30.1	17.7
Total	18.1	14.2	18.9	27.0	21.9

Source: Calculations based on GSOEP, 1984–2002; event: first conception; $p < 0.001$.

Table 44: Relative frequencies by immigrant generation and religious affiliation

	Catholic	Protestant	Other Christian	Other	None	N.A.
First generation	19.4	0.5	12.0	27.6	3.9	36.6
Second generation	22.6	0.9	12.8	26.8	2.8	34.1
West German	31.6	32.1	1.3	0.3	7.8	26.9
Total	29.0	23.9	4.2	7.3	6.6	29.1

Source: Calculations based on GSOEP, 1984–2002; event: first conception; $p < 0.001$.

Note: For the analysis, religion was constructed as time-varying covariate; the frequencies here relate to the first affiliation available.

Table 45: Relative frequencies by country of origin and religious affiliation

	Catholic	Protestant	Other Christian	Other	None	N.A.
Turkey	0.2	0.2	0.7	59.8	3.1	36.1
Yugoslavia	33.0	1.2	20.2	9.3	7.4	29.1
Greece	1.7	0.0	60.8	1.1	1.7	34.7
Italy	58.1	2.0	3.3	1.2	1.2	34.2
Spain	51.3	0.9	0.0	0.0	1.7	46.2
West Germany	31.6	32.1	1.3	0.3	7.8	26.9
Total	29.0	23.9	4.2	7.3	6.6	29.1

Source: Calculations based on GSOEP, 1984–2002; event: first conception; $p < 0.001$.

Note: For the analysis, religion was constructed as time-varying covariate; the frequencies here relate to the first affiliation available.

Table 46: Relative frequencies by immigrant generation and importance of religion

	Important	Not important	N.A.
First generation	39.4	13.6	47.0
Second generation	36.9	18.1	45.0
West German	23.0	38.7	38.4
Total	26.9	32.8	40.3

Source: Calculations based on GSOEP, 1984–2002; event: first conception; $p < 0.001$.

Note: For the analysis, religiosity was constructed as time-varying covariate;
the frequencies here relate to first information available.

Table 47: Relative frequencies by country of origin and importance of religion

	Important	Not important	N.A.
Turkey	40.2	13.2	46.5
Yugoslavia	35.7	24.4	39.9
Greece	40.3	17.1	42.6
Italy	39.8	15.9	44.3
Spain	23.9	12.8	63.3
West Germany	23.0	38.7	38.4
Total	26.9	32.8	40.3

Source: Calculations based on GSOEP, 1984–2002; event: first conception; $p < 0.001$.

Note: For the analysis, religiosity was constructed as time-varying covariate;
the frequencies here relate to the first information available.

Table 48: Immigrant-specific factors influencing the transition to a first child — relative risks for categorical variables and slope estimates for continuous variables

Variable	Model 1.6C
West German	1
<i>Immigrant generation and country of origin</i>	
First generation, Turkey:	
<i>Time since arrival in years (slope)</i> ^a	
Intercept	0.309
0–1	0
1–2	-0.015
2–5	-0.007
5+	-0.007 **
First generation, SSEE ^b	1.08
Second generation, Turkey ^c	1.21 *
Second generation, SSEE ^b	0.82
<i>Spouse's origin</i> ^d	
Migrant from same country	1
Migrant from different country or German	1.13
N.A.	0.64 **
<i>Migration process</i> ^e	
Married, migrated together	1
Married, migration with separation	1.35
Unmarried at migration	1.00
No migration info on partner	2.16 **
Log-likelihood	-15,136.11

Source: GSOEP, 1984–2004; event: first conception.

Note: Significance: *'=10%; ***'=5%; ****'=1%; controlled for age, birth cohort, school education, employment status of the woman; school education, employment of spouse; marriage duration.

^a — Piecewise-linear spline for first-generation immigrants from Turkey relative to West Germans.

^b — SSEE (Southern and Southeastern Europe): Yugoslavia, Greece, Italy, Spain relative to Turkey.

^c — Turkish-descent women relative to West Germans.

