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Abstract

Previous research has found that ethnic educational inequalities arise even before children enroll in primary school. It has been shown that especially for migrants, early participation in education has a positive impact on later educational outcomes, with the acquisition of the host-country language being one of the main mechanisms driving this effect. With the influx of over one million refugees into Germany in recent years, the integration of migrant children, especially refugee children, into the educational system is more salient in educational politics than ever. The first empirical findings on early and preschool education among refugees have shown that while a considerable share of refugee children attend a daycare center, they do so at lower rates than native and other migrant children. This paper aims to examine whether inequalities in the early education of refugee children can be explained by different socioeconomic and migration-related factors known to be associated with inequality in daycare attendance and to explore whether additional refugee-specific factors affect the likelihood of enrollment in preschool education. With data from the IAB-BAMF-SOEP Survey of Refugees in Germany and the study Refugees in the German Educational System (ReGES), we show that conventional explanatory variables do affect refugee children's attendance of daycare centers. In addition to children's age, the employment status of the mother, and the length of stay in Germany are particularly important. However, we see regional differences in participation in preschool education that cannot be explained by the municipal childcare supply.

Keywords

Refugees; Early education; Preschool education; Daycare; Social inequality

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Der Einfluss sozioökonomischer, kultureller und struktureller Faktoren auf den Kindertagesstätten-besuch von geflüchteten Kindern

Zusammenfassung

Bisherige Studien haben gezeigt, dass ethnische Bildungsungleichheiten bereits vor der Einschulung entstehen. Es wurde gezeigt, dass insbesondere für Lernende mit Migrationshintergrund eine frühe Bildungsbeteiligung einen positiven Einfluss auf die späteren Bildungsergebnisse hat, wobei der Erwerb der Sprache des Aufnahmelandes einer der Hauptmechanismen für diesen Effekt ist. Mit der Zuwanderung von über einer Million Schutzsuchenden nach Deutschland in den letzten Jahren ist die Integration von Migrantenkindern, insbesondere von geflüchteten Kindern, in das Bildungssystem bildungspolitisch aktueller denn je. Erste empirische Befunde zur frühkindlichen und vorschulischen Bildung von Geflüchteten haben gezeigt, dass zwar ein erheblicher Anteil der geflüchteten Kinder eine Kindertagesstätte besucht, ihre Betreuungsquoten sind jedoch geringer als die von einheimischen und anderen Migrantenkindern. In diesem Beitrag soll untersucht werden, ob Ungleichheiten in der frühen Bildung von geflüchteten Kindern durch verschiedene sozioökonomische und migrationsspezifische Faktoren erklärt werden können, von denen aus der Literatur bekannt ist, dass sie mit Ungleichheiten im Kindertagesstättenbesuch einhergehen, und ob zusätzliche flüchtlingsspezifische Faktoren die Wahrscheinlichkeit den Besuch einer Kindertagesstätte beeinflussen. Mit Daten aus der IAB-BAMF-SOEP-Befragung von Geflüchteten in Deutschland und der Studie Refugees in the German Educational System (ReGES) zeigen wir, dass bekannte Determinanten den Kindertagesstättenbesuch von geflüchteten Kindern tatsächlich beeinflussen. Neben dem Alter der Kinder sind vor allem der Erwerbsstatus der Mutter und die Dauer des Aufenthalts in Deutschland von Bedeutung. Wir sehen jedoch regionale Unterschiede in der frühkindlichen Bildungsbeteiligung, die nicht durch das kommunale Kinderbetreuungsangebot erklärt werden können.

Schlagworte

Geflüchtete, frühe Bildung, vorschulische Bildung, Kindertagessstätte, soziale Ungleichheit

1. Introduction

Several studies have shown that children with a migrant background do worse in primary school than those who are native-born (see, e.g., Dollmann, 2010; Gresch, 2012). Previous research has found that ethnic educational inequalities exist even before children enroll in primary school (e.g., Relikowski et al., 2015). Addressing these inequalities calls for the provision of special pedagogical support for migrant

children, especially in learning the language of the host country, as early as possible (see, e.g., Becker & Biedinger, 2006). Children with a migrant background benefit from attending daycare centers, and language acquisition (especially if the language that they speak at home is different from that of the host country) can be facilitated by appropriate support (Becker, 2010, 2019; Lee, Han, Waldfogel, & Brooks-Gunn, 2018). Thus, the recommendation that children attend a daycare center as early as possible also applies to refugee children (see, e.g., von Maurice, Balaban, Will, & Roßbach, 2020).

For refugee children in Germany, attending a daycare center often means coming into contact with the German language as well as with the cultural norms and values of the host society for the first time (see, e.g., Gambaro, Liebau, Peter, & Weinhardt, 2017; von Maurice et al., 2020). First study results indicate that refugee children who attend daycare centers have higher German proficiency than those who do not (Schild, Welker, & Will, in preparation). Refugee children in daycare centers can experience security and belonging as well as a child-friendly environment (Baisch, Lüders, Meiner-Teubner, Riedel, & Scholz, 2017). Furthermore, children's attendance of a daycare center may have positive effects on their parents and families (see, e.g., Gambaro et al., 2017; von Maurice et al., 2020): In particular, the establishment of social contacts is linked to positive effects on parents' acquisition of cultural knowledge and language skills (for early evidence on this relationship, see Gambaro, Neidhöfer, & Spieß, 2019).

Considering the current refugee immigration context, in which more than 200,000 asylum applications for children under the age of 7 were made in 2015–2017 alone (Federal Office for Migration and Refugees (BAMF – Bundesamt für Migration und Flüchtlinge), 2016, 2017, 2018), the question of early integration of newly immigrated children into daycare centers is particularly relevant. On the other hand, there is an open theoretical discussion on whether refugee status should be regarded as a specific subcategory of immigrant status or as a separate dimension of inequality alongside, for example, gender, social class, and immigrant background (e.g., El-Mafaalani & Massumi, 2019). This discussion particularly relates to the fact that the contextual and individual conditions of refugees can sometimes differ drastically from those of other migrant groups.

However, until now, there have been only a few studies on refugees' educational situations, as refugee groups have not been studied thoroughly – mainly due to data limitations.

This paper aims to examine whether inequalities in the early education of refugee children can be explained by different known mechanisms of broader social and ethnic inequalities in participation in early and preschool education, and we explore whether additional refugee-specific variables (e.g., living in collective accommodation) further affect children's likelihood of attending daycare centers in particular.

We argue that known mechanisms of social and ethnic inequality in early childhood education affect refugees as well. We further argue that educational inequalities between refugee groups, i.e., from different countries of origin, and between

refugees and other migrant groups can be explained by additional migrant- and refugee-specific variables. To test our hypotheses, we use two unique data sets from Germany.

2. Participation of immigrants in daycare centers in Germany

Ethnic inequality in daycare usage behavior has been well established in previous literature (for an overview see Becker & Biedinger, 2016). The differences among three- to six-year-olds are not as pronounced as those among under-three-year-olds (see, e.g., Fuchs-Rechlin & Bergmann, 2014; Peter & Spieß, 2015). A comparison of the participation rates from 2009 and 2014 suggests that participation in early and preschool education is increasing overall, including among migrants, but the differences between children with and without a migrant background are still increasing slightly (see Aktionsrat Bildung, 2016, p. 124). According to recent register data, the daycare attendance rate of non-migrant children is increasing, while the corresponding rate of migrant children is stagnating or even decreasing: In 2018, 82 percent of children aged 3–6 with a migrant background were attending daycare centers, compared with 99 percent of children without a migration background. In the under-three age group, 20 percent of migrant children attended some form of childcare, compared to 41 percent of non-migrant children (Statistisches Bundesamt, 2019). However, migrants are not a homogeneous group. Peter and Spieß (2015) have shown that daycare rates vary among different migrant groups: For example, children of parents who both immigrated attend daycare centers relatively rarely.

First descriptive results on the participation of refugees in early and preschool education have shown that most 3-to-6-year-olds attend a daycare center, albeit at lower rates than native or other migrant children in this age group; for younger refugee children, the gap is even greater (Gambaro et al., 2017; Spieß, Westermaier, & Marcus, 2016). For children whose families came to Germany in the current refugee immigration wave, attendance of daycare centers is 80 percent among 3-to-6-year-olds and 15 percent among under-3-year-olds (Gambaro et al., 2017). Furthermore, there are significant regional differences (e.g., between eastern and western Germany) (ibid; Will, Balaban, Dröscher, Homuth, & Welker, 2018).

3. Theoretical explanations for daycare attendance

Sending a child to daycare can – as an educational decision – be understood as making an investment in the child's competence development by providing an appropriate learning environment (see, e.g., Becker & Biedinger, 2016). This decision can be modeled as an interest-maximizing cost-benefit calculation that depends on

individual motivations and resources within a given structure of opportunities and restrictions (Breen & Goldthorpe, 1997). Different arguments can be integrated into this general theoretical model (see, e.g., Burghardt & Kluczniok, 2016; Burghardt, 2017). Moreover, the model allows us to take into account various factors related to the social and ethnic origin as well as differences among various groups of refugees.

3.1 Structural-level characteristics

Childcare costs are usually comparatively low in Germany because of public funding of daycare on the one hand and cost waivers for low-income families on the other hand. Local supply of childcare is the actual challenge. Although all children older than 12 months are legally entitled to childcare, in most regions, demand for places in daycare centers cannot be satisfied. There are significant regional and local differences, with a better situation in high-income suburbs and cities (see Alt, Bergruber, & Pötter, 2016) as well as in eastern Germany due to its history of family politics (see, e.g., Hank, Tillmann, & Wanger 2001). Overall, there is a lower supply of childcare for children up to the age of three years (Bertelsmann Stiftung, 2019). Previous studies have already shown that individual daycare attendance is significantly related to daycare supply (Fuchs-Rechlin & Bergmann, 2014; Geier & Riedel, 2008).

A low childcare rate is associated with problems finding daycare for families with and without a migration background. While migrants tend to live in metropolitan areas in western Germany and in larger cities in general, refugees are distributed more evenly across Germany and are also housed in rural areas and eastern Germany due to regulations allocating the hosting of refugees across the country (see BAMF, 2018). Thus, controlling for the regional supply of daycare may explain the differences in daycare attendance between migrants and natives to a greater extent than the differences between refugees and natives.

Concerning legal access, the time at which refugee children become entitled to receive childcare is a point of controversy (see Baisch et al., 2017). In most federal states, entitlement is granted if the child has been assigned to be hosted by a municipality in the respective federal state (see Deutsches Institut für Menschenrechte, 2017). Thus, regardless of their legal residence status and their residence within collective or private accommodation, refugee children are entitled to receive childcare from the age of one if they are no longer in an initial reception facility.[1]

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1 However, it remains unclear whether children in so-called "AnkER-Zentren", which were established from 2018 in some federal states, are treated in practice like children in initial reception facilities. AnkER-Zentren are facilities in which asylum seekers initially are accommodated until their asylum application is decided and they are either assigned to be hosted in a certain municipality or obligated to return to their country of origin.

3.2 Mechanisms related to socioeconomic background

Parents of higher social classes tend to choose daycare centers more often than parents of lower social classes. More highly educated parents know more about the possibilities and positive effects of early preschool education than less educated parents (Becker & Lauterbach, 2007; Becker & Tremel, 2006). In addition, higher-earning parents can afford childcare more easily (Becker & Tremel, 2006). Although costs are lower in absolute terms for low-income families, families at risk of poverty who have daycare expenses still pay almost as much in relation to their income as other households (see Schmitz, Spieß, & Stahl, 2017). It is well established that mothers' employment status is central to explain daycare attendance. Also, more highly educated mothers demand more childcare because of their higher opportunity costs of staying at home (Becker & Tremel, 2006; Kreyenfeld & Krapf, 2010).

In previous studies, ethnic differences in daycare attendance have been largely explained by differences in socioeconomic background (for an overview, see Becker & Biedinger, 2016). Migrants use daycare centers less than the population overall largely because of their lower socioeconomic status and lower levels of education. For older migrant children, in particular, there is hardly any difference from the native population in terms of daycare attendance after socioeconomic background is controlled for, while significant differences remain in the group of children under the age of three (see, e.g., Fuchs-Rechlin & Bergmann, 2014; Kreyenfeld & Krapf, 2010).

We assume that these mechanisms should also affect refugee families; however, it is conceivable that the effects on refugees could initially be weaker for various reasons. For example, the desire to take up gainful employment should be more pronounced among educated refugee women than among less educated refugee women as well. However, due to a lack of German language skills and possible legal barriers to labor market entry (e.g., recognition of foreign qualifications, work permits, restricted choice of place of residence), it is mostly not possible for refugees to directly take up employment after entering the country.

3.3 Migrant-specific mechanisms

Knowledge, or a lack thereof, has been argued to explain ethnic differences in daycare attendance because immigrants may have less knowledge of the availability of early childcare offers due to foreign socialization (see, e.g., Stichs & Rotermund, 2017). Differences in knowledge may also relate to other aspects, such as knowledge of possible cost waivers or legal entitlement to the use of such waivers. Social contacts with natives might help immigrants acquire knowledge of the education system (ibid.) or directly support them in the process of registering their children in a daycare center (see Baisch et al., 2017).

Parents' low German language proficiency is another important driver of ethnicity-based differences. In particular, children of mothers with low language proficiency attend daycare centers significantly less (e.g., Becker & Tremel, 2006). Poor German proficiency not only can be seen as an indicator of little knowledge of the education system in the host country but also may lower the chances that mothers make use of their childcare entitlements.

These factors, which can also be described as a lack of host country-specific cultural capital, should be especially relevant for newly arrived immigrants. As all refugee families, which we consider in this article, are first-generation immigrants, the variables mentioned in the section above should apply in particular to this immigrant group as well.

Cultural differences may also explain different daycare attendance rates (see, e.g., Fuchs-Rechlin & Bergmann, 2014; Sachverständigenrat deutscher Stiftungen für Integration und Migration, 2013). In particular, due to a more traditional gender division of labor in migrant families, women are less likely to be employed and to need daycare. In addition, in some countries of origin, daycares are less common, and care outside the family might therefore be less accepted (see Die Beauftragte der Bundesregierung für Migration, Flüchtlinge und Integration, 2011; for data on participation in preschool education in Syria, see World Bank, 2015).

Presumably, cultural differences wane over the course of generations. However, for first-generation migrants and thus for the refugees who arrived in recent years, the cultural ideas of the society of origin should still be prominent.

Last, it cannot be completely ruled out that admission practices in individual daycare centers are related to the lower daycare attendance of migrant children (see, e.g., Alt et al., 2016).

3.4 Refugee-specific mechanisms[2]

In addition to all the previously discussed drivers, some factors could contribute to explaining daycare attendance rates among refugee children specifically.

First, refugee children who have had traumatic experiences might have developed posttraumatic stress disorder (PTSD). In these cases, parents might hesitate to use daycares. However, it has been argued that the experience of traumatic events can lead refugees to be more motivated to remain in the host country (see, e.g., Hunkler & Khourshed, 2020) and thus to make special efforts to integrate.

