Natives' and Immigrants' Gender Preferences for Children in Germany

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Abstract

Little research has been conducted yet investigating gender preferences among immigrant parents in Western host countries. We add further empirical evidence to this sparse literature by analyzing pooled micro-census data for the years 2005–2013 from Germany. Next to updating earlier findings on the native population, we assess parental gender preferences in two large and culturally distinct groups of immigrants in Germany, namely those with Turkish and Polish origins. Our analysis indicates both daughter and son preferences in contemporary Germany and supports the notion of potentially changing gender preferences within ethnic groups over time as well as continuous differences between ethnic groups of natives and immigrants in Western societies. Whereas the observed differences between natives and immigrants suggest incomplete cultural assimilation with regard to gender- and family-related attitudes and values, they barely contribute to explaining differential fertility behaviors, as effects sizes tend to be fairly similar across groups.

Keywords Gender preferences · Sex selection · Migration · Germany

1 Background

It seems to be a universal phenomenon that parents exhibit preferences for a specific sex (or sex composition) of their offspring (see Hank 2007, for a review). Next to general preferences for a mixed-sex composition, numerous studies indicate that parents may also favor having sons over daughters (or vice versa; e.g., Brockmann 2001). Even though modernization and more equal opportunities for women and men have *not* led to parental gender indifference in Western societies

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(e.g., Andersson et al. 2006; Mills and Begall 2010; Tian and Morgan 2017), the strength of parents' gender preferences for children as well as their demographic consequences in terms of skewed sex ratios tends to be more pronounced in many non-Western—especially Asian—cultures (e.g., Das Gupta et al. 2003; den Boer and Hudson 2017).

Against the background of high immigration and ethnic change in low-fertility countries (e.g., Coleman 2006), surprisingly little research has been conducted yet investigating gender preferences among *immigrant* parents in Western host societies, though.¹ Important exceptions are Almond et al. (2013) for Canada as well as Lillehagen and Lyngstad (2018) for Norway. Both of these studies provide indication of cultural persistence in immigrants' preferences for children's sex (also see Andersson et al. 2007). Adding further empirical evidence to this sparse literature seems important for two reasons in particular: *First*, previous research suggested that the attempt to realize one's preference for a specific sex composition of children may translate into higher fertility (e.g., Hank 2007). Identifying possible differences in natives' and immigrants' gender preferences might therefore contribute to understanding better differential demographic behaviors in these groups (especially with regard to childbearing). *Second*, shared attitudes and values are important for the social integration of immigrants (e.g., Carol 2016). The extent to which we observe cultural persistence or adaption in immigrants' (and their descendants') gender preferences thus also informs the more general debate about immigrant integration.

Our analysis is based on pooled micro-census data for the years 2005–2013 from *Germany*, a country characterized by a high proportion of first- and second-generation immigrants, accounting for some 20% of the total population. Next to updating earlier findings on the native population based on much smaller samples (e.g., Brockmann 2001; Hank and Kohler 2003), the large number of observations in the micro-census allows us to assess parental gender preferences in two major and culturally distinct groups of immigrants in Germany, namely those with Turkish and Polish origins.

2 The German Context

2.1 Previous Research on Parental Gender Preferences in Germany

Studies conducted in the early 2000s presented somewhat ambiguous evidence regarding the existence as well as the direction of gender preferences for children in Germany. Analyzing the transition from the first to the second child with data from the German Socio-Economic Panel for women born between 1892 and 1978,

¹ A different but related strand of literature addresses the issue of *sex-selective abortions* among certain immigrant groups. In an influential study, Dubuc and Coleman (2007) analyzed the sex ratios of births to India-born mothers in England and Wales, suggesting that sex-selective abortions may have taken place in Britain. Similar findings have been reported for North America (e.g., Almond et al. 2013; Almond and Sun 2017; Puri et al. 2011) and Southern Europe (Ambrosetti et al. 2015; Gavalas et al. 2015; González 2014), for example.

Brockmann (2001) found that West Germans never developed a clear gender preference, whereas women born in East Germany exhibited a significant daughter preference. Findings by Hank and Kohler (2000) based on the 1992 Family and Fertility Survey, on the other hand, suggest not only an Eastern German daughter preference, but also a son preference in the Western part of the country. If, however, the progression from parity two to parity three is considered, the authors did not find statistically significant evidence for any gender preference at all in Western Germany, but indication of a preference for a mixed-sex composition in the East.