^d — Conditional covariate for married immigrant women.

^e — Conditional covariate for first-generation immigrants.

Table 49: Further factors influencing the transition to a first child — relative risks for categorical variables and parameter estimates for continuous variables

Variable	M1.6C	M1.7	M1.8	M1.9	M1.10A	M1.10B
West German	1	1	1	1	1	1
<i>Immigrant generation and country of origin</i>						
First generation, Turkey:						
Time since arrival						
in years (slope) ^a						
Intercept	0.309	0.371 *	0.417 **	0.401 *	0.354	0.366
0–1	0	0	0	0	0	0
1–2	-0.015	-0.016	-0.015	-0.015	-0.016	-0.016
2–5	-0.007	-0.006	-0.006	-0.006	-0.006	-0.006
5+	-0.007 **	-0.005	-0.005	-0.005	-0.005	-0.005
First generation, SSEE ^b	1.08	0.90	0.90	0.90	0.90	0.90
Second generation, Turkey ^c	1.21 *	1.36 ***	1.36 ***	1.33 **	1.27 *	1.29 *
Second generation, SSEE ^b	0.82	0.82	0.83	0.84	0.85	0.85
<i>Place where woman lived at age 15</i>						
Rural area		1	1	1	1	1
Urban area		0.93 *	0.93	0.95	0.95	0.95
N.A.		0.45 ***	0.47 ***	0.49 ***	0.49 ***	0.49 ***
<i>Importance of religion^d</i>						
(Very) important			1			
Less or not important			1.01			
N.A.			0.76 ***			
<i>Religious affiliation^d</i>						
Catholic				1	1	1
Protestant				1.00	1.00	1.00
Greek or other Christian				0.97	0.96	0.97
Other religion				1.01	1.01	1.02
No affiliation				0.82 ***	0.82 **	0.82 **
N.A.				0.71 ***	0.72 ***	0.72 ***
<i>Mother's school education</i>						
School degree					1	
No school or no degree					1.09	
N.A.					0.96	
<i>Father's school education</i>						
School degree						1
No school or no degree						1.06
N.A.						0.95
Log-likelihood	-15,136.11	-15,073.61	-15,053.10	-15,051.89	-15,050.90	-15,051.14

Source: Calculations based on GSOEP, 1984–2004; event: first conception.

Note: Significance: **=10%; ***=5%; ****=1%; controlled for age, birth cohort, school education, employment status of the woman; origin, school education, employment of the spouse; marriage duration; migration process.

^a — Piecewise-linear spline for Turkish immigrants relative to West German women.

^b — SSEE (South and Southeastern Europe): Yugoslavia, Greece, Italy, Spain relative to Turkey.

^c — Turkish-descent women relative to West Germans.

^d — Time-varying covariate.