Second, as refugee migration is a forced and nonvoluntary act, refugees might have a higher return orientation than other immigrant groups. An intention to return to one's home country reduces the benefits of investing in host country-spe-

2   The factors described in this section are, strictly speaking, specific aspects of ethnic inequality. However, as the described mechanisms are – due to the general conditions of forced migration and the specific characteristics of this immigrant group – particularly applicable to refugees, we summarize them as refugee-specific factors.

cific capital, in particular, the German language. Refugees may therefore consider regular attendance of a daycare center less beneficial for their children.

The same reasoning could apply if refugees have not received a secure residence status and therefore perceive their stay in the host country to be temporary. From the official side, as mentioned in section 3.1, there are no daycare access barriers based on residence status or type of accommodation after refugee children have left the initial reception facility. However, it cannot be ruled out that actual daycare center enrollment practices may cause problems in the admission of newly arrived migrants and therefore also for our specific target group. For example, Baisch et al. (2017, p. 24) state that inflexible admission regulations (e.g., allowing admission only at certain times of the year or on a first-come-first-served basis) can present access barriers for immigrant families.

3.5 Summary of hypotheses

Table 1 summarizes our hypotheses and what contribution the individual factors should make in explaining group differences in daycare attendance between people with and without a migration background and refugees.

Table 1: Hypotheses on daycare center attendance and group differences

Hypotheses on basic variables	Effects on group differences
Structural variables:	
Hypothesis 1: Regional undersupply of daycare has a negative impact on daycare attendance.	Differences between natives and migrants, in particular, should decrease. Additionally, differences between natives and refugees should decrease, but to a smaller extent.
Socioeconomic variables:	
Hypothesis 2: Children from families with a more privileged socioeconomic background are more likely to attend daycare.	Differences between natives and migrants, in particular, should decrease. Additionally, differences between natives and refugees should decrease, but to a smaller extent.
Migrant-specific variables:	
Hypothesis 3: Social contact with natives is positively associated with daycare attendance.	Differences among different migrant groups (including different refugee groups) should decrease.
Hypothesis 4: German language proficiency is positively associated with daycare attendance.	Differences among different migrant groups (including different refugee groups) should decrease.
Hypothesis 5: Children from families with fewer host country-specific cultural resources are less likely to attend daycare.	Differences between migrants and refugees, in particular, should decrease.
Hypothesis 6: Children from families with more traditional gender attitudes are less likely to attend daycare.	Differences among different migrant groups (including different refugee groups) should decrease.

Hypotheses on basic variables	Effects on group differences
Refugee-specific variables:	
Hypothesis 7a: Children at risk of posttraumatic stress disorder are *less* likely to attend daycare.	Differences among refugee groups should decrease. However, the direction of the effect is unclear.
Hypotheses 7b: Children at risk of posttraumatic stress disorder are *more* likely to attend daycare.	
Hypothesis 8: Children from families with a high return orientation are less likely to attend daycare.	Differences among different refugee groups should decrease.
Hypothesis 9a: Residence status has no effect on daycare attendance.	Whether the residence status contributes to differences between various refugee groups cannot be clearly predicted from the contradictory theoretical arguments.
Hypothesis 9b: An insecure residence status reduces the probability of daycare attendance.	

4. Data and methods

To analyze refugee children's daycare attendance, we use data from two data sets, the IAB-BAMF-SOEP Survey of Refugees in Germany[3] (see Kühne, Jacobsen, & Kroh, 2019) and the Refugees in the German Educational System (ReGES) study (Will, Gentile, Heinritz, & von Maurice, 2018). In both studies, parents were the main respondents. The interviews were conducted during the 2017–2018 school year; the SOEP interviews were conducted at the end of 2017, and the ReGES interviews were conducted at the beginning of 2018.

4.1 SOEP data

The IAB-BAMF-SOEP Survey of Refugees in Germany consists of different subsamples of asylum seekers and refugees who arrived in Germany between January 2013 and December 2016. All subsamples were drawn from the Central Register of Foreigners. Altogether, 4,855 households were interviewed, resulting in 6,779 face-to-face interviews with adults and information on 5,942 children in the interviewed households in the initial interview. However, for the subsample of refugees in the analysis, only families who migrated to Germany since January 1, 2014, or thereafter were included.

As the data of the IAB-BAMF-SOEP Survey of Refugees in Germany were incorporated into the regular Socio-Economic Panel (SOEP) study (Goebel et al., 2019), they provide a basis for comparisons with other migrant groups in Germany as

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3   The Institute for Employment Research (IAB), the Migration, Integration and Asylum Research Center at the Federal Office for Migration and Refugees (BAMF-FZ), and the Socio-Economic Panel (SOEP) joined together in a cooperative longitudinal project to survey a nationwide random sample of refugee households in Germany in late 2015: the IAB-BAMF-SOEP Survey of Refugees. We use v34 of the data.

well as with individuals without a migrant background who are part of the regular SOEP study.

Our analysis samples consist of n = 1,215 non-migrants, n = 1,001 migrants, and n = 2,007 refugees.[4] We analyze two subgroups: children up to three years old and children aged three to six years but below school age. While all refugee children in the older age group were foreign-born, we also classify children in the younger age group as refugees if they were born in Germany, but their parents immigrated as refugees on January 1, 2014, or thereafter.

4.2 ReGES data

While the SOEP provides representative data on households, the ReGES study focuses explicitly on two refugee cohorts facing important educational transitions in the German education system. One of these cohorts includes 2,405 children aged four years or older who were not yet attending school at the time of the initial interview and whose parents were interviewed face-to-face.

The survey is being conducted in the five federal states of Bavaria, Hamburg, North Rhine-Westphalia, Rhineland-Palatinate, and Saxony. These states were systematically selected using various macro-level indicators (e.g., the share of assigned refugees, labor market conditions, and population density) (for more details on the study design see Will et al., 2018b).

In contrast to the SOEP, the ReGES sample was drawn from 120 municipalities selected based on the Central Register of Foreigners. Local registration offices provided the addresses of children in the relevant age groups who had moved to the municipality after January 1, 2014, and who were nationals of one of the current main countries of origin of asylum seekers with a high protection rate and who had been living in Germany for at least three consecutive months (for details on the sampling procedure, see Steinhauer, Zinn, & Will, 2019).

Our analysis sample consists of n = 2,183 children between ages four and six who had not yet started school at the interview date.

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4 We used the variables *migback*, *arefback*, *immiyear* and *gebjahr* provided by the SOEP SUF (methodology report) to generate our group variables (see for details SOEP Group, 2019). According to *migback*, natives are children born after 2010 without a migration background (both the child and both parents were born in Germany). Migrants are children born after 2010 with a direct or indirect migration background according to *migback* and without a refugee background according to *arefback* (reason for immigrating was something other than flight and asylum). According to *arefback,* refugees are children born after 2010 with a direct or indirect refugee background who immigrated to Germany in 2014 or thereafter (for those at least three years old) or whose parent immigrated in 2014 or thereafter (for those younger than three years old).

4.3 Operationalization and methods

For the analysis of elementary education in the age range of 0–3 (younger than 36 months), we use the SOEP data and for the age range 3–6 (36 months and older), we use both the SOEP and the ReGES data.[5] The SOEP data cover a representative German sample and allow comparison of refugees with the majority population and other migrant groups. The ReGES data provide additional information on the refugee-specific factors that we theorize to be influential in refugees' educational integration and allow us to examine differences among major refugee groups. For the 3–6 age group, we exclude all children who were of school age in the school year 2017/18 because we expect a strong selection effect from delayed school enrollment that would lead to biased results.

Our dependent variable is daycare attendance. We estimate linear probability models (LPMs) with robust standard errors because of the simple interpretation of the regression coefficients as changes in percentage points of the likelihood of attending daycare. We use a stepwise analysis approach, including another variable group in each step, and run the analyses separately for both data sets first to analyze how refugees' and other migrants' daycare attendance differs from that of natives; second, using the SOEP data, to examine how refugees in both age groups differ from migrants; and third, using SOEP data for 0-to-3-year-olds and SOEP and ReGES data for 3-to-6-year-olds, to evaluate how refugee groups differ from each other. Table A1 in the appendix provides information on the distributions of all the variables used for all subsamples.

Structural factors are operationalized by three variables. We use district size and federal state to control for different local and regional regulations. Additionally, we use the district-level attendance rate of all children in the 0–3 and 3–6 age groups who attend any form of childcare center as a proxy for the local provision of daycare places.

Socioeconomic background is operationalized by two main indicators: highest parental education level and highest family socioeconomic status. Parental education is measured on the International Standard Classification of Education (ISCED) scale. Socioeconomic status is measured on the International Socio-Economic Index of Occupational Status (ISEI) scale. We add a control for parents who have never been employed in Germany. As most of the refugees had not yet been employed in Germany at the time of the interview, we include the highest ISEI (HISEI) based on their employment in their countries of origin as well as a control for those who had never been employed in their countries of origin. In the ReGES analyses, we additionally include the number of books in the home in respondents' countries of origin as an internationally established indicator of sociocultural back-

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5 We used multiple imputation to deal with missing data (for details, see the end of section 4). Due to high rates of missing data (which varied by group: natives = 20.6%, migrants = 13.6%, refugees = 63.6%) on children's birth months in the SOEP data, child age is a partially imputed variable. Therefore, the analysis samples varied in terms of the level of imputation. The alternative of including only cases with complete date information would certainly lead to biased results due to selection effects.

ground, and in the SOEP analyses, we include the current monthly family income, measured in income groups, as a quasi-metric variable. Furthermore, we control for the mothers' current employment.

Migrant-specific factors are included in the form of several variables: The self-rated German language proficiency of both parents separately is included as a z-standardized factor score of the subdomains of speaking, reading, and writing (M = 0, SD = 1; the original scale was 1 = "not at all" to 5 = "very good"; Cronbach's alphas range between 0.95 and 0.96). Additionally, in the SOEP analyses, we include a dummy indicator for whether the language spoken in the family is not German. To capture information deficits and initial legal barriers after immigration, we include the length of stay (in years) in Germany as a metric variable. Unfortunately, it is only possible to evaluate this variable for refugees, as the SOEP sample does not include any new immigrants who immigrated to Germany for reasons other than asylum in the age groups under six years. Thus, to control for host-specific knowledge and cultural convergence over the course of generations, we additionally include non-refugee migrants in these analyses if their parents either immigrated themselves or were born in Germany. Furthermore, we consider social contact with natives, measured on a six-point quasi-metric scale (from 1 = "never" to 6 = "daily contact") for the refugee samples. To test for the hypothesized impact of cultural differences, we include religiosity as a proxy for internalization of cultural norms in general but also as a proxy for traditional gender roles[6] in particular. The indicator was measured on a 4-point scale (from 1 = "not at all religious" to 4 = "very religious") and entered as quasi-metric. Additionally, in the SOEP analyses, we include frequency of attendance of religious events and gatherings (on a quasi-metric scale from 1 = "never" to 4 = "at least once a week"). In the ReGES analyses, we include a dummy indicator for whether the child had ever attended daycare before immigration. This indicator is a proxy for knowledge of the positive effects of early preschool education on the one hand and cultural openness on the other hand.

To account for refugee-specific variables, we include return orientation as an indicator of whether respondents reported wanting to stay forever in Germany or to leave in the near future or at some point in the future (dummy). To test the effect of residence status, we split our sample into persons with a relatively secure status (recognized as refugees or as entitled to asylum) on the one hand and persons with a different protection status or persons whose application for asylum was denied on the other hand (dummy). Furthermore, we include an indicator for families that still lived in collective accommodation (dummy). In both data sets, three refugee groups are large enough to be analyzed separately: Afghans, Iraqis, and Syrians. All other groups are collapsed into the residual Other category. In this way, it is possible to control for systematic differences (e.g., other cultural differences) not covered by other covariates.

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6   There is a measure for gender roles included in the ReGES data but not in all the SOEP subsamples that we use.

In the ReGES analyses, we additionally include children's PTSD risk, measured by an adaptation of the Process of Recognition and Orientation of Torture Victims in European Countries to Facilitate Care and Treatment (PROTECT) questionnaire (Boillat & Chamouton, 2013) into a rating of ten PTSD symptoms reported by their parents and included as a z-standardized factor score (M = 0, SD = 1; Cronbach's alpha = 0.64).

Additional controls for the number of siblings, single-parent families, and the child's gender and age (in months) are included in both data sets.

To cope with missing data from item nonresponse, we impute missing data for all the independent variables using multiple imputations by chained equations with fully conditional specification and predictive mean matching (see Buuren, 2018). The values for the different subgroups (natives, migrants, and refugees) are imputed separately, and the data sets are combined afterward. In the resulting m = 100 data sets, we exclude cases with imputed outcome data and analyze them using Rubin's rules (see Rubin, 1987).

5. Results

The results for the comparison of refugees and other migrants with natives in the 0–3 age group are presented in Table 2a. In Model 2a-1, we replicate previous findings of migrants' lower daycare attendance rates, especially at this early age (-9.0 percentage points, p < 0.05). Furthermore, we find an even lower attendance rate for refugees (-20.4 percentage points, p < 0.01). In Model 2a-2, we include basic demographic and family control covariates (number of siblings, single-parent family indicator, and child's gender and age), which are important predictors and which already explain part of the differences in the attendance rates of refugees and other migrants. In Model 2a-3, we test Hypothesis 1 and include structural factors such as daycare supply, district size, and federal state dummies. In line with our expectations, these drivers largely explain the lower probabilities for migrants (which drop below the 95 percent significance level) and partially explain those for refugees. In Model 2a-4, we test Hypothesis 2 and control for socioeconomic background, which explains the remaining differences we find for refugees. However, neither families' current social status nor parental education effect the probability of daycare attendance. Only the indicator for whether the parents have never or have not yet worked in Germany is negatively associated with the probability of attending daycare. This result remains stable under control of family income (see Model 2a-5), but loses significance as soon as we control mothers' economic integration (Model 2a-6). Overall, employment of mothers has the strongest effect on attendance probability among all the variables.[7]

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7   We also run analyses with mothers' working hours instead. The results were the same as those based on the dummy variable for both age groups.

The results of the comparison of refugees and other migrants with natives in the 3–6 age group are presented in Table 2b. In Model 2b-1, we also replicate previous findings of daycare attendance for this age group. As in the lower age group, migrant children have a lower attendance probability than that of natives. Notably, while the difference for migrants is less than half of that for the lower age group (-3.8 percentage points, $p < 0.05$), for refugee children, we find a similar difference in attendance probability also for the 3-to-6-year-olds (-18.2 percentage points, $p < 0.01$). In Model 2b-2, we include demographic and family controls, and in Model 2b-3, we include our structural variables to test Hypothesis 1. Unlike for the younger age group, for the older age group, these macro indicators do not substantially help to explain the differences across the three subsamples. This might be traced back to the fact that daycare supply for older children is uniformly well established.[8] In Model 2b-4, we included our variables to measure socioeconomic background, which explain the remaining difference for the migrant group ($p>0.05$) and nearly half of the remaining difference for the refugee group. As in the younger age group, this result is driven not by educational differences but by family income and above all different levels of mothers' labor market participation, as seen in Model 2b-5 and 2b-6. However, in contrast to the result for the younger age group, not all of the difference in attendance rates between refugees and natives for the 3-to-6-year-olds can be explained in this way.