In a follow-up study based on the German General Social Survey conducted in 2000, Hank and Kohler (2003) found that childless women tended to state stronger gender preferences (particularly in favor of girls) than their male counterparts and that the sex of the first child was the most influential predictor of parents' preferences for the sex distribution of prospective offspring. Regarding the ultimate sex distribution of their children, parents stated a clear preference for having at least one child of each sex. When turning to the behavioral relevance of gender preferences, Hank and Kohler (2003) showed that parents whose firstborn was a son were significantly less likely to have (or intend to have) a second child than those who had a daughter first. There was no such manifest gender preference when the progression from the second to the third child was considered. Both results corroborate previous findings for West Germany reported in Hank and Kohler (2000).

With regard to implications of the observed preferences for the natural sex ratio, it is important to keep in mind that the majority of the German population tends to be fairly indifferent toward the sex of their offspring (see Dahl et al. 2003). Thus, even under conditions of an improved availability and efficiency of preconception sex selection techniques, the aggregate effect of parental gender preferences on reproductive behavior would be small.

2.2 Immigration to Germany and Migrants' Fertility Behavior

After World War II, foreign-born immigrants to Germany arrived in several waves (e.g., Bade and Oltmer 2007; Münz and Ulrich 1998). The largest wave of immigration occurred between 1955 and 1973, when the West German government invited so-called guest workers to satisfy the booming economy's demand for labor. The majority of these roughly 14 million immigrants came from Italy, Spain, Greece, Portugal, Yugoslavia and Turkey. Labor migrants were also known in East Germany, initially from Eastern European countries only, but later on from Cuba, Mozambique and Vietnam as well. In both East Germany and West Germany, these immigrants were meant to stay only temporarily, but about 3 million—and their families—stayed permanently. Today, Turkish migrants and their descendants form the largest immigrant group, constituting nearly 4% of the total population in Germany.

Another wave of immigration occurred in the late 1980s and early 1990s. Next to almost 2 million refugees and asylum seekers (many of them from ex-Yugoslavia and with a temporary residence permit only), immigrants entering Germany in this

Fig. 1 Ten most common countries of origin of the 8.7 million foreigners living in Germany in 2016. *Source:* Federal Institute for Population Research (2018)

period primarily consisted of 2–3 million ethnic Germans (*Spätaussiedler*)² from Poland, Romania and the former Soviet Union. Following the enlargement of the European Union in the early 2000s, an increasing number of immigrants to Germany stems from Central and Eastern European countries (especially Poland, Romania and Bulgaria). Finally, in 2015, about 1.1 million refugees—particularly from Syria—sought asylum in Germany, constituting the most recent wave of immigration (see Juran and Broer 2017). See Fig. 1 for an overview of the foreign population in Germany by country of origin.

Research investigating immigrants' fertility behavior in Germany suggests that transition rates to first- and higher-order births of first-generation labor migrants ('guest workers') were higher than those of natives (largely due to compositional differences), whereas the childbearing patterns of migrants' descendants became more similar to those of the non-migrant German population (e.g., Milewski 2007, 2010; also see Kulu et al. 2017). Comparing major migrant groups, Polish women exhibit the lowest and Turkish ones the highest fertility (Schmid and Kohls 2009). The Turkish case is particularly well investigated: Next to elevated first birth probabilities among female migrants in the years immediately following migration (Wolf 2016), there is also evidence of higher first and second birth risks among '1.5 generation' immigrants (that is, those born in Turkey but raised in Germany); see Krapf and Wolf (2015). Highly educated second-generation Turkish migrants, however,

² In the eighteenth century, a large number of Germans migrated to Eastern Europe. 'Ethnic Germans' are individuals of German descent who lived in formerly socialist countries of Eastern Europe. According to the German concept of nationhood, which is based on the *ius sanguinis* ('right of blood'), and the German expellee legislation (*Bundesvertriebenengesetz*), these individuals can immediately claim German citizenship, if they decide to resettle in Germany (cf. Kreyenfeld and Konietzka 2002: Sect. 2).

largely adopted their fertility behavior to non-migrant Germans (also see Naderi 2015).