7.2 Second-child analysis

Figure 18: Transition to a second child — log baseline intensity

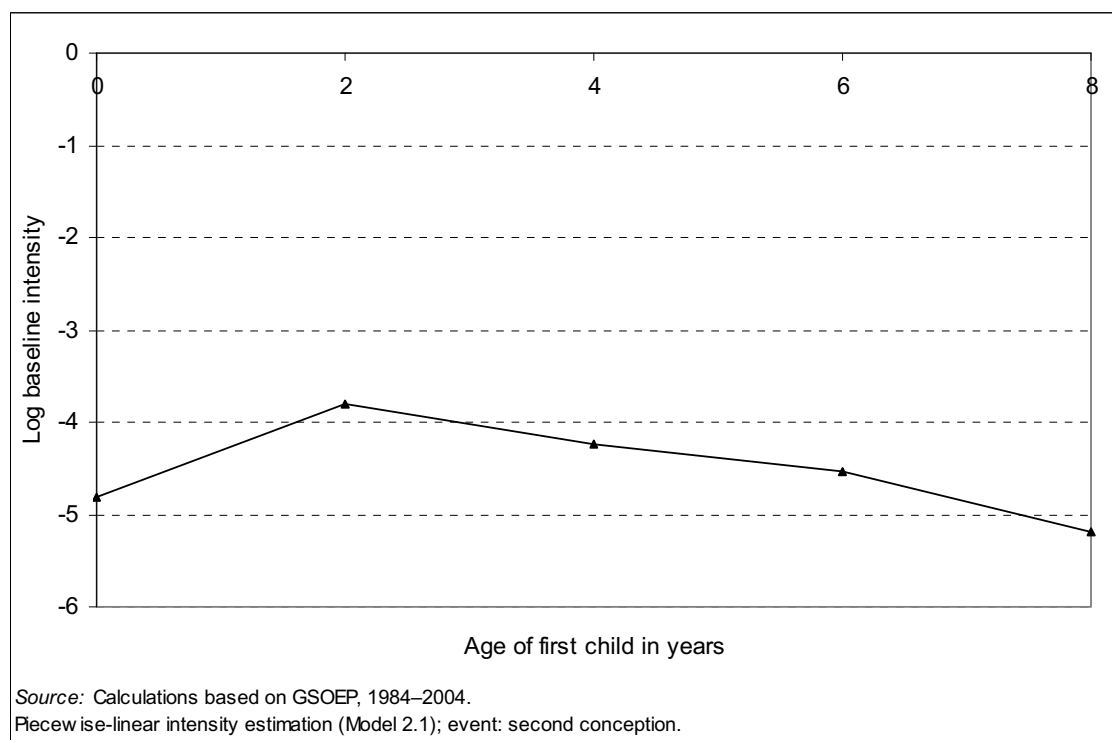


Table 50: Relative frequencies by immigrant generation and birth cohort

	1946–59	1960–69	1970–79	1980+
First generation	61.2	24.0	13.7	1.1
Second generation	16.0	53.7	28.6	1.7
West German	51.4	37.0	11.3	0.3
Total	49.1	36.5	13.7	0.6

Source: Calculations based on GSOEP, 1984–2002; event: second conception; $p < 0.001$.

Table 51: First immigrant generation: Relative frequencies by birth cohort

	1946–59	1960–69	1970–79	1980+
First birth in Germany	59.5	24.6	14.7	1.2
First birth abroad	76.6	19.2	4.3	0.0
Total	61.2	24.0	13.7	1.1

Source: Calculations based on GSOEP, 1984–2002; event: second conception; $p = 0.089$.

Table 52: Relative frequencies by immigrant generation and age at first birth

	<20	20–24	25–29	30–34	35+
First generation	22.9	55.5	17.2	3.7	0.7
Second generation	20.6	49.5	23.3	5.9	0.7
West German	11.6	36.4	35.7	13.6	2.8
Total	14.7	41.3	30.9	10.9	2.2

Source: Calculations based on GSOEP, 1984–2002; event: second conception; $p < 0.001$.

Table 53: Relative frequencies by country of origin and age at first birth

	<20	20–24	25–29	30–34	35+
Turkey	28.6	50.8	18.5	2.2	0.0
Yugoslavia	15.9	62.3	15.2	5.8	0.7
Greece	24.1	49.4	16.5	7.6	2.5
Italy	16.6	50.4	25.9	5.8	1.4
Spain	10.0	56.7	25.0	8.3	0.0
West Germany	11.6	36.4	35.7	13.6	2.8
Total	14.7	41.3	30.9	10.9	2.2

Source: Calculations based on GSOEP, 1984–2002; event: second conception; $p < 0.001$.

Table 54: Relative frequencies by immigrant generation and school-leaving certificate

	None	First	Second	Other	N.A.
First generation	27.5	56.6	13.0	0.0	2.9
Second generation	20.2	69.0	7.0	1.4	2.5
West German	1.0	80.9	16.8	0.6	0.7
Total	8.0	75.1	15.0	0.6	2.3

Source: Calculations based on GSOEP, 1984–2002; event: second conception; $p < 0.001$.