In the next step, we examine whether migration-specific variables help explain the different daycare attendance rates among different groups of migrants. The results of the analysis of differences between migrants and refugees to test the migrant-specific hypotheses are presented in Table 3a (0-to-3-year-olds) and Table 3b (3-to-6-year-olds). The first six models each (Models 3a-1 to 3a-6 and 3b-1 to 3b-6) replicate the analyses with natives by starting with the unconditional differences among the groups and then adding the demographic, structural, and socioeconomic variables. Differences among the groups can be explained by these factors in both age groups. In the next two models each (3a-7, 3a-8, 3b-7, 3b-8), we test our hypotheses concerning migrant-specific mechanisms of daycare attendance. While we find no supporting evidence for Hypotheses 4 (language proficiency) and 6 (traditional gender attitudes), we find slight corroborating evidence for Hypothesis 5 (acquisition of host country-specific capital) in the younger age group: Children whose parents were born in Germany are more likely to attend daycare centers ($p < 0.10$).

The consideration of refugee-specific factors may provide deeper insight into aspects that may foster or hinder the daycare attendance of refugee children. The results of the analysis for the two refugee samples in the SOEP data are presented in Tables 4a and 4b. The results of the comparison of SOEP and ReGES data

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8   There are, however, minor differences in daycare attendance (by up to 5–7 percentage points) between some federal states. For the younger age group, the federal state differences are even more pronounced, and attendance rates are significantly higher in most eastern states than in most western states. This is due to the historically higher daycare supply in the former German Democratic Republic (results are shown in Table A4 in the appendix).

are presented in Table 5. The models mostly show results with a set of harmonized variables. Only in Models 5-R4a, 5–6a, 5-R7a, and 5-R8 additional variables are included which are available only in the ReGES data. In the first model for each age-group (Models 4a-1, 4b-1, 5-S1, and 5-R1), we analyze unconditional differences between refugee (i.e., ethnic) groups. Over the two age groups and samples, we observe no systematic patterns between the ethnic groups. In the SOEP data on the younger age group, Iraqi children are more likely to attend daycare, while in the older age group, Afghani children are more likely to do so. In the ReGES sample, Afghan children are less likely to attend daycare than Syrian children (who are the reference group in all subsamples). However, the effects are not particularly robust and lose their statistical significance in subsequent models with additional controls. In Models 4a-3, 4b-3, 5-S4, and 5-R4, we control for structural factors that impact attendance rates. In contrast to the analysis that includes natives and other migrants, in the analyses with the refugee-only sample, the daycare attendance rate at the district level is significantly associated with refugee daycare attendance in the age group of 3-to-6-year-olds. This indicates that the supply of places in daycare centers is very important for the inclusion of refugee children. In Models 5-S3, 5-R3, and 5-R3a, we control for social origin, and we find the effects predicted by Hypothesis 2. Children with parents who had a higher class position in their country of origin and with parents who are more highly educated are more likely to attend daycare, even if these effects only display statistical significance in some of our analyses. Contrary to expectations, in both data sets, children of parents who never worked in their home countries have a higher chance of attending daycare. The question of whether this effect may be driven by young parents who want to continue their education in Germany cannot be answered at this time. With the ReGES data, we find the expected effects of migrant-specific factors in Models 5-R6 and 5-R6a. Children whose parents have higher German proficiency are more likely to attend daycare. As we use cross-sectional data, the direction of this association is unclear because parents whose children attend daycare have more contact with German-speaking children, other parents, and educators, which would in turn likely improve the parents' German proficiency. Our results also confirm the prediction of Hypothesis 5 that the longer refugees' stay in Germany, the greater is the likelihood of daycare attendance. The length of stay in Germany has a clear positive effect in both data sets. The effect, however, is statistically significant only for 3-to-6-year-olds. Last, in Models 5-S7, 5-R7, and 5-R7a, we control for refugee-specific variables. Neither legal status nor the type of accommodation has a significant impact on refugee children's probability of attending daycare. Only PTSD risk shows a significant association with daycare attendance; the positive sign contradicts the prediction of Hypothesis 7a but corroborates that of Hypothesis 7b. However, it must again be noted here that this could be driven by reversed causality, as parents might be made aware of their children's PTSD risk through interaction with preschool teachers. Furthermore, symptoms similar to those of PTSD may occur due to the stress that all children face when they transition into daycare.

Table 2a: Early daycare attendance, under-3-year-olds

Model	2a-1	2a-2	2a-3	2a-4	2a-5	2a-6
	Groups	+Controls	+Structural	+Social	+Income	+Mother's labor market participation
Group (Ref.: Natives)						
Migrant sample	-0.090*	-0.081*	-0.064+	-0.034	-0.022	-0.012
Refugee sample	-0.204**	-0.137**	-0.114**	0.064	0.119*	0.087
Controls						
Number of siblings		-0.039**	-0.032*	-0.018	-0.031*	-0.002
Single-parent family		-0.197**	-0.170**	-0.112*	-0.027	-0.046
Child's gender: Male (Ref.: Female)		0.003	0.015	0.011	0.013	0.026
Child's age (in months)		0.024**	0.025**	0.024**	0.024**	0.019**
Structural factors						
District size (Ref.: >500,000 inhabitants)						
>100.000–500.000 inhabitants			-0.032	-0.024	-0.023	-0.030
			(0.075)	(0.072)	(0.070)	(0.070)
<100.000 inhabitants			(0.058)	(0.057)	(0.057)	(0.054)
Federal state dummies included (Ref.: North Rhine-Westphalia)			Yes	Yes	Yes	Yes
Daycare attendance rate in district			0.004	0.003	0.002	0.002
Social origin						
Highest family status (HISEI)				0.002	0.000	-0.000
Control: Has not worked yet in Germany				-0.138**	-0.125**	-0.075+
Highest parental education (Ref.: ISCED 0–1: Max. primary)						
ISCED 2: Secondary I				-0.103	-0.080	-0.028
ISCED 3–4: Secondary II + post-secondary				-0.074	-0.075	-0.033
ISCED 5–8: Any tertiary				-0.009	-0.039	0.008
Family income					0.076**	0.043*
Working mother (Ref.: Mother does not work)						0.318**
Control: No information on mother						0.123*
Constant	0.347**	-0.034	-0.267*	-0.299*	-0.439**	-0.400**

Data: SOEP, n = 2,108; multiple imputed data (m = 100).
Notes. + p < 0.1, * p < 0.05, ** p < 0.01; unstandardized linear regression coefficients; robust variance estimation (standard errors are shown in Table A2a in the appendix); weighted.

Table 2b: Daycare attendance, 3-to-6-year-olds

Model	2b-1 Groups	2b-2 +Controls	2b-3 +Structural	2b-4 +Social	2b-5 +Income	2b-6 +Mother's labor market participation
Group (Ref.: Natives)						
Migrant sample	-0.038*	-0.034*	-0.037*	-0.031+	-0.027+	-0.025+
Refugee sample	-0.182**	-0.180**	-0.175**	-0.108*	-0.093*	-0.098*
Controls						
Number of siblings		-0.010	-0.014+	-0.010	-0.013	-0.008
Single-parent family		0.004	-0.000	0.018	0.041*	0.033+
Child's gender: Male (*Ref.: Female*)		0.009	0.007	0.005	0.006	0.007
Child's age (*in months*)		0.002**	0.002**	0.002**	0.002**	0.002**
Structural factors						
District size (*Ref.: >500,000 inhabitants*)						
>100.000–500.000 inhabitants			-0.061*	-0.068*	-0.066*	-0.065*
<100.000 inhabitants			-0.039**	-0.043**	-0.044**	-0.046**
Federal state dummies included (*Ref.: ISCED North Rhine-Westphalia*)			Yes	Yes	Yes	Yes
Daycare attendance rate in district			-0.002	-0.002	-0.003	-0.003
Social origin						
Highest family status (HISEI)				0.000	-0.000	-0.000
Control: Has not worked yet in Germany				-0.051	-0.049	-0.029
Highest parental education (Ref.: ISCED 0–1: max. primary)						
ISCED 2: Sek I				0.061	0.066	0.069
ISCED 3–4: Sek II + postsecondary				0.059	0.057	0.060
ISCED 5–8: any teriary				0.073	0.065	0.070
Family income					0.019*	0.016+
Working mother (*Ref.: Mother does not work*)						0.038+
Control: No information on mother						0.022
Constant	0.979**	0.879**	1.088**	1.018**	1.010**	0.999**

Data: SOEP, n = 2,039; multiple imputed data (m = 100).

Notes. + p < 0.1, * p < 0.05, ** p < 0.01; unstandardized linear regression coefficients; robust variance estimation (standard errors are shown in Table A2b in the appendix); weighted.

Table 3a: Early daycare attendance of migrants and refugees, under-3-year-olds

Model	3a-1 Groups	3a-2 +Controls	3a-3 +Structural	3a-4 +Social	3a-5 +Income	3a-6 +Mother's labor market participation	3a-7 +Language skills	3a-8 +all migrant-specifics
Group (Ref.: Migrants)								
Refugee sample	-0.113**	-0.061*	-0.046	0.091	0.117+	0.092	0.078	0.074
Controls								
Number of siblings		-0.035*	-0.031+	-0.016	-0.030	-0.008	-0.007	-0.011
Single-parent family		-0.214**	-0.182**	-0.151**	-0.083	-0.088	-0.089	-0.073
Child's gender: Male (Ref.: Female)		-0.025	-0.028	-0.039	-0.040	-0.011	-0.015	-0.016
Child's age (in months)		0.023**	0.023**	0.023**	0.022**	0.019**	0.019**	0.019**
Structural factors								
District size (Ref.: >500,000 inhabitants)								
>100.000–500.000 inhabitants			-0.087	-0.065	-0.074	-0.061	-0.064	-0.068
<100.000 inhabitants			-0.128+	-0.117+	-0.135*	-0.117+	-0.128*	-0.129*
Federal state dummies included (Ref.: North Rhine-Westphalia)								
Daycare attendance rate in district			0.004	0.003	0.002	0.005	0.004	0.004
Social origin								
Highest family status (HISEI)				0.003+	0.001	0.001	0.001	0.001
Control: Has not worked yet in Germany				-0.055	-0.043	-0.027	-0.035	-0.041
Highest parental education (Ref.: ISCED 0–1: max. primary)								
ISCED 2: Sek I				-0.123	-0.108	-0.073	-0.051	-0.051
ISCED 3–4: Sek II + postsecondary				-0.110	-0.108	-0.072	-0.061	-0.068
ISCED 5–8: any teriary				-0.015	-0.032	0.012	0.021	0.007
Family income					0.065**	0.037	0.038+	0.044+
Working mother (Ref.: Mother does not work)						0.262**	0.262**	0.255**
Control: No information on mother						0.091	0.090	0.092

Table 3a continued

Model	3a-1	3a-2	3a-3	3a-4	3a-5	3a-6	3a-7	3a-8
	Groups	+Controls	+Structural	+Social	+Income	+Mother's labor market participation	+Language skills	+all migrant-specifics
Migrant-specific								
Mother's German language proficiency							-0.012	-0.009
Father/partner's German language proficiency							-0.038	-0.040
Parent is 1. Generation migrant								0.081+
Control: Parent born in Germany								-0.002
Other language use at home (*Ref.: German*)								-0.067
Attendance of religious gatherings								-0.005
Constant	0.257**	-0.076	-0.170	-0.215	-0.282	-0.353*	-0.334*	-0.326+

Data: SOEP, n = 1,536; multiple imputed data (m = 100).
Notes. + p < 0.1, * p < 0.05, ** p < 0.01; unstandardized linear regression coefficients; robust variance estimation (standard errors are shown in Table A3a in the appendix); weighted.

Table 3b: Daycare attendance of migrants and refugees, 3-to-6-year-olds

Model	3b-1 Groups	3b-2 +Controls	3b-3 +Structural	3b-4 +Social	3b-5 +Income	3b-6 +Mother's labor market participation	3b-7 +Language skills	3b-8 +all migrant-specifics
Group (Ref.: Migrants)								
Refugee sample	-0.144**	-0.148**	-0.134**	-0.071	-0.057	-0.063	-0.057	-0.034
Controls								
Number of siblings		-0.018	-0.023+	-0.015	-0.021	-0.015	-0.015	-0.017
Single-parent family		0.004	-0.008	0.024	0.052	0.034	0.034	0.029
Child's gender: Male (Ref.: Female)		0.029	0.020	0.019	0.025	0.029	0.025	0.015
Child's age (in months)		0.004**	0.004**	0.004**	0.004**	0.004**	0.004**	0.004**
Structural factors								
District size (Ref.: >500,000 inhabitants)								
>100.000–500.000 inhabitants			-0.090	-0.100+	-0.092+	-0.097+	-0.093+	-0.090+
<100.000 inhabitants			-0.055*	-0.063*	-0.063*	-0.068*	-0.070*	-0.071*
Federal state dummies included (Ref.: North Rhine-Westphalia)								
Daycare attendance rate in district			-0.001	-0.001	-0.002	-0.002	-0.003	-0.004
Social origin								
Highest family status (HISEI)				0.000	-0.000	-0.000	-0.000	-0.001
Control: Has not worked yet in Germany				-0.052	-0.051	-0.020	-0.026	-0.033
Highest parental education (Ref.: ISCED 0–1: max. primary)								
ISCED 2: Sek I				0.030	0.033	0.037	0.040	0.023
ISCED 3–4: Sek II + postsecondary				0.037	0.037	0.039	0.037	0.024
ISCED 5–8: any teriary				0.059	0.049	0.054	0.053	0.043
Family income					0.026+	0.022	0.027+	0.023
Working mother (Ref.: Mother does not work)						0.071*	0.065*	0.067*
Control: No information on mother						0.010	0.013	0.006

Table 3b continued

Table 3b continued

Model	3b-1 Groups	3b-2 +Controls	3b-3 +Structural	3b-4 +Social	3b-5 +Income	3b-6 +Mother's labor market participation	3b-7 +Language skills	3b-8 +all migrant-specifics
Migrant-specific								
Mother's German language proficiency							0.015	0.020
Father/partner's German language proficiency							-0.029	-0.017
Parent is 1. Generation migrant								0.029
Control: Parent born in Germany								0.061
Other language use at home (*Ref.: German*)								-0.056
Attendance of religious gatherings								-0.020
Constant	0.942**	0.755***	0.865*	0.819*	0.862*	0.824*	0.847*	1.045*

Data: SOEP, n = 1,398; multiple imputed data (m = 100).
Notes. + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$; unstandardized linear regression coefficients; robust variance estimation (standard errors are shown in Table A3b in the appendix); weighted.