No study has yet compared immigrants' gender preferences for children—and their possible effect on fertility—to those of the non-migrant population in Germany. However, at least for the two major immigrant groups considered in our study—Turks and Poles—there is research on the native population in the country of origin: On the one hand, recent findings from *Turkey* (Altindag 2016) suggest that couples exhibit a preference for sons, which is reflected in son-biased differential stopping behavior but not in sex-selective abortion or a sex ratio imbalance in the population. Evidence from *Poland*, on the other hand, does not indicate any clear pattern of parental gender preferences (e.g., Hank and Kohler 2000; Karbownik and Myck 2011). Assuming cultural persistence in immigrants' preferences for children's sex (e.g., Almond et al. 2013; Lillehagen and Lyngstad 2018), *we therefore expect to find continued differences between the non-migrant population and Turkish as well as Polish migrants in Germany* (especially if first-generation immigrants are considered). Demographically, such variation in preferences might rather be reflected in differential stopping behaviors, where parity progression is contingent on the sex composition of previous children, than in skewed sex ratios (e.g., Altindag 2016).

3 Data and Method

Our empirical analysis is based on the pooled scientific use files of the German micro-census for the years 2005–2013. The full micro-census covers 1% of all private households in Germany, and participation in the survey is obligatory. Whereas the scientific use files contain only 70% of the original sample, they still provide a sufficiently large number of observations to differentiate between various larger groups of immigrants, for which detailed information is available since 2005 (e.g., country of origin or time since migration to Germany).

Even though individuals may be observed for up to 4 years, the micro-census does not allow longitudinal analyses and barely provides retrospective information. Fertility histories, for example, have never been surveyed. Krapf and Kreyenfeld (2015), however, showed that the Own-Children Method, which exploits micro-census information on the number and ages of co-residential children, provides reasonable fertility estimates for women of reproductive age, irrespective of migrant background (also see Bujard et al. 2015). This is important, because our assessment of natives' and immigrants' gender preferences for children is based on the assumption that parents are more likely to continue childbearing, if they have not yet achieved their desired sex (composition) of children. That is, differences in the probability to report having another (that is, second or third) child by sex composition of previous children should reflect differential parental gender preferences among natives and migrant groups (e.g., Andersson et al. 2007).

Our analytic sample consists of more than 300,000 women aged 16–45 who were identified as the household's reference person or his partner and who reported having at least one co-residential child. (Note that we excluded twins and triplets

from our analyses.) We distinguish the following groups, for which we run separate regressions:

- *German natives*, that is, individuals whose parents were born in Germany. We estimate models for all natives as well as for West and East Germans (identified as such by their place of residence at the time of the interview).
- *Turkish immigrants*, that is, individuals with at least one Turkish-born parent. We run regressions for first- and second-generation immigrants separately.
- *Polish immigrants*, that is, individuals with at least one Polish-born parent. Because sizeable immigration from Poland to Germany occurred only relatively recently (see above), the number of second-generation immigrants is too small to allow analyzing them separately. We therefore estimate models for first-generation Polish immigrants only as well as for ethnic Germans born in Poland.

For each of these groups, we estimate probit regression with robust standard errors and list-wise deletion for two binary *dependent* variables indicating whether a mother has ‘more than one’ or ‘more than two’ children (vs. ‘only one’ or ‘only two’ children), respectively (see Hank and Kohler 2003). Average marginal effects can be interpreted as a change in percentage points when the independent variable increases by one unit.

Our main *explanatory* variable of interest is previous children’s sex (composition), which we capture by the following binary indicators: In models for mothers of at least one child, we employ a variable that equals 1, if the firstborn child was a ‘boy,’ 0 otherwise. In models for mothers of at least two children, we distinguish a ‘mixed-sex composition’ of the two firstborn children (reference category) from having ‘two girls’ and ‘two boys’ as firstborns. Moreover, we *control* for the mother’s age and her highest educational degree, assessed by the CASMIN scale ranging from 0 (‘inadequately completed general education’) through 8 (‘higher tertiary education’) as well as for the year in which the micro-census was conducted. For first-generation immigrants, including ethnic Germans, we also account for time since immigration to Germany (in years). See Table 1 for descriptive sample statistics.

4 Results

The results of our multivariate analysis are displayed in Table 2. To begin with, the findings for *German* natives are consistent with research by Andersson et al. (2006) for the Nordic countries, suggesting that parental gender preferences may change over time: In the new millennium, both East and West German mothers seem to exhibit some preference for having a daughter (indicated by a higher probability to have further children, if the firstborn child was a boy). For natives in West Germany, the coefficient for having a third child after two boys is significantly higher than the coefficient for having a third child after two girls. Whereas this was already reported by Hank and Kohler (2000) as well as Brockmann (2001) for East German women, Hank and Kohler (2003) still reported a mild preference for sons in West German women. Moreover, German mothers today exhibit the well-known preference for a

Table 1 Descriptive sample statistics (percentages; means and standard deviations)