Table 55: First immigrant generation: Relative frequencies by school-leaving certificate

	None	First	Second	N.A.
First birth in Germany	27.5	56.0	13.5	2.9
First birth abroad	27.7	61.7	8.5	2.1
Total	27.5	56.6	13.0	2.9

Source: Calculations based on GSOEP, 1984–2002; event: second conception; $p = n.s.$

Table 56: Relative frequencies by immigrant generation and spouse's school-leaving certificate

	None	First	Second	Other	N.A.
First generation	15.2	60.8	16.3	0.0	7.7
Second generation	7.3	62.7	19.9	0.0	10.1
West German	0.7	56.4	22.7	0.2	20.1
Total	4.1	57.9	21.2	0.2	16.7

Source: Calculations based on GSOEP, 1984–2002; event: second conception; $p < 0.001$.

Table 57: First immigrant generation: Relative frequencies by spouse's school-leaving certificate at censoring

	None	First	Second	N.A.
First birth in Germany	15.48	60.93	15.97	7.62
First birth abroad	12.77	59.57	19.15	8.51
Total	16.3	60.79	15.2	7.71

Source: Calculations based on GSOEP, 1984–2002; event: second conception; $p = n.s.$

Table 58: Relative frequencies by immigrant generation and type of place where woman lived at age 15

	Large city	Medium city	Small town	Rural area	N.A.
First generation	21.2	13.7	27.8	34.1	3.3
Second generation	18.5	16.7	24.7	15.7	24.4
West German	19.7	15.4	20.4	37.4	7.0
Total	19.8	15.3	22.3	34.4	8.3

Source: Calculations based on GSOEP, 1984–2002; event: second conception; $p < 0.001$.

Table 59: Relative frequencies by immigrant generation and religious affiliation

	Catholic	Protestant	Other Christian	Other	None	N.A.
First generation	24.9	0.9	15.4	34.4	4.4	20.0
Second generation	28.6	0.7	13.6	38.3	2.8	16.0
West German	39.4	36.9	1.9	0.4	7.6	13.7
Total	35.6	26.3	5.7	10.9	6.5	15.1

Source: Calculations based on GSOEP, 1984–2002; event: second conception; $p < 0.001$.

Note: For the analysis, religion was constructed as time-varying covariate; the frequencies here relate to the first affiliation available after the first birth.

Table 60: Relative frequencies by country of origin and religious affiliation

	Catholic	Protestant	Other Christian	Other	None	N.A.
Turkey	0.3	0.3	1.2	75.1	4.3	18.8
Yugoslavia	39.1	1.5	26.1	13.0	7.3	13.0
Greece	3.8	0.0	78.5	1.3	0.0	16.5
Italy	69.1	1.4	5.0	1.4	2.9	20.1
Spain	68.3	1.7	0.0	1.7	0.0	28.3
West Germany	39.4	36.9	1.9	0.4	7.6	13.7
Total	35.6	26.3	5.7	10.9	6.5	15.1

Source: Calculations based on GSOEP, 1984–2002; event: second conception; $p < 0.001$.

Note: For the analysis, religion was constructed as time-varying covariate; the frequencies here relate to the first affiliation available after the first birth.

Table 61: Factors influencing the transition to a second child: Characteristics of immigration background — relative risks

Variable	Model 2.5C
West German	1
<i>Immigrant generation and country of origin</i>	
First generation with first birth abroad ^a	1.39 *
First generation with first birth in Germany, Turkey	0.99
First generation with first birth in Germany, SSEE ^b	0.97
Second generation, Turkey	1.01
Second generation, SSEE ^b	1.20
<i>Spouse's origin</i>	
Migrant from same country	1
Migrant from different country or German	0.71 *
N.A.	0.37 **
<i>Migration process</i> ^c	
Married, migrated together	1
Married, migration with separation	1.28
Unmarried at migration	1.16
No migration info on partner	2.66 *
Log-likelihood	-8803.89

Source: Calculations based on GSOEP, 1984–2004; event: second conception.

Note: Significance: **=10%; ***=5%; ****=1%; controlled for age of the first child, age at first birth, birth cohort, school education, employment status of the woman; school education, employment of the spouse.

^a — Turkey, Yugoslavia, Greece, Italy, Spain.

^b — SSEE (Southern and Southeastern Europe): Yugoslavia, Greece, Italy, Spain.