Table 4a: Early daycare attendance of refuges, under-3-year-olds

Model	4a-1 Groups	4a-2 +Controls	4a-3 +Structural	4a-4 +Social	4a-5 +Income	4a-6 +Mother's labor market participation	4a-7 +Migrant-specifics	4a-8 +Refugee-specifics
Origin (Ref.: Syria)								
Afghanistan	0.135	0.147	0.083	0.105	0.102	0.124	0.095	0.069
Iraq	0.338*	0.326*	0.294+	0.306+	0.309+	0.332*	0.309+	0.310+
Other	-0.045	0.112	0.071	0.065	0.064	0.078	-0.001	-0.013
Controls								
Number of siblings		-0.021+	-0.025*	-0.021+	-0.017	-0.018	-0.015	-0.017
Single-parent family		0.024	0.049	0.076	0.066	0.032	0.020	0.006
Child's gender: Male (Ref.: Female)		0.042	0.055+	0.056+	0.056+	0.050+	0.051+	0.052+
Child's age (in months)		0.011**	0.012**	0.012**	0.012**	0.012**	0.012**	0.012**
Structural factors								
District size (Ref.: >500,000 inhabitants)								
>100.000–500.000 inhabitants			-0.087	-0.086	-0.085	-0.072	-0.070	-0.059
<100.000 inhabitants			0.012	0.005	0.006	0.009	0.008	0.012
Federal state dummies included (Ref.: NRW)			Yes	Yes	Yes	Yes	Yes	Yes
Daycare attendance quota in district			-0.000	0.000	0.001	0.000	-0.000	-0.001
Social origin								
Highest family status (HISEI)				0.001	0.001	0.001	0.001	0.001
Control: Has not worked yet in Germany				-0.003	-0.007	0.029	0.027	0.040
Highest parental education (Ref.: ISCED 0–1: max. primary)								
ISCED 2: Sek I				0.048	0.049	0.038	0.034	0.021
ISCED 3–4: Sek II + postsecondary				0.052	0.054	0.041	0.036	0.018
ISCED 5–8: any tertiary				0.102*	0.104*	0.091*	0.079	0.051
Family income					-0.021	-0.014	-0.018	-0.012
Working mother (Ref.: Mother does not work)						0.547**	0.532**	0.537**
Control: No information on mother						-0.081**	-0.096**	-0.099**

Table 4a continued

Model	4a-1 Groups	4a-2 +Controls	4a-3 +Structural	4a-4 +Social	4a-5 +Income	4a-6 +Mother's labor market participation	4a-7 +Migrant-specifics	4a-8 +Refugee-specifics
Migrant-specific								
Mother's German language proficiency							0.020	0.020
Father/partner's German language proficiency							-0.002	-0.002
Contact to Germans							0.015+	0.013+
Child born in Germany							0.254+	0.270+
Years since migration							0.146	0.150
Other language use at home (*Ref.: German*)							-0.001	-0.005
Attendance of religious gatherings							0.008	0.005
Refugee-specific								
Return orientation (*Ref.: No*)								0.026
Accommodation: collective (*Ref.: Private*)								-0.053
Legal status: insecure (*Ref.: Secure*)								-0.001
Constant	0.172**	-0.143+	-0.114	-0.174	-0.147	-0.161	-0.316+	-0.275

Data: SOEP, n = 1,004; multiple imputed data (m = 100).
Notes. + p < 0.1, * p < 0.05, ** p < 0.01; unstandardized linear regression coefficients; robust variance estimation (standard errors are shown in Table A4a in the appendix); weighted.

Table 4b: Daycare attendance of refugees, 3-to-6-year-olds

Model	4b-1	4b-2	4b-3	4b-4	4b-5	4b-6	4b-7	4b-8
	Groups	+Controls	+Structural	+Social	+Income	+Mother's labor market participation	+Migrant-specific	+Refugee-specific
Origin (Ref.: Syria)								
Afghanistan	0.096*	0.099*	0.095*	0.088+	0.087+	0.082+	0.080+	0.095+
Iraq	0.015	0.010	0.020	0.031	0.029	0.037	0.051	0.063
Other	0.016	0.002	0.059	0.039	0.035	0.023	0.021	0.047
Controls								
Number of siblings		-0.017	-0.012	-0.009	-0.007	-0.003	-0.003	-0.005
Single-parent family		0.047	0.022	0.034	0.030	0.002	-0.015	-0.015
Child's gender: Male (Ref.: Female)		-0.032	-0.039	-0.039	-0.038	-0.035	-0.028	-0.031
Child's age (in months)		0.009**	0.009**	0.009**	0.009**	0.009**	0.008**	0.008**
Structural factors								
District size (Ref.: >500,000 inhabitants)								
>100.000–500.000 inhabitants			0.057	0.066	0.066	0.053	0.016	0.027
<100.000 inhabitants			0.046	0.051	0.050	0.038	0.002	0.013
Federal state dummies included (Ref.: NRW)			Yes	Yes	Yes	Yes	Yes	Yes
Daycare attendance rate in district			0.024**	0.023**	0.023**	0.022**	0.019**	0.019**
Social origin								
Highest family status (HISEI)				0.002	0.002	0.002	0.001	0.001
Control: Has not worked yet in Germany				-0.041	-0.042	-0.026	-0.052	-0.037
Highest parental education (Ref.: ISCED 0–1: max. primary)								
ISCED 2: Sek I				-0.042	-0.041	-0.042	-0.051	-0.053
ISCED 3–4: Sek II + postsecondary				0.068	0.068	0.058	0.015	0.013
ISCED 5–8: any tertiary				-0.017	-0.016	-0.014	-0.050	-0.055
Family income					-0.009	-0.009	-0.011	-0.008
Working mother (Ref.: Mother does not work)						0.124	0.024	0.032
Control: No information on mother						-0.102*	-0.116**	-0.119**

Table 4b continued

Table 4b continued

Model	4b-1 Groups	4b-2 +Controls	4b-3 +Structural	4b-4 +Social	4b-5 +Income	4b-6 +Mother's labor market participation	4b-7 +Migrant-specific	4b-8 +Refugee-specific
Migrant-specific								
Mother's German language proficiency							0.039	0.033
Father/partner's German language proficiency							0.040	0.038
Years since migration							0.074**	0.071**
Other language use at home (*Ref.: German*)							-0.080	-0.078
Attendance of religious gatherings							0.005	0.001
Refugee-specific								
Return orientation (*Ref.: No*)								0.133
Contact to Germans								0.009
Accommodation: collective (*Ref.: Private*)								0.011
Legal status: insecure (*Ref.: Secure*)								-0.019
Constant	0.775**	0.316*	-1.954**	-1.850**	-1.832**	-1.756**	-1.375*	-1.415*

Data: SOEP, n = 932; multiple imputed data (m = 100).
Notes. + p < 0.1, * p < 0.05, ** p < 0.01; unstandardized linear regression coefficients; robust variance estimation (standard errors are shown in Table A4b in the appendix); weighted.

Table 5: Daycare attendance of refugees SOEP-ReGES

Data	SOEP (3–6)							ReGES										
Model	5-S1	5-S2	5-S3	5-S4	5-S5	5-S6	5-S7	5-R1	5-R2	5-R3	5-R4	5-R4a	5-R5	5-R6	5-R6a	5-R7	5-R7a	5-R8
Country of Origin (Ref.: Syria)																		
Afghanistan	0.096*	0.099*	0.095*	0.091+	0.088+	0.087+	0.112*	-0.065*	-0.064*	-0.050+	-0.042	-0.037	-0.042	-0.028	-0.027	-0.03	-0.031	-0.027
Iraq	0.015	0.010	0.020	0.027	0.033	0.043	0.060	-0.024	-0.025	-0.057+	-0.042	-0.04	-0.042	-0.053+	-0.051	-0.056+	-0.066*	-0.062+
Other	0.016	0.002	0.059	0.046	0.030	0.051	0.080	0.025	0.022	0.007	0.007	0.001	0.008	-0.014	-0.017	-0.018	-0.019	-0.026
Controls																		
Number of siblings		-0.017	-0.012	-0.009	-0.004	-0.006	-0.006		-0.008	-0.010+	-0.007	-0.006	-0.007	-0.006	-0.006	-0.006	-0.006	-0.005
Single parent		0.047	0.022	0.022	-0.010	-0.014	-0.007		-0.024	-0.024	-0.025	-0.023	-0.025	-0.022	-0.023	-0.022	-0.023	-0.023
Child's gender: male (Ref.: Female)		-0.032	-0.039	-0.031	-0.029	-0.030	-0.030		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Child's age (in months)		0.009**	0.009**	0.009**	0.009**	0.008**	0.008**		0.012**	0.012**	0.012**	0.012**	0.012**	0.010**	0.010**	0.010**	0.010**	0.010**
Structural factors																		
District size (Ref.: >500.000 inhabitants)																		
>100.000–500.000 inhabitants			0.057	0.064	0.054	0.026	0.034			0.089**	0.085**	0.085**	0.085**	0.087**	0.086**	0.088**	0.089**	0.089**
<100.000 inhabitants			0.046	0.049	0.038	0.009	0.018			0.019	0.024	0.017	0.024	0.019	0.019	0.018	0.019	0.015
Federal state dummies included (Ref.: NRW)			Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Daycare attendance rate in district			0.024**	0.023**	0.023**	0.018**	0.019**			0.013**	0.012**	0.012**	0.012**	0.010**	0.010**	0.010**	0.010**	0.010**
Social origin																		
Highest parental education (Ref.: ISCED 0–1: Max. primary)																		
ISCED 2: Sek I				-0.040	-0.040	-0.045	-0.046				0.036	0.031	0.036	0.021	0.02	0.022	0.022	0.018
ISCED 3–4: Sek II + postsecondary				0.080	0.070	0.021	0.023				0.03	0.019	0.03	0.008	0.007	0.008	0.007	-0.002
ISCED 5–8: any tertiary				-0.009	-0.002	-0.053	-0.059				0.053+	0.035	0.053+	0.022	0.022	0.023	0.022	0.009
Highest family status in home country				0.000	-0.000	-0.000	0.000				0.001*	0.001	0.001*	0.001	0.001	0.001	0.001	0.001
Control: Did not work in home country				0.118**	0.097*	0.039	0.043				0.042*	0.043*	0.042*	0.034	0.035+	0.035+	0.033	0.034+
Books at home Country of Origin												0.026**						
Working mother (Ref.: Mother does not work)					0.189+	0.076	0.077						-0.004	-0.008	-0.011	-0.008	-0.011	0.019**
Control: No information on mother					-0.087+	-0.112*	-0.117**											-0.016

Table 5 continued

Table 5 continued

Data	SOEP (3–6)							ReGES										
Model	5-S1	5-S2	5-S3	5-S4	5-S5	5-S6	5-S7	5-R1	5-R2	5-R3	5-R4	5-R4a	5-R5	5-R6	5-R6a	5-R7	5-R7a	5-R8
Migrant-specific																		
German proficiency, mother						0.037	0.036							0.023*	0.023*	0.023*	0.024*	0.023*
German proficiency, father/partner						0.040	0.040							0.046**	0.046**	0.047**	0.047**	0.045**
Years since migration						0.069**	0.067**							0.068**	0.069**	0.068**	0.067**	0.067**
Contact to Germans						0.013	0.012							0.006	0.006	0.006	0.005	0.006
Religiosity						-0.024	-0.025							-0.005	-0.005	-0.004	-0.005	-0.006
Daycare attendance in home country															0.042+			0.038+
Refugee-specific																		
Legal status: insecure (*Ref.: Secure*)						0.138										-0.009	-0.01	-0.009
Accommodation: collective (*Ref.: private*)						0.017										0.011	0.006	0.006
Return orientation: yes (*Ref.: No*)						-0.023										-0.023	-0.025	-0.024
PTSD risk																	0.024*	0.023*
Constant	0.775**	0.316*	-1.95**	-1.90**	-1.84**	-1.40*	-1.50*	0.837**	0.858**	-0.255	-0.311	-0.334	-0.311	-0.241	-0.217	-0.253	-0.208	-0.214

Data: SOEP, n = 932; ReGES, n = 2,183; multiple imputed data (m = 100).
Notes. + p < 0.1 * p < 0.05 ** p < 0.01; unstandardized linear regression coefficients, robust variance estimation (standard errors are shown in Table A5 in the appendix); SOEP results weighted.

6. Summary and discussion

This article aimed to shed further light on the structural integration of refugee children into the German educational system by comparing refugee children's daycare attendance with that of other children in Germany. Furthermore, we used two unique data sets to analyze differences in the daycare attendance of refugee children of different ages for the first time.

The first important result is that refugee children do attend daycare centers, even though their daycare attendance rates are still lower than those of non-migrant children and children from other types of migrant families. The second important result is that these inequalities can be explained by socioeconomic, cultural, and structural factors known from the literature. Lastly, we showed that refugee-specific factors do not have an important impact on daycare attendance.

For the 0-to-3-years age group, the differences in the attendance rates of refugees can be explained mainly by socioeconomic indicators. In particular, their mothers' labor market participation increases children's probability of attending a daycare center. At a policy level, our findings indicate the importance of rapid labor market integration of refugee families. Especially for the age group of under-3-year-olds, labor market integration can be seen as the key factor for daycare attendance. Differences between refugees and other migrants can be explained by structural factors, while migrant- and refugee-specific factors play only a minor role in explaining differences between refugees and other migrants as well as between refugee groups.

For the age group of 3-to-6-year-old children, socioeconomic factors are central for the explanation of differences in daycare attendance among the three observed groups. Mothers' employment again shows the strongest association. In contrast to the younger age group, structural factors and migration-specific factors, years since migration in particular, are important predictors for daycare attendance of refugees and other migrants. Also, we find only minor influences of refugee-specific factors, which is a very important result: neither refugees' legal status nor their type of accommodation has a significant influence on their participation in preschool education.

For future research, it is important to take a closer look at the factors which influence how long it takes refugee children to enroll in a daycare center. Statements from daycare directors suggest that the support of specialist staff and volunteers plays a major role here (see Baisch et al., 2017). Besides, however, we found a great influence of structural factors that is more prominent for refugee children than for this age group in general. Especially in districts with an ample supply of daycare places, the probability of enrolling in a daycare center was significantly higher. This indicates that it is especially important for refugees to have access to a sufficient supply of daycare places.

There are, however, some limitations to our current findings. First, refugees who have not yet been assigned to a host community are not included in the ReGES sample and probably are less likely to have been included in the SOEP sur-

vey; the results should therefore not be hastily generalized to refugees who still live in initial reception facilities or AnKER centers. Second, at this point, our study design is cross-sectional, which precludes certain insights (e.g., on the causal relationship between parents' German language proficiency and daycare attendance). In further studies, it will be possible to use longitudinal data from both the SOEP and the ReGES study to address some of these current limitations.

Lastly, the question of whether refugee status should be regarded as a separate dimension of inequality remains not satisfactorily answered yet. For refugees who live in Germany for some time and who are allocated to municipalities, the same social mechanisms explain most of the educational differences between them, other migrants, and non-migrants in early and preschool age. To explain the remaining differences between these groups and within the refugee population, it is necessary to integrate refugee-specific conditions into our theoretical models. This may be especially important for special refugee groups like those in AnKER centers.