	German natives		Turkish immigrants		Polish immigrants		Ethnic Germans
	All	West	East	First generation	Second generation	First generation	
(a) Mothers with ≥ 1 children							
% Mothers w/≥ 1 child	54%	58%	44%	80%	60%	50%	53%
Firstborn child is a boy	52%	52%	53%	53%	51%	51%	51%
Age	37.4 (5.9)	37.7 (5.8)	36.5 (6.2)	36.2 (5.9)	32.1 (4.9)	35.6 (5.8)	37.2 (5.8)
Education (CASMIN)	4.2 (2.0)	4.1 (2.1)	4.5 (1.6)	1.5 (1.8)	2.6 (1.9)	4.1 (2.3)	3.9 (2.0)
Years since immigration	–	–	–	20.0 (9.7)	–	12.9 (7.6)	20.8 (7.0)
N	275,643	211,570	64,073	14,643	4098	5041	2318
(b) Mothers with ≥ 2 children							
% Mothers with > 2 children	22%	23%	18%	46%	28%	20%	18%
Firstborn children are both girls	23%	24%	22%	24%	25%	24%	21%
Firstborn children are both boys	27%	27%	28%	27%	24%	27%	26%
Age	38.4 (5.0)	38.6 (4.9)	37.3 (5.3)	36.8 (5.3)	33.5 (4.4)	36.4 (5.2)	38.1 (5.1)
Education (CASMIN)	4.2 (2.0)	4.1 (2.1)	4.5 (1.7)	1.3 (1.6)	2.4 (1.8)	3.8 (2.3)	3.7 (2.0)
Years since immigration	–	–	–	20.6 (9.1)	–	13.5 (7.2)	21.0 (7.0)
N	147,326	119,759	27,567	11,530	2449	2482	1202

Own calculations based on micro-census scientific use files 2005–2013

Table 2 Results (average marginal effects) of separate probit models with robust standard errors for native/immigrant mothers of at least one child/two children reporting to have a second/third child (dependent variables)

	German natives			Turkish immigrants		Polish immigrants	
	All	West	East	First generation	Second generation	First generation	Ethnic Germans
(a) Mothers with ≥ 1 children							
Firstborn child is a boy ^a	0.010*** (0.002)	0.010*** (0.002)	0.011** (0.004)	-0.011 (0.006)	-0.026 (0.014)	0.021 (0.014)	0.015 (0.020)
<i>N</i>	275,643	211,570	64,073	14,643	4098	5041	2318
(b) Mothers with ≥ 2 children							
Firstborn children are both girls ^b	0.019*** (0.003)	0.017*** (0.003)	0.027*** (0.006)	0.159*** (0.011)	0.157*** (0.022)	0.042* (0.020)	0.022 (0.028)
Firstborn children are both boys ^b	0.029*** (0.003)	0.028*** (0.003)	0.032*** (0.005)	0.020 (0.011)	0.044* (0.021)	0.040* (0.019)	0.061* (0.028)
<i>N</i>	147,326	119,759	27,567	11,530	2449	2482	1202

Own calculations are based on micro-census scientific use files 2005–2013. Significance * $p < 0.05$, ** $p < 0.01$; *** $p < 0.001$

Mothers' age and education as well as year of micro-census are controlled. Models for first-generation immigrants and ethnic Germans also account for time since immigration to Germany

^aReference category: firstborn child is a girl

^bReference category: mixed-sex composition of firstborn children

mixed-gender composition (if they have two or more children), which was also previously observed among East Germans, but not in West Germans (see Hank and Kohler 2000, 2003).

Turning to the *immigrant* population, we observe a negative, albeit not statistically significant, correlation between having a firstborn son and *Turkish* mothers' progression to higher parities. There is clearer indication of a preference for boys, however, if higher-order births are considered. (For lower-order births, the coefficients were only marginally significant.) That is, first-generation Turkish immigrants are more likely to have another child, if the two firstborn children are girls, whereas this is not the case, if they are boys (which is consistent with recent evidence from Turkey; see Altindag 2016). Looking at the level of significance, this son preference is less pronounced in the second generation, where we also detect some preference for a mixed-gender composition of children. The propensity to have another child is, however, substantially larger among mothers having two girls compared to those having two sons (0.157 vs. 0.044). These coefficients are significantly different from each other. Thus, in line with research showing that a sizeable proportion of second-generation Turkish immigrants in Germany exhibits at least as traditional gender- and family-related attitudes and values as their parents (e.g., Carol 2016; Carol and Milewski 2018), we observe a high degree of cultural persistence in a group that shares the same institutional and educational background as German natives.