^c — Conditional covariate for first-generation immigrants.

**Table 62: Further factors influencing the transition to a second child:
Characteristics of immigration background and further covariates — relative risks**

Variable	M2.6A	M2.6B	M2.6C	M2.6D	M2.6E	M2.6
West German	1	1	1	1	1	1
<i>Immigrant generation and country of origin</i>						
First generation with first birth abroad ^a	1.40	1.35	1.36	1.43	1.46	1.35
First generation with first birth in Germany, Turkey	1.01	0.94	0.95	1.01	1.10	0.95
First generation with first birth in Germany, SSEE ^b	0.98	0.96	0.94	0.98	1.05	0.94
Second generation, Turkey	1.04	0.96	0.93	1.00	1.00	0.92
Second generation, SSEE ^b	1.23	1.19	1.11	1.17	1.06	1.16
<i>Place where woman lived at age 15</i>						
Rural area	1					1
Urban area	0.88	**				0.90 **
N.A.	0.92					0.94
<i>Religious affiliation ^c</i>						
Catholic		1				1
Protestant		0.98				0.99
Greek or other Christian		0.99				0.97
Other religion		1.07				1.06
No affiliation		0.73 ***				0.75 **
N.A.		0.83 **				0.85 *
<i>Mother's school education</i>						
School degree			1			1
No school or no degree			1.17			1.22
N.A.			0.82 **			0.80
<i>Father's school education</i>						
School degree				1		1
No school or no degree				1.04		0.88
N.A.				0.84 **		1.07
<i>Sex of first child</i>						
Boy					1	1
Girl					0.98	1.00
Log-likelihood	-8801.10	-8796.55	-8797.71	-8800.98	-8803.80	-8789.36

Source: Calculations based on GSOEP, 1984–2004; event: second conception.

Note: Significance: **=10%; ***=5%; ****=1%; controlled for age of the first child, age at first birth, birth cohort, school education, employment status of the woman; school education, employment, and origin of the spouse, and migration process.

^a — Turkey, Yugoslavia, Greece, Italy, Spain.

^b — SSEE (Southern and Southeastern Europe): Yugoslavia, Greece, Italy, Spain.

^c — Time-varying covariate.