Acknowledgments

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Table A1: Descriptives by (sub)sample

Data	SOEP 0-3			SOEP 3-6			ReGES
Subgroup	Group (Ref. Natives)	Migrant sample	Refugee sample	Group (Ref. Natives)	Migrant sample	Refugee sample	RC1
n+	572	532	1,004	641	466	932	2,183
Preschool attendance in % (S.E.)	35.3 (2.0)	26.2 (1.9)	13.4 (1.1)	98.3 (0.5)	94.3 (1.1)	79.1 (1.3)	82.7 (0.4)
Controls							
Number of siblings							
Mean (S.E.)	1.0 (0.0)	1.0 (1.1)	1.5 (0.0)	1.0 (0.0)	1.1 (0.0)	2.0 (0.0)	2.1 (0.0)
SD (S.E.)	1.0 (0.1)	1.2 (0.1)	1.3 (0.0)	1.0 (1.0)	1.0 (0.1)	1.4 (0.0)	1.7 (0.2)
Missing in %	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-parent family (*Ref.: No*)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
Yes	6.1 (1.0)	7.1 (1.1)	12.6 (1.0)	12.7 (1.3)	12.1 (1.5)	11.6 (1.1)	0.0 (0.0)
Missing in %	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Child's gender (*Ref.: Female*)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
Male	47.5 (2.2)	55.2 (2.2)	45.2 (1.6)	54.3 (2.0)	48.6 (2.3)	53.9 (1.6)	52.9 (0.0)
Missing in %	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Child's age (*in months*)							
Mean (S.E.)	18.2 (0.4)	17.8 (0.4)	16.3 (0.3)	52.3 (0.4)	51.3 (0.5)	55.7 (0.4)	66.3 (0.2)
SD (S.E.)	10.7 (0.2)	9.9 (0.2)	10.2 (0.2)	10.2 (0.2)	9.9 (0.2)	10.9 (0.2)	7.6 (0.1)
Missing in %	18.9	10.3	58.4	25.7	20.5	84.0	0
Structural factors							
District size	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
>100,000 inhabitants	72.9 (1.9)	56.7 (2.2)	63.7 (1.5)	74.5 (1.7)	67.2 (2.2)	63.2 (1.6)	9.0 (1.0)
>100,000-500,000 inhabitants	12.9 (1.4)	16.1 (1.6)	19.1 (1.2)	12.9 (1.3)	15.5 (1.7)	20.2 (1.3)	30.5 (1.0)
<500,000 inhabitants	14.3 (1.5)	27.2 (1.9)	17.2 (1.2)	12.6 (1.3)	17.3 (1.8)	16.6 (1.2)	60.6 (1.0)
Missing	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Federal state	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
Baden-Wuerttemberg	10.5 (1.3)	21.7 (1.8)	9.4 (0.9)	10.7 (1.2)	21.8 (1.9)	11.2 (1.0)	0.0
Bavaria	18.6 (1.6)	18.5 (1.7)	15.1 (1.1)	14.4 (1.4)	16.0 (1.7)	12.8 (1.1)	8.2 (0.6)
Berlin	4.1 (0.8)	3.5 (0.8)	3.3 (0.6)	3.4 (0.7)	3.7 (0.9)	3.8 (0.6)	0.0

Table A1 continued

Table A1 continued

Brandenburg	3.8 (0.8)	1.6 (0.5)	3.6 (0.6)	4.7 (0.8)	0.9 (0.4)	3.6 (0.6)	0.0
Bremen	0.0	2.0 (0.6)	2.2 (0.5)	0.0	1.1 (0.5)	2.5 (0.5)	0.0
Hamburg	1.4 (0.5)	4.0 (0.9)	2.3 (0.5)	3.1 (0.7)	2.3 (0.7)	1.6 (0.4)	13.1 (1.0)
Hesse	7.6 (1.1)	9.3 (1.3)	7.0 (0.8)	6.8 (1.0)	10.2 (1.4)	6.6 (0.8)	0.0
Mecklenburg–Pommerania	2.5 (0.7)	0.5 (0.3)	1.9 (0.4)	3.0 (0.7)	0.4 (0.3)	0.5 (0.2)	0.0
Lower Saxony	11.0 (1.3)	7.0 (1.1)	13.0 (1.1)	9.6 (1.2)	8.1 (1.3)	10.5 (1.0)	0.0
North Rhine–Westphalia	17.0 (1.6)	20.6 (1.8)	26.5 (1.4)	19.4 (1.6)	21.0 (1.9)	27.7 (1.5)	62.6 (1.0)
Rhineland–Palatinate	2.0 (0.6)	4.9 (0.9)	3.8 (0.6)	3.6 (0.7)	6.8 (1.2)	4.6 (0.7)	7.1 (0.1)
Saarland	1.3 (0.5)	0.2 (0.2)	1.5 (0.4)	1.7 (0.5)	1.4 (0.5)	1.6 (0.4)	0.0
Saxony	7.8 (1.1)	0.8 (0.4)	2.8 (0.5)	6.0 (0.9)	1.9 (0.6)	4.1 (0.7)	9.2 (0.0)
Saxony-Anhalt	3.9 (0.8)	1.1 (0.5)	2.9 (0.5)	3.6 (0.7)	0.2 (0.2)	3.7 (0.6)	0.0
Schleswig–Holstein	4.0 (0.98)	2.2 (0.6)	3.4 (0.6)	5.7 (0.9)	3.1 (0.8)	3.1 (0.6)	0.0
Thurungia	4.5 (0.9)	2.0 (0.6)	1.2 (0.3)	4.3 (0.8)	1.1 (0.5)	2.2 (0.5)	0.0
Missing	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Daycare attendance rate in district							
Mean (S.E.)	33.4 (0.5)	30.8 (0.4)	30.8 (0.3)	90.7 (0.1)	90.3 (0.1)	90.3 (0.1)	87.5 (0.1)
SD (S.E.)	12.2 (0.3)	8.7 (0.4)	10.2 (0.3)	12.0 (0.3)	7.8 (0.4)	10.7 (0.3)	3.7 (0.1)
Missing in %	4.5	3.5	3.8	3.7	3.7	4.8	32.4
Social origin							
Highest family status in Germany (HISEI)							
Min. / max.	16/88	16/88	16/85	17/90	16/88	16/80	n/a
Mean (S.E.)	57.3 (1.4)	48.1 (1.7)	33.1 (4.4)	57.6 (1.6)	49.5 (1.9)	31.8 (4.0)	n/a
SD (S.E.)	17.6 (0.5)	18.7 (0.6)	16.3 (2.1)	16.5 (0.6)	18.7 (0.8)	17.1 (2.2)	n/a
Has not worked yet in Germany (in %, (S.E.))	6.0 (1.0)	9.6 (1.3)	86.6 (1.1)	3.8 (0.8)	10.4 (1.4)	84.4 (1.2)	n/a
Missing in %	0.2	0.7	7.5	0.7	1.0	7.5	n/a
Highest family status in country of origin (HISEI)							
Min. / max.	n/a	n/a	16/88	n/a	n/a	16/88	11.7/88.7
Mean (S.E.)	n/a	n/a	50.2 (6.9)	n/a	n/a	52.1 (7.0)	47.7 (0.8)
SD (S.E.)	n/a	n/a	17.8 (1.1)	n/a	n/a	18.3 (1.2)	23.8 (0.3)
Has not worked (in %, (S.E.))	n/a	n/a	9.4 (0.9)	n/a	n/a	0.7 (0.9)	19.3
Missing in %	n/a	n/a	54.4	n/a	n/a	56.9	10.3

Table A1 continued

Table A1 continued

	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
Highest parental education (HISCED)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
ISCED 0-1: Max. primary	0.4 (0.3)	2.9 (0.8)	35.8 (1.7)	0.3 (0.2)	3.2 (0.9)	35.3 (1.8)	36.8 (1.1)
ISCED 2: Secondary I	3.5 (0.8)	9.3 (1.3)	20.3 (1.4)	6.8 (1.0)	7.1 (1.4)	22.1 (1.6)	13.7 (0.8)
ISCED 3-4: Secondary II + post-secondary	41.8 (2.1)	39.0 (2.2)	25.6 (1.5)	41.3 (2.0)	44.3 (2.4)	19.7 (1.5)	23.3 (1.0)
ISCED 5-8: Any tertiary	54.3 (2.1)	48.8 (2.2)	18.3 (1.3)	51.7 (2.0)	45.4 (2.4)	22.9 (1.5)	26.2 (1.0)
Missing in %	1.2	2.1	9.4	1.2	2.4	9.8	28.8
Books at home in country of origin	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
0 = 0-10 books	n/a	n/a	34.2 (1.6)	n/a	n/a	21.2 (1.4)	56.2 (1.1)
1 = 11-25 books	n/a	n/a	57.8 (1.7)	n/a	n/a	66.0 (1.6)	18.9 (0.9)
2 = 26-100 books	n/a	n/a	7.5 (0.9)	n/a	n/a	11.7 (1.1)	15.8 (0.8)
3 = 101 and more books	n/a	n/a	0.5 (0.2)	n/a	n/a	1.1 (0.4)	9.1 (0.6)
Missing	n/a	n/a	0.1 (0.1)	n/a	n/a	0.0 (0.0)	3.9
Family income (*monthly*)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
0 = < 1,000 €	0.9 (0.4)	1.5 (0.5)	n/a	1.7 (0.6)	1.9 (0.7)	n/a	n/a
1 = 1,000–2,000€	10.9 (1.3)	20.9 (1.8)	n/a	13.2 (1.4)	23.0 (2.0)	n/a	n/a
2 = 2,000–3,000€	25.3 (1.9)	34.7 (2.1)	n/a	20.5 (1.7)	25.2 (2.0)	n/a	n/a
3 = 3,000–4,000€	36.2 (2.1)	19.3 (1.8)	n/a	27.4 (1.9)	21.5 (1.9)	n/a	n/a
4 = > 4,000€	26.6 (1.9)	23.6 (1.9)	n/a	37.2 (2.0)	28.5 (2.1)	n/a	n/a
Missing	4.9	3.8	n/a	3.0	5.3	n/a	n/a
Working mother	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
Yes	36.2 (2.0)	26.9 (1.9)	0.7 (0.3)	64.8 (1.9)	59.0 (2.3)	2.9 (0.5)	3.4 (0.4)
No	55.4 (2.1)	67.2 (2.0)	73.0 (1.4)	22.7 (1.7)	36.8 (2.2)	71.8 (1.5)	96.6 (0.4)
No mother in household*	8.4 (1.2)	5.9 (1.0)	26.3 (1.4)	12.5 (1.3)	4.2 (0.9)	25.3 (1.4)	0.0
Missing	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mother's weekly working hours	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
Mother does not work	55.4 (2.1)	67.2 (2.0)	73.0 (1.4)	22.7 (1.7)	36.8 (2.2)	71.8 (1.5)	96.6 (0.4)
0-20h	17.1 (1.6)	16.7 (1.7)	0.2 (0.1)	24.7 (1.8)	24.4 (2.3)	2.4 (0.6)	n/a
>20-30h	12.4 (1.4)	5.9 (1.1)	0.0	21.8 (1.7)	19.0 (2.2)	0.0	n/a
>30h	6.7 (1.1)	4.2 (0.9)	0.5 (0.2)	18.3 (1.6)	15.7 (2.2)	0.5 (0.4)	0.0
No mother in household*	8.4 (1.2)	5.9 (1.0)	26.3 (1.4)	12.5 (1.3)	4.2 (0.9)	25.3 (1.4)	0.0
Missing	3.7	3.0	0.0	7.6	7.5	0.8	n/a

Table A1 continued

Table A1 continued

Migrant-specific

Mother's German language proficiency						
Min. / max.	-2.0/2.1	-1.5/1.6	-1.4/1.6	n/a	-1.5/1.6	n/a
Mean (S.E.)	0.0 (0.0)	-0.4 (0.0)	0.9 (0.0)	n/a	-0.5 (0.0)	n/a
SD (S.E.)	1.0 (0.0)	0.8 (0.0)	0.8 (0.0)	n/a	0.7 (0.0)	n/a
No mother in household* (in %, (S.E.))	0.0	25.3 (1.4)	4.2 (0.9)	n/a	26.3 (1.4)	n/a
No information because of filtering in questionnaire	0.0	0.0	31.5 (2.2)	n/a	0.0	n/a
Missing in %	27.8	0.0	0.2	n/a	0.0	n/a
Father/Partner's German language proficiency						
Min. / max.	-2.9/2.0	-2.0/1.7	-1.9/1.7	n/a	-2.0/1.7	n/a
Mean (S.E.)	0.0 (0.0)	-0.3 (0.0)	0.7 (0.1)	n/a	-0.3 (0.1)	n/a
SD (S.E.)	1.0 (0.0)	0.9 (0.0)	1.0 (0.0)	n/a	0.9 (0.0)	n/a
No father in household* (in %, (S.E.))	0.0	29.9 (1.5)	28.1 (2.1)	n/a	29.7(1.4)	n/a
No information because of filtering in questionnaire	0.0	0.0	25.9 (2.0)	n/a	0.0	n/a
Missing in %	10.0	0.0	0.1	n/a	0.0	n/a
Years since migration						
Mean (S.E.)	1.8 (0.0)	1.8 (0.0)	n/a	n/a	1.1 (0.1)	n/a
SD (S.E.)	0.8 (0.0)	0.9 (0.0)	n/a	n/a	0.6 (0.1)	n/a
Missing in %	0.0	1.3	n/a	n/a	0.7	n/a
Child born in Germany (*Ref.: No*)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
Yes	0.0 (0.0)	0.0 (0.0)	100.0	100.0	87.8 (1.0)	100.0
Missing	0.0	0.0	0.0	0.0	0.0	0.0
Country of origin	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
Afghanistan	9.2 (0.6)	16.9 (1.2)	0.0 (0.0)	0.0 (0.0)	1.4 (0.4)	0.0 (0.0)
Iraq	13.4 (0.7)	12.1 (1.1)	0.0 (0.0)	0.0 (0.0)	2.6 (0.5)	0.0 (0.0)
Syria	73.7 (1.0)	44.8 (1.6)	0.0 (0.0)	0.0 (0.0)	6.1 (0.8)	0.0 (0.0)
Other	3.7 (0.4)	26.3 (1.4)	100.0 (0.0)	100.0 (0.0)	89.9 (1.0)	100.0 (0.0)
Missing	1.8	0.0	0.0	0.0	0.0	0.0

Table A1 continued

Table A1 continued

	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
Parent 1st-gen. migrant (*Ref.: No*)							
Yes	n/a	60.2 (2.1)	100.0 (0.0)	n/a	60.2 (2.3)	100.0 (0.0)	100.0 (0.0)
Parent born in Germany	n/a	15.5 (1.6)	0.0	n/a	24.3 (2.0)	0.0	0.0
Missing	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Language use at home (*Ref.: German*)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
Other	0	44.5 (2.2)	91.0 (2.6)	0	36.4 (2.2)	87.6 (3.5)	n/a
Missing	0.2	0.4	39.0	0.5	0.6	38.8	n/a
Contact to Germans *(min: 1 = daily; max: 6 = never)*							
Mean (S.E.)	n/a	n/a	3.3 (0.1)	n/a	n/a	3.5 (0.1)	3.6 (0.0)
SD (S.E.)	n/a	n/a	1.9 (0.0)	n/a	n/a	1.9 (0.0)	1.8 (0.0)
Missing in %	n/a	n/a	2.4	n/a	n/a	1.6	1.0
Religiosity *(min. 1 = not at all; max: 4 = very much)*							
Mean (S.E.)	n/a	n/a	2.9 (0.1)	n/a	n/a	2.9 (0.1)	2.7 (0.0)
SD (S.E.)	n/a	n/a	0.9 (0.0)	n/a	n/a	0.9 (0.0)	0.7 (0.0)
Missing in %	n/a	n/a	53.9	n/a	n/a	55.6	9.1
Daycare attendance in country of origin (*Ref.: No*):	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
Yes	n/a	n/a	n/a	n/a	n/a	n/a	11.6 (0.7)
Missing	n/a	n/a	n/a	n/a	n/a	n/a	1.9
Attendance of religious gatherings *(0 = never - 3 = once a week)*							
Mean (S.E.)	0.6 (0.0)	0.7 (0.0)	0.9 (0.0)	0.6 (0.0)	0.7 (0.0)	0.7 (0.0)	n/a
SD (S.E.)	0.8 (0.0)	1.0 (0.0)	1.2 (0.0)	0.9 (0.0)	1.0 (0.0)	1.1 (0.0)	n/a
Missing in %	0.3	0.7	3.3	0.2	1.6	2.3	n/a
Refugee specific							
Return orientation (*Ref.: No*)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
Yes	n/a	13.4 (1.7)	3.7 (0.7)	n/a	10.3 (1.5)	3.8 (0.7)	14.5 (0.8)
Missing	n/a	7.1	5.1	n/a	6.0	4.5	2.9
Legal status (*Ref.: Secure status*)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
Insecure status	n/a	n/a	37.2 (1.9)	n/a	n/a	35.2 (1.9)	10.0 (0.7)
Missing	n/a	n/a	3.9	n/a	n/a	1.6	26.8

Table A1 continued

Table A1 continued

Accommodation (Ref.: Private)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)	% (S.E.)
Collective	n/a	n/a	35.0 (1.5)	n/a	n/a	30.3 (1.5)	15.2 (0.0)
Missing	n/a	n/a	0.0	n/a	n/a	0.0	0.0
PTSD risk							
Min / max.	n/a	n/a	n/a	n/a	n/a	n/a	-0.5/5.7
Mean (S.E.)	n/a	n/a	n/a	n/a	n/a	n/a	0.0 (0.0)
SD (S.E.)	n/a	n/a	n/a	n/a	n/a	n/a	0.8 (0.0)
Missing in %	n/a	n/a	n/a	n/a	n/a	n/a	7.6

Note. Descriptives are based on multiple imputed data (m = 100).