In the second group of immigrants considered in our analysis, with *Polish* origins, the correlation of the firstborn child's sex with mothers' progression to higher parties does not meet conventional levels of statistical significance, which would be consistent with earlier studies for Poland suggesting parental gender indifference (Hank and Kohler 2000; Karbownik and Myck 2011). It should be noted, however, that the size of the positive coefficients of first-generation immigrants is twice as large as in our sample of German natives—and their lack of statistical significance might just result from the much smaller of the immigrant subsample. We might therefore—with all necessary caution—actually see some indication of an emerging girl preference among Polish-born immigrants. Such an assumption is supported by our observation that ethnic German mothers of two sons—unlike those having two daughters—tend to be more likely to have another child than those with a balanced gender composition of firstborn children. At the same time, first-generation Polish immigrant mothers of two or more children appear to have developed a 'new' preference for a mixed-gender composition, which was not reported in previous studies. Unfortunately, we cannot determine whether these findings indicate cultural assimilation to the German host society or rather reflect new social phenomena that might also be observed among natives who stayed in Poland.

5 Conclusions

Our analysis revealed both daughter and son preferences in contemporary Germany and supports the notion of potentially changing gender preferences *within* ethnic groups over time and continuous differences *between* ethnic groups of natives and immigrants in Western societies also reported elsewhere (e.g., Almond et al. 2013;

Andersson et al. 2007; Lillehagen and Lyngstad 2018). The contribution of these findings to the literature is threefold: *First*, both—continuity and change—are likely to reflect elements of societal gender systems affecting individuals' attitudes and behaviors (cf. Andersson et al. 2006). We therefore add to the recent discussion about the diffusion of gender egalitarian norms and the ongoing 'gender revolution' in shaping changing family behaviors (e.g., Goldscheider et al. 2015). However, *second*, the observed differences between natives' and immigrants' gender preferences for children barely contribute to explaining differential fertility behaviors (in terms of overall probabilities to progress to higher parities), as effect sizes tend to be fairly similar across groups. The only exception here is the large effect of having two girls on both first- and second-generation Turkish immigrant mothers to have another child. The proportion of mothers actually having more than two children differs widely between the first (46%) and second generations (28%; vs. 22% in Germans), though. *Third*, and finally, our results indicate incomplete cultural assimilation of the immigrant population—even in the second generation—with regard to gender- and family-related attitudes and values (also see Carol 2016; Carol and Milewski 2018). Further research on other countries with similar immigrant groups may find similar patterns.

An important question arising from the evidence presented here is whether there is any reason for serious *ethical concerns*. This seems particularly relevant against the background of medical advances facilitating parents' deliberate choice of their child's sex (see, for example, the report by The President's Council on Bioethics 2003). The claim that sex-selective abortion was taking place among certain immigrant groups in Britain (e.g., Dubuc and Coleman 2007), for example, led to an intense public debate about sex-selective abortion as a social problem related to the maintenance of customs and traditions from migrants' countries of origin and the necessity to legislate more restrictive abortion laws (Lee 2017). At about the same time, the Council of Europe passed a resolution calling its member states to 'introduce legislation with a view to prohibiting sex selection in the context of assisted reproduction technologies and legal abortion' (Council of Europe 2011: 8.7).

Such a legislation exists in Germany since February 1, 2010, as part of the gene diagnostics law, which regulates genetic examinations for medical reasons more generally. § 15 of the law states that parents must not be informed about the sex of the fetus before the end of gestational week 12, that is, the latest date until which an abortion is legally possible. A plausible substantive explanation for the lack of evidence suggesting sex-selective abortions among immigrants in Germany is its different ethnic compositions compared to, for example, Britain or North America. Due to immigration policies, language skills and colonial ties, the Anglo-Saxon countries have attracted more immigrants originating in Asian countries characterized by extraordinarily strong sex (that is, son) preference, whereas Germany has only a small fraction of these immigrants and hosts primarily Turkish minorities who initially came through guest worker programs. Together with Polish minorities, Turkish minorities are relatively religious (Diehl and Koenig 2013). Previous research has shown that individuals who are religious, simply have more children (Milewski 2011) despite gender preferences and are therefore less likely to constrain the sex of their children (Almond et al. 2013). Lastly, the finding is also in line with Pebley's

and Westoff's (1982) early argument that even if sex selection technologies were more readily available, their overall effect on women's reproductive behavior in low-fertility societies would be small (see also Dahl et al. 2003).

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

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