7.3 Third-child analysis

Figure 19: Transition to a third child — log baseline intensity

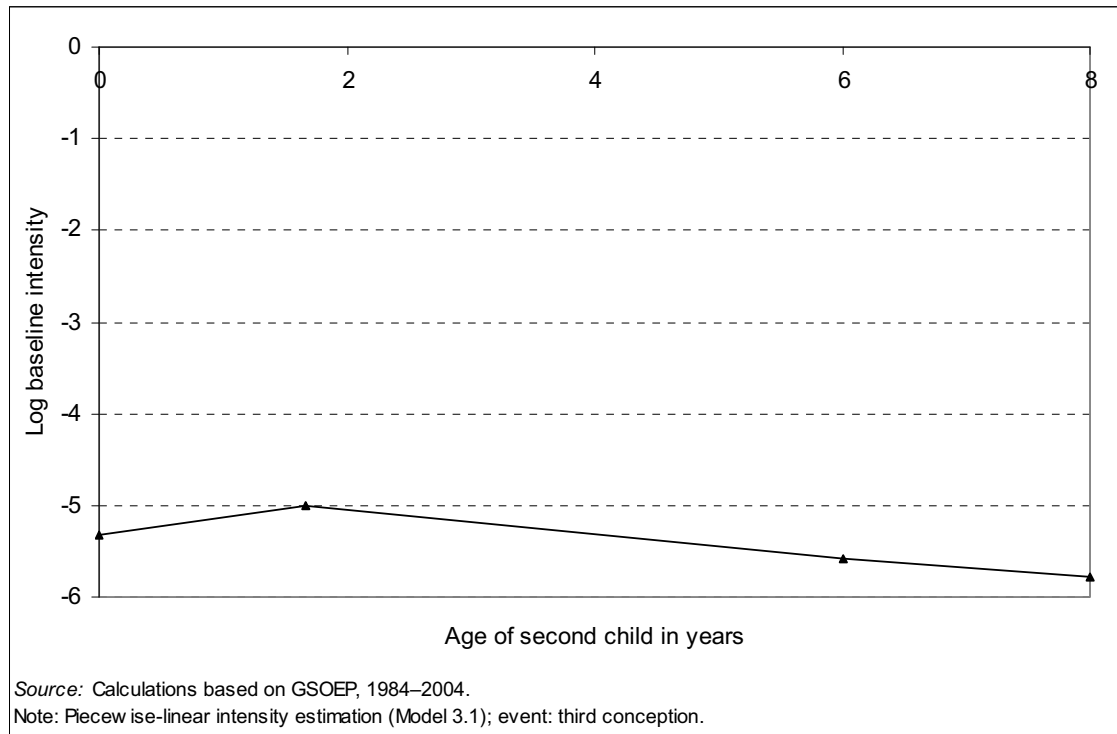


Table 63: Relative frequencies by immigrant generation and birth cohort

	1946–59	1960–69	1970–79	1980+
First generation	68.3	21.6	9.9	0.2
Second generation	20.4	56.4	23.3	0.0
West German	55.1	35.9	8.7	0.2
Total	54.8	34.5	10.5	0.2

Source: Calculations based on GSOEP, 1984–2004; event: third conception; $p < 0.001$.

Table 64: Relative frequencies by immigrant generation and age at second birth

	<20	20–24	25–29	30–34	35+
First generation	4.3	39.4	41.6	12.0	2.6
Second generation	4.7	39.5	40.1	14.5	1.2
West German	1.3	21.3	40.7	29.8	7.0
Total	2.4	27.6	40.8	23.8	5.3

Source: Calculations based on GSOEP, 1984–2004; event: third conception; $p < 0.001$.

Table 65: Relative frequencies by country of origin and age at second birth

	<20	20–24	25–29	30–34	35+
Turkey	6.4	43.2	38.4	11.2	0.8
Yugoslavia	1.6	40.7	48.0	8.1	1.6
Greece	5.0	48.3	31.7	10.0	5.0
Italy	4.6	28.2	46.4	17.3	3.6
Spain	0.0	31.1	37.8	26.7	4.4
West Germany	1.3	21.3	40.7	29.8	7.0
Total	2.3	27.6	40.8	23.8	5.3

Source: Calculations based on GSOEP, 1984–2004; event: third conception; $p < 0.001$.

Table 66: Relative frequencies by immigrant generation and school-leaving certificate

	None	First	Second	Other	N.A.
First generation	31.0	53.4	12.7	0.0	2.9
Second generation	20.9	69.8	4.7	2.3	2.3
West German	1.1	81.6	16.2	0.6	0.5
Total	10.5	73.4	14.2	0.6	1.3

Source: Calculations based on GSOEP, 1984–2004; event: third conception; $p < 0.001$.

Table 67: Relative frequencies by immigrant generation and spouse's school-leaving certificate

	None	First	Second	N.A.
First generation	15.9	61.3	15.1	7.7
Second generation	8.7	69.8	17.4	4.1
West German	0.6	59.1	23.8	16.7
Total	5.2	60.7	21.0	13.2

Source: Calculations based on GSOEP, 1984–2004; event: third conception; $p < 0.001$.

Table 68: Relative frequencies by immigrant generation and type of place where woman lived at age 15

	Large city	Medium city	Small town	Rural area	N.A.
First generation	19.2	13.9	27.2	37.5	2.2
Second generation	20.4	16.9	24.4	15.7	22.7
West German	18.9	14.8	20.4	40.2	5.6
Total	19.2	14.8	22.5	37.0	6.5

Source: Calculations based on GSOEP, 1984–2004; event: third conception; $p < 0.001$.

Table 69: Relative frequencies by immigrant generation and religious affiliation

	Catholic	Protestant	Other Christian	Other	None	N.A.
First generation	25.2	0.5	15.1	35.3	3.1	20.7
Second generation	30.8	0.6	12.2	40.7	4.1	11.6
West German	42.7	38.5	1.8	0.3	5.5	11.3
Total	37.2	25.3	6.2	13.0	4.7	13.6

Source: Calculations based on GSOEP, 1984–2004; event: third conception; $p < 0.001$.