*No mother in household or not clearly identifiable. + case numbers for SOEP data are also based on imputed data.

Table A2a: Early daycare attendance, under-3-year-olds

Model	2a-1	2a-2	2a-3	2a-4	2a-5	2a-6
Group (Ref.: Natives)						
Migrant sample	-0.090*	-0.081*	-0.064+	-0.034	-0.022	-0.012
	(0.041)	(0.035)	(0.035)	(0.037)	(0.036)	(0.033)
Refugee sample	-0.204**	-0.137**	-0.114**	0.064	0.119*	0.087
	(0.035)	(0.031)	(0.031)	(0.060)	(0.060)	(0.055)
Controls						
Number of siblings		-0.039**	-0.032*	-0.018	-0.031*	-0.002
		(0.015)	(0.015)	(0.015)	(0.015)	(0.013)
Single-parent family		-0.197**	-0.170**	-0.112*	-0.027	-0.046
		(0.046)	(0.044)	(0.044)	(0.048)	(0.049)
Child's gender: Male (Ref.: Female)		0.003	0.015	0.011	0.013	0.026
		(0.034)	(0.033)	(0.033)	(0.032)	(0.029)
Child's age (in months)		0.024**	0.025**	0.024**	0.024**	0.019**
		(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Structural factors						
District size (Ref.: >500,000 inhabitants)						
>100.000–500.000 inhabitants			-0.032	-0.024	-0.023	-0.030
			(0.075)	(0.072)	(0.070)	(0.070)
<100.000 inhabitants			-0.068	-0.058	-0.074	-0.088
			(0.058)	(0.057)	(0.057)	(0.054)
			-0.032	-0.024	-0.023	-0.030
Federal state (Ref.: North Rhine-Westphalia)						
Baden-Wuerttemberg			0.146*	0.121+	0.115+	0.108+
			(0.064)	(0.063)	(0.061)	(0.056)
Bavaria			0.139**	0.119*	0.116*	0.072
			(0.052)	(0.053)	(0.052)	(0.050)
Berlin			0.303**	0.274**	0.282**	0.243**
			(0.089)	(0.089)	(0.092)	(0.083)

Table A2a continued

Table A2a continued

Brandenburg	0.261*	0.302*	0.342**	0.292**
	(0.121)	(0.120)	(0.116)	(0.113)
Bremen	0.179	0.266*	0.235*	0.127
	(0.151)	(0.126)	(0.114)	(0.096)
Hamburg	0.103	0.073	0.069	0.080
	(0.124)	(0.120)	(0.113)	(0.100)
Hesse	0.160**	0.149*	0.130*	0.126*
	(0.062)	(0.061)	(0.062)	(0.057)
Mecklenburg-Pommerania	0.201	0.229+	0.256*	0.208+
	(0.127)	(0.128)	(0.130)	(0.116)
Lower Saxony	0.156**	0.152**	0.166**	0.157**
	(0.057)	(0.057)	(0.056)	(0.051)
Rhineland-Palatinate	0.059	0.054	0.054	-0.015
	(0.070)	(0.069)	(0.069)	(0.078)
Saarland	-0.080	-0.047	-0.042	-0.015
	(0.139)	(0.121)	(0.127)	(0.122)
Saxony	0.225*	0.244*	0.290*	0.224*
	(0.113)	(0.115)	(0.114)	(0.102)
Saxony-Anhalt	0.237+	0.298*	0.347**	0.294*
	(0.131)	(0.128)	(0.124)	(0.119)
Schleswig-Holstein	0.228**	0.226**	0.209*	0.172*
	(0.085)	(0.085)	(0.082)	(0.073)
Thurungia	0.146	0.148	0.213	0.204
	(0.143)	(0.142)	(0.137)	(0.126)
Daycare attendance rate in district	0.004	0.003	0.002	0.002
	(0.003)	(0.003)	(0.003)	(0.003)
Social origin				
Highest family status (HISEI)		0.002	0.000	-0.000
		(0.001)	(0.001)	(0.001)
Control: Has not worked yet in Germany		-0.138**	-0.125**	-0.075+
		(0.049)	(0.047)	(0.042)

Table A2a continued

Table A2a continued

	(1)	(2)	(3)	(4)	(5)	(6)
Highest parental education (Ref.: ISCED 0–1: Max. primary)						
ISCED 2: Secondary I				-0.103	-0.080	-0.028
				(0.087)	(0.083)	(0.069)
ISCED 3-4: Secondary II + post-secondary				-0.074	-0.075	-0.033
				(0.083)	(0.078)	(0.065)
ISCED 5-8: Any tertiary				-0.009	-0.039	0.008
				(0.086)	(0.082)	(0.071)
Family income (*monthly*)					0.076**	0.043*
					(0.020)	(0.020)
Working mother (*Ref.: Mother does not work*)						0.318**
						(0.043)
Control: No information on mother						0.123*
						(0.060)
Constant	0.347**	-0.034	-0.267*	-0.299*	-0.439**	-0.400**
	(0.031)	(0.036)	(0.117)	(0.148)	(0.149)	(0.137)

Data: SOEP, n = 2,108; multiple imputed data (m=100).
Notes: + p < 0.1 * p < 0.05 ** p < 0.01; additional controls for child born in Germany; unstandardized linear regression coefficients; robust standard errors in parentheses; weighted.

Table A2b: Daycare attendance, 3-to-6-year-olds

Model	2b-1	2b-2	2b-3	2b-4	2b-5	2b-6
Group (Ref.: Natives)						
Migrant sample	-0.038*	-0.034*	-0.037*	-0.031+	-0.027+	-0.025+
	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)	(0.015)
Refugee sample	-0.182**	-0.180**	-0.175**	-0.108*	-0.093*	-0.098*
	(0.023)	(0.024)	(0.024)	(0.045)	(0.046)	(0.046)
Controls						
Number of siblings		-0.010	-0.014+	-0.010	-0.013	-0.008
		(0.008)	(0.008)	(0.008)	(0.009)	(0.009)
Single-parent family		0.004	-0.000	0.018	0.041*	0.033+
		(0.015)	(0.016)	(0.015)	(0.019)	(0.019)
Child's gender: Male *(Ref.: Female)*		0.009	0.007	0.005	0.006	0.007
		(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Child's age *(in months)*		0.002**	0.002**	0.002**	0.002**	0.002**
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Structural factors						
District size (Ref.: >500,000 inhabitants)						
>100.000–500.000 inhabitants			-0.061*	-0.068*	-0.066*	-0.065*
			(0.030)	(0.030)	(0.030)	(0.030)
<100.000 inhabitants			-0.039**	-0.043**	-0.044**	-0.046**
			(0.013)	(0.015)	(0.015)	(0.015)
Federal state (Ref.: North Rhine-Westphalia)						
Baden-Wuerttemberg			0.072**	0.063*	0.061*	0.061*
			(0.025)	(0.025)	(0.025)	(0.025)
Bavaria			0.022	0.017	0.020	0.022
			(0.027)	(0.027)	(0.027)	(0.027)
Berlin			-0.015	-0.025	-0.023	-0.027
			(0.024)	(0.025)	(0.025)	(0.026)
Brandenburg			0.038	0.042	0.049+	0.050+

Table A2b continued

Table A2b continued

	(0.028)	(0.029)	(0.030)	(0.030)
Bremen	0.036	0.045	0.039	0.031
	(0.038)	(0.044)	(0.044)	(0.044)
Hamburg	0.015	0.004	0.000	-0.003
	(0.027)	(0.027)	(0.028)	(0.028)
Hesse	-0.002	-0.007	-0.006	-0.005
	(0.039)	(0.039)	(0.040)	(0.039)
Mecklenburg–Pommerania	0.073**	0.073*	0.087**	0.086**
	(0.027)	(0.029)	(0.032)	(0.032)
Lower Saxony	0.059**	0.056*	0.063**	0.065**
	(0.022)	(0.022)	(0.023)	(0.024)
Rhineland-Palatinate	0.043	0.044	0.040	0.039
	(0.043)	(0.045)	(0.045)	(0.045)
Saarland	0.061*	0.057+	0.068*	0.071*
	(0.027)	(0.031)	(0.030)	(0.030)
Saxony	0.053*	0.044*	0.052*	0.056*
	(0.023)	(0.022)	(0.023)	(0.023)
Saxony-Anhalt	0.049+	0.044+	0.049+	0.052+
	(0.026)	(0.026)	(0.026)	(0.027)
Schleswig-Holstein	0.033	0.024	0.024	0.022
	(0.028)	(0.028)	(0.028)	(0.028)
Thurungia	-0.017	-0.019	-0.012	-0.011
	(0.068)	(0.068)	(0.067)	(0.066)
Daycare attendance quota in district	-0.002	-0.002	-0.003	-0.003
	(0.002)	(0.002)	(0.002)	(0.002)

Table A2b continued

Social origin						
Highest family status (HISEI)				0.000	-0.000	-0.000
				(0.000)	(0.001)	(0.001)
Control: Has not worked yet in Germany				-0.051	-0.049	-0.029
				(0.034)	(0.034)	(0.036)
Highest parental education (Ref.: ISCED 0-1: Max. primary)						
ISCED 2: Secondary I				0.061	0.066	0.069
				(0.072)	(0.071)	(0.071)
ISCED 3-4: Secondary II + postsecondary				0.059	0.057	0.060
				(0.071)	(0.070)	(0.070)
ISCED 5-8: Any teriary				0.073	0.065	0.070
				(0.071)	(0.070)	(0.069)
Family income (*monthly*)					0.019*	0.016+
					(0.008)	(0.008)
Working mother (*Ref.: Mother does not work*)						0.038+
						(0.020)
Control: No information on mother						0.022
						(0.029)
Constant	0.979**	0.879**	1.088**	1.018**	1.010**	0.999**
	(0.007)	(0.034)	(0.196)	(0.217)	(0.217)	(0.215)

Data: SOEP, n = 2,039; multiple imputed data (m=100).
Notes. + p < 0.1 * p < 0.05 ** p < 0.01; unstandardized linear regression coefficients; robust standard errors in parentheses; weighted.

Table A3a: Early daycare attendance of migrants and refugees, under-3-year-olds

Model	3a-1	3a-2	3a-3	3a-4	3a-5	3a-6	3a-7	3a-8
Group (Ref.: Migrants)								
Refugee sample	-0.113**	-0.061*	-0.046	0.091	0.117+	0.092	0.078	0.074
	(0.033)	(0.030)	(0.029)	(0.065)	(0.061)	(0.059)	(0.060)	(0.059)
Controls								
Number of siblings		-0.035*	-0.031+	-0.016	-0.030	-0.008	-0.007	-0.011
		(0.016)	(0.017)	(0.018)	(0.019)	(0.017)	(0.017)	(0.017)
Single-parent family		-0.214**	-0.182**	-0.151**	-0.083	-0.088	-0.089	-0.073
		(0.066)	(0.066)	(0.057)	(0.059)	(0.059)	(0.061)	(0.062)
Child's gender: Male (Ref.: Female)		-0.025	-0.028	-0.039	-0.040	-0.011	-0.015	-0.016
		(0.046)	(0.046)	(0.043)	(0.043)	(0.039)	(0.039)	(0.038)
Child's age (in months)		0.023**	0.023**	0.023**	0.022**	0.019**	0.019**	0.019**
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Structural factors								
District size (Ref.: >500.000 inhabitants)								
>100.000-500.000 inhabitants			-0.087	-0.065	-0.074	-0.061	-0.064	-0.068
			(0.094)	(0.084)	(0.081)	(0.075)	(0.073)	(0.071)
<100.000 inhabitants			-0.128+	-0.117+	-0.135*	-0.117+	-0.128*	-0.129*
			(0.071)	(0.067)	(0.067)	(0.063)	(0.062)	(0.061)
Federal state (Ref.: North Rhine-Westphalia)								
Baden-Wuerttemberg			0.154*	0.092	0.080	0.078	0.071	0.071
			(0.075)	(0.068)	(0.066)	(0.065)	(0.062)	(0.063)
Bavaria			0.025	-0.013	-0.022	-0.053	-0.062	-0.066
			(0.057)	(0.055)	(0.054)	(0.051)	(0.052)	(0.052)
Berlin			0.058	0.023	0.030	0.036	0.029	0.028
			(0.111)	(0.112)	(0.115)	(0.120)	(0.117)	(0.113)
Brandenburg			0.286+	0.241	0.277+	0.120	0.117	0.137
			(0.165)	(0.158)	(0.157)	(0.152)	(0.151)	(0.150)
Bremen			0.091	0.164	0.130	0.073	0.057	0.029
			(0.158)	(0.139)	(0.126)	(0.106)	(0.111)	(0.114)

Table A3a continued

Table A3a continued

Hamburg	-0.021	-0.077	-0.078	-0.077	-0.098	-0.083
	(0.167)	(0.155)	(0.146)	(0.126)	(0.126)	(0.126)
Hesse	0.053	0.010	0.007	0.003	0.007	0.002
	(0.088)	(0.083)	(0.081)	(0.073)	(0.072)	(0.072)
Mecklenburg–Pommerania	-0.164	-0.264	-0.288+	-0.278+	-0.250	-0.286+
	(0.170)	(0.164)	(0.164)	(0.152)	(0.152)	(0.154)
Lower Saxony	0.046	0.044	0.045	0.041	0.045	0.024
	(0.074)	(0.072)	(0.074)	(0.072)	(0.072)	(0.074)
Rhineland–Palatinate	0.092	0.080	0.078	0.030	0.020	0.026
	(0.069)	(0.065)	(0.063)	(0.068)	(0.070)	(0.071)
Saarland	0.451*	0.369*	0.408*	0.431+	0.423+	0.383+
	(0.193)	(0.184)	(0.199)	(0.235)	(0.226)	(0.213)
Saxony	0.100	0.070	0.095	0.034	0.030	0.031
	(0.171)	(0.150)	(0.153)	(0.126)	(0.126)	(0.127)
Saxony-Anhalt	-0.108	0.070	0.107	0.002	-0.002	0.007
	(0.178)	(0.185)	(0.182)	(0.166)	(0.166)	(0.163)
Schleswig–Holstein	0.178	0.155	0.105	0.104	0.104	0.102
	(0.119)	(0.115)	(0.109)	(0.096)	(0.100)	(0.100)
Thurungia	-0.113	-0.046	0.043	-0.048	-0.063	-0.061
	(0.202)	(0.191)	(0.193)	(0.177)	(0.176)	(0.173)
Daycare attendance quota in district	0.004	0.003	0.002	0.005	0.004	0.004
	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Social origin						
Highest family status (HISEI)		0.003+	0.001	0.001	0.001	0.001
		(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
Control: Has not worked yet in Germany		-0.055	-0.043	-0.027	-0.035	-0.041
		(0.071)	(0.063)	(0.059)	(0.058)	(0.057)
Highest parental education (Ref.: ISCED 0–1: Max. primary)						
ISCED 2: Secondary I		-0.123	-0.108	-0.073	-0.051	-0.051
		(0.089)	(0.084)	(0.073)	(0.075)	(0.078)

Table A3a continued

Table A3a continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ISCED 3-4: Secondary II + postsecondary				-0.110	-0.108	-0.072	-0.061	-0.068
				(0.088)	(0.084)	(0.074)	(0.074)	(0.076)
ISCED 5-8: Any teriary				-0.015	-0.032	0.012	0.021	0.007
				(0.090)	(0.089)	(0.079)	(0.078)	(0.081)
Family income (*monthly*)					0.065**	0.037	0.038+	0.044+
					(0.023)	(0.023)	(0.023)	(0.024)
Working mother (*Ref.: Mother does not work*)						0.262**	0.262**	0.255**
						(0.058)	(0.057)	(0.056)
Control: No information on mother						0.091	0.090	0.092
						(0.062)	(0.062)	(0.063)
Migrant-specific								
Mother's German language proficiency							-0.012	-0.009
							(0.026)	(0.026)
Father/partner's German language proficiency							-0.038	-0.040
							(0.028)	(0.028)
Parent is 1.Gen migrant								0.081+
								(0.048)
wControl: Parent born in Germany								-0.002
								(0.072)
Other language use at home (*Ref.: German*)								-0.067
								(0.042)
Attendance of religious gatherings								-0.005
								(0.018)
Constant	0.257**	-0.076	-0.170	-0.215	-0.282	-0.353*	-0.334*	-0.326+
	(0.028)	(0.049)	(0.157)	(0.183)	(0.183)	(0.168)	(0.168)	(0.173)

Data: SOEP, n = 1,536; multiple imputed data (m=100).
Notes. + p < 0.1 * p < 0.05 ** p < 0.01; unstandardized linear regression coefficients; robust standard errors in parentheses; weighted.

Table A3b: Daycare attendance of migrants and refugees, 3-to-6-year-olds

Model	3b-1	3b-2	3b-3	3b-4	3b-5	3b-6	3b-7	3b-8
Group (Ref.: Migrants)								
Refugee sample	-0.144**	-0.148**	-0.134**	-0.071	-0.057	-0.063	-0.057	-0.034
	(0.026)	(0.028)	(0.029)	(0.052)	(0.053)	(0.051)	(0.053)	(0.054)
Controls								
Number of siblings		-0.018	-0.023+	-0.015	-0.021	-0.015	-0.015	-0.017
		(0.014)	(0.014)	(0.013)	(0.014)	(0.014)	(0.014)	(0.014)
Single-parent family		0.004	-0.008	0.024	0.052	0.034	0.034	0.029
		(0.033)	(0.035)	(0.032)	(0.035)	(0.034)	(0.034)	(0.036)
Child's gender: Male (Ref.: Female)		0.029	0.020	0.019	0.025	0.029	0.025	0.015
		(0.025)	(0.025)	(0.025)	(0.026)	(0.026)	(0.025)	(0.025)
Child's age (in months)		0.004**	0.004**	0.004**	0.004**	0.004**	0.004**	0.004**
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Structural factors								
District size (Ref.: >500,000 inhabitants)								
>100.000-500.000 inhabitants			-0.090	-0.100+	-0.092+	-0.097+	-0.093+	-0.090+
			(0.056)	(0.054)	(0.054)	(0.053)	(0.051)	(0.051)
<100.000 inhabitants			-0.055*	-0.063*	-0.063*	-0.068*	-0.070*	-0.071*
			(0.023)	(0.027)	(0.027)	(0.027)	(0.028)	(0.029)
Federal state (Ref.: North Rhine-Westphalia)								
Baden-Wuerttemberg			0.100*	0.081+	0.078+	0.069	0.068+	0.081*
			(0.041)	(0.043)	(0.043)	(0.043)	(0.041)	(0.041)
Bavaria			0.058	0.041	0.049	0.043	0.044	0.053
			(0.039)	(0.041)	(0.042)	(0.041)	(0.041)	(0.043)
Berlin			-0.039	-0.064	-0.056	-0.075	-0.076	-0.078
			(0.053)	(0.059)	(0.057)	(0.057)	(0.060)	(0.061)
Brandenburg			0.058	0.043	0.038	0.030	0.023	0.009
			(0.086)	(0.084)	(0.080)	(0.079)	(0.077)	(0.076)

Table A3b continued

Table A3b continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Highest parental education (Ref.: ISCED 0-1: Max. primary)								
ISCED 2: Secondary I				0.030 (0.071)	0.033 (0.070)	0.037 (0.071)	0.040 (0.071)	0.023 (0.069)
ISCED 3-4: Secondary II + postsecondary				0.037 (0.070)	0.037 (0.068)	0.039 (0.068)	0.037 (0.068)	0.024 (0.065)
ISCED 5-8: Any tertiary				0.059 (0.067)	0.049 (0.064)	0.054 (0.065)	0.053 (0.064)	0.043 (0.061)
Family income (*monthly*)					0.026+ (0.015)	0.022 (0.015)	0.027+ (0.015)	0.023 (0.016)
Working mother (*Ref.: Mother does not work*)						0.071* (0.034)	0.065* (0.033)	0.067* (0.032)
Control: No information on mother						0.010 (0.046)	0.013 (0.046)	0.006 (0.044)
Migrant-specific								
Mother's German language proficiency							0.015 (0.020)	0.020 (0.019)
Father/partner's German language proficiency							-0.029 (0.020)	-0.017 (0.018)
Parent is 1.Gen migrant								0.029 (0.047)
Control: Parent born in Germany								0.061 (0.039)
Other language use at home (*Ref.: German*)								-0.056 (0.035)
Attendance of religious gatherings								-0.020 (0.018)
Constant	0.942** (0.014)	0.755** (0.072)	0.865* (0.370)	0.819* (0.369)	0.862* (0.369)	0.824* (0.369)	0.847* (0.382)	1.045* (0.420)

Data: SOEP, n = 1,398; multiple imputed data (m=100).
Notes. + p < 0.1 * p < 0.05 ** p < 0.01; unstandardized linear regression coefficients; robust standard errors in parentheses; weighted.

Table A4a: Early daycare attendance of refugees, under-3-year-olds

Model	4a-1	4a-2	4a-3	4a-4	4a-5	4a-6	4a-7	4a-8
Origin (Ref.: Syria)								
Afghanistan	0.135	0.147	0.083	0.105	0.102	0.124	0.095	0.069
	(0.169)	(0.152)	(0.153)	(0.146)	(0.147)	(0.150)	(0.146)	(0.147)
Iraq	0.338*	0.326*	0.294+	0.306+	0.309+	0.332*	0.309+	0.310+
	(0.171)	(0.163)	(0.164)	(0.163)	(0.162)	(0.165)	(0.169)	(0.170)
Other	-0.045	0.112	0.071	0.065	0.064	0.078	-0.001	-0.013
	(0.066)	(0.071)	(0.067)	(0.065)	(0.065)	(0.064)	(0.135)	(0.139)
Controls								
Number of siblings		-0.021+	-0.025*	-0.021+	-0.017	-0.018	-0.015	-0.017
		(0.011)	(0.011)	(0.011)	(0.013)	(0.013)	(0.013)	(0.013)
Single-parent family		0.024	0.049	0.076	0.066	0.032	0.020	0.006
		(0.064)	(0.059)	(0.059)	(0.060)	(0.060)	(0.062)	(0.062)
Child's gender: Male *(Ref.: Female)*		0.042	0.055+	0.056+	0.056+	0.050+	0.051+	0.052+
		(0.032)	(0.030)	(0.030)	(0.030)	(0.029)	(0.029)	(0.028)
Child's age *(in months)*		0.011**	0.012**	0.012**	0.012**	0.012**	0.012**	0.012**
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Structural factors								
District size (Ref.: >500,000 inhabitants)								
>100.000–500.000 inhabitants			-0.087	-0.086	-0.085	-0.072	-0.070	-0.059
			(0.062)	(0.061)	(0.061)	(0.060)	(0.061)	(0.061)
<100.000 inhabitants			0.012	0.005	0.006	0.009	0.008	0.012
			(0.063)	(0.062)	(0.063)	(0.062)	(0.064)	(0.064)
Federal state (Ref.: North Rhine-Westphalia)								
Baden-Wuerttemberg			0.018	0.020	0.019	-0.001	0.007	-0.016
			(0.066)	(0.064)	(0.064)	(0.063)	(0.065)	(0.063)
Bavaria			-0.024	-0.014	-0.016	-0.014	-0.012	-0.026
			(0.057)	(0.056)	(0.056)	(0.056)	(0.055)	(0.056)
Berlin			0.170+	0.167	0.161	0.123	0.116	0.095

Table A4a continued

Table A4a continued

	(1)	(2)	(3)	(4)	(5)	(6)
	(0.114)	(0.105)	(0.105)	(0.108)	(0.106)	(0.103)
Brandenburg	0.181	0.160	0.139	0.132	0.136	0.155
	(0.123)	(0.120)	(0.117)	(0.119)	(0.119)	(0.117)
Bremen	0.355*	0.370*	0.383*	0.386*	0.379*	0.362*
	(0.140)	(0.157)	(0.152)	(0.161)	(0.160)	(0.164)
Hamburg	0.229	0.225	0.215	0.208	0.206	0.214
	(0.140)	(0.139)	(0.139)	(0.145)	(0.147)	(0.145)
Hesse	-0.064	-0.063	-0.072	-0.065	-0.067	-0.081+
	(0.048)	(0.046)	(0.047)	(0.047)	(0.047)	(0.048)
Mecklenburg-Pommerania	0.111	0.025	-0.087	-0.072	-0.072	-0.081
	(0.133)	(0.122)	(0.118)	(0.129)	(0.129)	(0.135)
Lower Saxony	-0.019	-0.022	-0.025	-0.040	-0.040	-0.043
	(0.043)	(0.044)	(0.043)	(0.043)	(0.043)	(0.043)
Rhineland-Palatinate	0.039	0.039	0.038	0.039	0.034	0.043
	(0.069)	(0.069)	(0.067)	(0.065)	(0.065)	(0.066)
Saarland	-0.074	-0.051	-0.065	-0.126	-0.136	-0.098
	(0.144)	(0.136)	(0.137)	(0.136)	(0.139)	(0.135)
Saxony	0.034	0.003	-0.004	0.006	0.006	0.009
	(0.093)	(0.089)	(0.090)	(0.091)	(0.091)	(0.093)
Saxony-Anhalt	-0.060	-0.102	-0.116	-0.104	-0.098	-0.090
	(0.094)	(0.090)	(0.089)	(0.092)	(0.090)	(0.092)
Schleswig-Holstein	0.047	0.037	0.047	0.036	0.030	0.020
	(0.077)	(0.079)	(0.076)	(0.076)	(0.076)	(0.074)
Thurungia	0.156	0.129	0.115	0.237	0.237	0.260
	(0.127)	(0.124)	(0.123)	(0.180)	(0.179)	(0.195)
Daycare attendance rate in district	-0.001	-0.000	0.000	0.001	0.000	-0.000
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)

Table A4a continued

Social origin					
Highest family status (HISEI)	0.001	0.001	0.001	0.001	0.001
	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Control: Has not worked yet in Germany	-0.003	-0.007	0.029	0.027	0.040
	(0.098)	(0.098)	(0.094)	(0.094)	(0.090)
Highest parental education (Ref.: ISCED 0-1: Max. primary)					
ISCED 2: Secondary I	0.048	0.049	0.038	0.034	0.021
	(0.042)	(0.042)	(0.042)	(0.044)	(0.043)
ISCED 3-4: Secondary II + postsecondary	0.052	0.054	0.041	0.036	0.018
	(0.043)	(0.043)	(0.043)	(0.045)	(0.044)
ISCED 5-8: Any teriary	0.102*	0.104*	0.091*	0.079	0.051
	(0.046)	(0.046)	(0.046)	(0.051)	(0.054)
Family income (*monthly*)	-0.021	-0.014	-0.018	-0.012	
	(0.031)	(0.030)	(0.031)	(0.032)	
Working mother (*Ref.: Mother does not work*)		0.547**	0.532**	0.537**	
		(0.107)	(0.108)	(0.109)	
Control: No information on mother		-0.081**	-0.096**	-0.099**	
		(0.029)	(0.032)	(0.032)	
Migrant-specific					
Mother's German language proficiency				0.020	0.020
				(0.024)	(0.024)
Father/partner's German language proficiency				-0.002	-0.002
				(0.022)	(0.021)
Contact to Germans				0.015+	0.013+
				(0.008)	(0.008)
Child born in Germany				0.254+	0.270+
				(0.149)	(0.153)
Years since migration				0.146	0.150
				(0.092)	(0.091)

Table A4a continued

Table A4a continued

Other language use at home (*Ref.: German*)							-0.001 (0.063)	-0.005 (0.062)
Attendance of religious gatherings							0.008 (0.013)	0.005 (0.013)
Refugee-specific								
Return orientation (*Ref.: No*)								0.026 (0.063)
Accommodation: Collective (*Ref.: Private*)								-0.053 (0.040)
Legal status: insecure (*Ref.: Secure*)								-0.001 (0.035)
Constant	0.172** (0.065)	-0.143+ (0.085)	-0.114 (0.119)	-0.174 (0.159)	-0.147 (0.158)	-0.161 (0.154)	-0.316+ (0.181)	-0.275 (0.189)