Note: For the analysis, religion was constructed as time-varying covariate; the frequencies here relate to the first affiliation available in the time after the second birth.

Table 70: Relative frequencies by country of origin and religious affiliation

	Catholic	Protestant	Other Christian	Other	None	N.A.
Turkey	0.0	0.4	1.6	78.0	4.8	15.2
Yugoslavia	41.5	0.8	22.0	14.6	5.7	15.5
Greece	5.0	0.0	76.7	1.7	0.0	16.7
Italy	66.4	0.9	6.4	1.8	0.9	23.6
Spain	68.9	0.0	0.0	2.2	0.0	28.9
West Germany	42.7	38.5	1.8	0.3	5.5	11.3
Total	37.2	25.3	6.2	13.0	4.7	13.6

Source: Calculations based on GSOEP, 1984–2004; event: third conception; $p < 0.001$.

Note: For the analysis, religion was constructed as time-varying covariate; the frequencies here relate to the first affiliation available after the second birth.

Table 71: Factors influencing the transition to a third child: Characteristics of immigration background and further covariates — relative risks

Variable	M 3.7A	M 3.7B	M 3.7C	M 3.7D	M 3.7E	M 3.7
West German	1	1	1	1	1	1
<i>Immigrant generation and country of origin</i>						
First generation with second birth abroad ^a	1.13	1.11	1.08	1.03	1.16	1.12
First generation with second birth in Germany, Turkey	1.82 ***	1.70 ***	1.70 ***	1.63 ***	1.77 ***	1.74 ***
First generation with second birth in Germany, SSEE ^b	0.74 *	0.75 *	0.72 *	0.68 **	0.75 **	0.72 *
Second generation, Turkey	1.29	1.45	1.37	1.34	1.36	1.21
Second generation, SSEE ^b	0.80	0.85	0.82	0.78	0.88	0.81
<i>Place where woman lived at age 15</i>						
Rural area	1					1
Urban area	1.04					1.05
N.A.	1.88 **					1.87 **
<i>Religious affiliation ^c</i>						
Catholic		1				1
Protestant		1.01				1.01
Greek or other Christian		0.93				0.94
Other religion		1.04				1.04
No affiliation		0.87				0.85
N.A.		0.98				0.98
<i>Mother's school education</i>						
School degree			1			1
No school or no degree			1.05			0.88
N.A.			1.07			0.87
<i>Father's school education</i>						
School degree				1		1
No school or no degree				1.18		1.30
N.A.				1.13		1.23
<i>Sex of first and second child</i>						
Boy + girl					1	1
2 boys					1.33 ***	1.32 ***
2 girls					1.29 **	1.29 **
Log-likelihood	-4109.51	-4112.72	-4113.11	-4112.21	-4106.70	-4101.02

Source: Calculations based on GSOEP, 1984–2004; event: third conception.

Note: Significance: **=10%; ***=5%; ****=1%; controlled for age of the second child, age at second birth, birth cohort, school education of the woman; school education, country of origin of the spouse.

^a — Turkey, Yugoslavia, Greece, Italy, Spain.

^b — SSEE (Southern and Southeastern Europe): Yugoslavia, Greece, Italy, Spain.

^c — Time-varying covariate.

Eidesstattliche Erklärung

Ich erkläre hiermit, dass ich die vorliegende Arbeit ohne unzulässige Hilfe Dritter und ohne Benutzung anderer als der angegebenen Hilfsmittel angefertigt habe; die aus fremden Quellen oder indirekt übernommenen Gedanken sind als solche kenntlich gemacht.

Die Arbeit wurde bisher weder im Inland noch im Ausland in gleicher oder ähnlicher Form einer anderen Prüfungsbehörde vorgelegt und ist auch noch nicht veröffentlicht.

Nadja Miluski

Rostock, am 6. Juni 2008