Table A4b: Daycare attendance of refugees, 3-to-6-year-olds

Model	4b-1	4b-2	4b-3	4b-4	4b-5	4b-6	4b-7	4b-8
Origin (Ref.: Syria)								
Afghanistan	0.096*	0.099*	0.095*	0.088+	0.087+	0.082+	0.080+	0.095+
	(0.046)	(0.045)	(0.044)	(0.047)	(0.047)	(0.047)	(0.048)	(0.053)
Iraq	0.015	0.010	0.020	0.031	0.029	0.037	0.051	0.063
	(0.058)	(0.058)	(0.052)	(0.053)	(0.054)	(0.054)	(0.053)	(0.053)
Other	0.016	0.002	0.059	0.039	0.035	0.023	0.021	0.047
	(0.062)	(0.058)	(0.049)	(0.049)	(0.049)	(0.049)	(0.050)	(0.059)
Controls								
Number of siblings		-0.017	-0.012	-0.009	-0.007	-0.003	-0.003	-0.005
		(0.017)	(0.015)	(0.015)	(0.017)	(0.017)	(0.017)	(0.017)
Single-parent family		0.047	0.022	0.034	0.030	0.002	-0.015	-0.015
		(0.076)	(0.071)	(0.070)	(0.073)	(0.076)	(0.072)	(0.072)
Child's gender: Male *(Ref.: Female)*		-0.032	-0.039	-0.039	-0.038	-0.035	-0.028	-0.031
		(0.039)	(0.037)	(0.036)	(0.036)	(0.035)	(0.034)	(0.034)
Child's age *(in months)*		0.009**	0.009**	0.009**	0.009**	0.009**	0.008**	0.008**
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Structural factors								
District size (Ref.: >500,000 inhabitants)								
>100.000–500.000 inhabitants			0.057	0.066	0.066	0.053	0.016	0.027
			(0.080)	(0.081)	(0.081)	(0.080)	(0.080)	(0.079)
<100.000 inhabitants			0.046	0.051	0.050	0.038	0.002	0.013
			(0.079)	(0.080)	(0.080)	(0.079)	(0.078)	(0.078)
Federal state (Ref.: North Rhine-Westphalia)								
Baden-Wuerttemberg			0.128*	0.136*	0.136*	0.130*	0.131*	0.129*
			(0.064)	(0.062)	(0.062)	(0.061)	(0.061)	(0.060)
Bavaria			0.035	0.033	0.033	0.016	0.055	0.053
			(0.075)	(0.071)	(0.071)	(0.070)	(0.069)	(0.070)
Berlin			-0.232	-0.205	-0.210	-0.262	-0.272+	-0.253
			(0.176)	(0.169)	(0.168)	(0.165)	(0.158)	(0.163)

Table A4b continued

Table A4b continued

Brandenburg	0.076	0.074	0.074	0.065	0.050	0.052
	(0.076)	(0.077)	(0.077)	(0.074)	(0.078)	(0.075)
Bremen	0.228	0.216	0.218	0.242	0.088	0.077
	(0.194)	(0.186)	(0.188)	(0.178)	(0.177)	(0.172)
Hamburg	0.282*	0.299*	0.300*	0.295*	0.236+	0.259*
	(0.119)	(0.122)	(0.122)	(0.131)	(0.123)	(0.126)
Hesse	0.066	0.079	0.079	0.059	0.086	0.090
	(0.066)	(0.066)	(0.066)	(0.067)	(0.065)	(0.067)
Mecklenburg-Pommerania	0.104	0.047	0.050	0.059	0.021	0.034
	(0.097)	(0.099)	(0.100)	(0.087)	(0.119)	(0.132)
Lower Saxony	0.191**	0.210**	0.210**	0.216**	0.196**	0.191**
	(0.068)	(0.068)	(0.068)	(0.069)	(0.068)	(0.066)
Rhineland-Palatinate	0.067	0.083	0.084	0.094	0.109	0.095
	(0.080)	(0.080)	(0.080)	(0.083)	(0.084)	(0.083)
Saarland	0.227**	0.197*	0.199*	0.243**	0.174+	0.190*
	(0.070)	(0.085)	(0.086)	(0.091)	(0.090)	(0.085)
Saxony	-0.063	-0.029	-0.029	-0.023	-0.053	-0.063
	(0.094)	(0.095)	(0.095)	(0.100)	(0.097)	(0.098)
Saxony-Anhalt	-0.119	-0.094	-0.093	-0.117	-0.125	-0.131
	(0.122)	(0.118)	(0.119)	(0.113)	(0.104)	(0.106)
Schleswig-Holstein	0.093	0.101	0.102	0.082	0.040	0.047
	(0.097)	(0.095)	(0.094)	(0.093)	(0.093)	(0.090)
Thurungia	-0.021	0.004	0.004	0.002	0.004	-0.003
	(0.089)	(0.088)	(0.088)	(0.091)	(0.088)	(0.096)
Daycare attendance rate in district	0.024**	0.023**	0.023**	0.022**	0.019**	0.019**
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)

Table A4b continued

Table A4b continued

Social origin					
Highest family status (HISEI)	0.002	0.002	0.002	0.001	0.001
	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)
Control: Has not worked yet in Germany	-0.041	-0.042	-0.026	-0.052	-0.037
	(0.101)	(0.101)	(0.098)	(0.098)	(0.097)
Highest parental education (Ref.: ISCED 0-1: Max. primary)					
ISCED 2: Secondary I	-0.042	-0.041	-0.042	-0.051	-0.053
	(0.052)	(0.052)	(0.052)	(0.052)	(0.052)
ISCED 3-4: Secondary II + postsecondary	0.068	0.068	0.058	0.015	0.013
	(0.050)	(0.050)	(0.048)	(0.049)	(0.049)
ISCED 5-8: Any teriary	-0.017	-0.016	-0.014	-0.050	-0.055
	(0.056)	(0.056)	(0.054)	(0.057)	(0.057)
Family income (*monthly*)		-0.009	-0.009	-0.011	-0.008
		(0.039)	(0.038)	(0.036)	(0.037)
Working mother (*Ref.: Mother does not work*)			0.124	0.024	0.032
			(0.105)	(0.104)	(0.102)
Control: No information on mother			-0.102*	-0.116**	-0.119**
			(0.044)	(0.043)	(0.042)
Migrant-specific					
Mother's German language proficiency				0.039	0.033
				(0.026)	(0.026)
Father/partner's German language proficiency				0.040	0.038
				(0.026)	(0.026)
Years since migration				0.074**	0.071**
				(0.020)	(0.020)
Other language use at home (*Ref.: German*)				-0.080	-0.078
				(0.074)	(0.074)
Attendance of religious gatherings				0.005	0.001
				(0.015)	(0.015)

Table A4b continued

Table Ab4 continued

Refugee-specific								
Return orientation (*Ref.: No*)								0.133
								(0.083)
Contact to Germans								0.009
								(0.011)
Accommodation: Collective (*Ref.: Private*)								0.011
								(0.046)
Legal status: Insecure (*Ref.: Secure*)								-0.019
								(0.049)
Constant	0.775**	0.316*	-1.954**	-1.850**	-1.832**	-1.756**	-1.375*	-1.415*
	(0.029)	(0.122)	(0.640)	(0.637)	(0.634)	(0.640)	(0.615)	(0.622)

Data: SOEP, n = 932; multiple imputed data (m=100).
Notes. + p < 0.1 * p < 0.05 ** p < 0.01; unstandardized linear regression coefficients; robust standard errors in parentheses; weighted.

Table A5: Daycare attendance of refugees SOEP-ReGES

Data	SOEP (3-6)							ReGES										
Model	5-S1	5-S2	5-S3	5-S4	5-S5	5-S6	5-S7	5-R1	5-R2	5-R3	5-R4	5-R4a	5-R5	5-R6	5-R6a	5-R7	5-R7a	5-R8
Country of Origin (Ref.: Syria)																		
Afghanistan	0.096* (0.046)	0.099* (0.045)	0.095* (0.044)	0.091+ (0.047)	0.088+ (0.047)	0.087+ (0.051)	0.112* (0.056)	-0.065* (0.027)	-0.064* (0.026)	-0.050+ (0.027)	-0.042 (0.027)	-0.037 (0.027)	-0.042 (0.027)	-0.028 (0.026)	-0.027 (0.026)	-0.03 (0.027)	-0.031 (0.027)	-0.027 (0.026)
Iraq	0.015 (0.058)	0.010 (0.058)	0.020 (0.052)	0.027 (0.053)	0.033 (0.052)	0.043 (0.052)	0.060 (0.052)	-0.024 (0.029)	-0.025 (0.029)	-0.057+ (0.031)	-0.042 (0.031)	-0.04 (0.031)	-0.042 (0.031)	-0.053+ (0.031)	-0.051 (0.031)	-0.056+ (0.032)	-0.066* (0.032)	-0.062+ (0.032)
Other	0.016 (0.062)	0.002 (0.058)	0.059 (0.049)	0.046 (0.049)	0.030 (0.049)	0.051 (0.050)	0.080 (0.059)	0.025 (0.040)	0.022 (0.040)	0.007 (0.039)	0.007 (0.039)	0.001 (0.039)	0.008 (0.039)	-0.014 (0.040)	-0.017 (0.040)	-0.018 (0.041)	-0.019 (0.041)	-0.026 (0.041)
Controls																		
Number of siblings		-0.017 (0.017)	-0.012 (0.015)	-0.009 (0.015)	-0.004 (0.015)	-0.006 (0.015)	-0.006 (0.015)		-0.008 (0.005)	-0.010+ (0.006)	-0.007 (0.005)	-0.006 (0.005)	-0.007 (0.005)	-0.006 (0.005)	-0.006 (0.005)	-0.006 (0.005)	-0.006 (0.005)	-0.005 (0.005)
Single parent		0.047 (0.076)	0.022 (0.071)	0.022 (0.071)	-0.010 (0.073)	-0.014 (0.068)	-0.007 (0.068)		-0.024 (0.016)	-0.024 (0.016)	-0.025 (0.016)	-0.023 (0.016)	-0.025 (0.016)	-0.022 (0.016)	-0.023 (0.016)	-0.022 (0.016)	-0.023 (0.016)	-0.023 (0.016)
Child's gender: male (Ref.: female)		-0.032 (0.039)	-0.039 (0.037)	-0.031 (0.036)	-0.029 (0.036)	-0.030 (0.034)	-0.030 (0.034)		0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
Child's age (in months)		0.009** (0.002)	0.009** (0.002)	0.009** (0.002)	0.009** (0.002)	0.008** (0.002)	0.008** (0.002)		-0.064* (0.026)	-0.050+ (0.027)	-0.042 (0.027)	-0.037 (0.027)	-0.042 (0.027)	-0.028 (0.026)	-0.027 (0.026)	-0.03 (0.027)	-0.031 (0.027)	-0.027 (0.026)
Structural factors																		
District size (Ref.: >500,000 inhabitants)																		
>100.000–500.000 inhabitants			0.057 (0.080)	0.064 (0.081)	0.054 (0.080)	0.026 (0.080)	0.034 (0.079)			0.089** (0.019)	0.085** (0.019)	0.085** (0.019)	0.085** (0.019)	0.087** (0.019)	0.086** (0.019)	0.088** (0.019)	0.089** (0.019)	0.089** (0.019)
<100.000 inhabitants			0.046 (0.079)	0.049 (0.079)	0.038 (0.078)	0.009 (0.078)	0.018 (0.077)			0.019 (0.031)	0.024 (0.031)	0.017 (0.031)	0.024 (0.031)	0.019 (0.030)	0.019 (0.031)	0.018 (0.031)	0.019 (0.031)	0.015 (0.031)
Federal state (Ref.: NRW)																		
Baden-Wuerttemberg			0.128* (0.064)	0.139* (0.062)	0.133* (0.061)	0.125* (0.061)	0.128* (0.060)											

Table A5 continued

Table A5 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Bavaria	0.035 (0.075)	0.041 (0.073)	0.021 (0.071)	0.049 (0.069)	0.053 (0.070)	-0.02 (0.030)	-0.017 (0.030)	-0.018 (0.030)	-0.017 (0.030)	-0.017 (0.030)	-0.018 (0.030)	-0.017 (0.030)	-0.017 (0.030)	-0.012 (0.030)
Berlin	-0.232 (0.176)	-0.211 (0.174)	-0.260 (0.169)	-0.263 (0.168)	-0.244 (0.166)									
Brandenburg	0.076 (0.076)	0.069 (0.078)	0.062 (0.075)	0.052 (0.076)	0.058 (0.076)									
Bremen	0.228 (0.194)	0.194 (0.181)	0.218 (0.174)	0.093 (0.171)	0.102 (0.170)									
Hamburg	0.282* (0.119)	0.294* (0.122)	0.292* (0.129)	0.237+ (0.124)	0.267* (0.128)	0.089** (0.026)	0.089** (0.026)	0.083** (0.026)	0.089** (0.026)	0.101** (0.026)	0.101** (0.026)	0.093** (0.036)	0.095** (0.036)	0.091* (0.035)
Hesse	0.066 (0.066)	0.067 (0.066)	0.050 (0.066)	0.099 (0.069)	0.107 (0.070)									
Mecklenburg-Pommerania	0.104 (0.097)	0.071 (0.124)	0.058 (0.097)	0.031 (0.123)	0.026 (0.128)									
Lower Saxony	0.191** (0.068)	0.201** (0.067)	0.209** (0.068)	0.188** (0.067)	0.195** (0.068)									
Rhineland-Palatinate	0.067 (0.080)	0.069 (0.079)	0.078 (0.082)	0.087 (0.080)	0.088 (0.081)	0.026 (0.032)	0.018 (0.032)	0.017 (0.032)	0.018 (0.032)	0.013 (0.032)	0.013 (0.032)	0.014 (0.032)	0.018 (0.032)	0.018 (0.032)
Saarland	0.227** (0.070)	0.227** (0.079)	0.260** (0.083)	0.189* (0.096)	0.199* (0.097)									
Saxony	-0.063 (0.094)	-0.038 (0.095)	-0.032 (0.099)	-0.061 (0.099)	-0.066 (0.098)	-0.105** (0.036)	-0.101** (0.036)	-0.099** (0.035)	-0.101** (0.036)	-0.087* (0.035)	-0.088* (0.035)	-0.083* (0.035)	-0.090** (0.035)	-0.090** (0.035)
Saxony-Anhalt	-0.119 (0.122)	-0.098 (0.123)	-0.124 (0.115)	-0.137 (0.108)	-0.134 (0.106)									
Schleswig-Holstein	0.093 (0.097)	0.092 (0.095)	0.077 (0.094)	0.043 (0.093)	0.048 (0.092)									
Thurungia	-0.021 (0.089)	-0.009 (0.091)	-0.005 (0.093)	0.009 (0.092)	-0.004 (0.096)									
Daycare attendance rate in district	0.024** (0.007)	0.023** (0.007)	0.023** (0.007)	0.018** (0.007)	0.019** (0.007)	0.013** (0.003)	0.012** (0.003)	0.012** (0.003)	0.012** (0.003)	0.010** (0.003)	0.010** (0.003)	0.010** (0.003)	0.010** (0.003)	0.010** (0.003)

Table A5 continued

Table A5 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Social origin												
Highest parental education (Ref.: ISCED 0–1: Max. primary)												
ISCED 2: Secondary I	-0.040 (0.052)	-0.040 (0.052)	-0.045 (0.052)	-0.046 (0.052)	0.036 (0.029)	0.031 (0.029)	0.036 (0.029)	0.021 (0.029)	0.02 (0.029)	0.022 (0.029)	0.022 (0.029)	0.018 (0.029)
ISCED 3-4: Secondary II + postsecondary	0.080 (0.049)	0.070 (0.048)	0.021 (0.049)	0.023 (0.050)	0.03 (0.026)	0.019 (0.026)	0.03 (0.026)	0.008 (0.026)	0.007 (0.026)	0.008 (0.026)	0.007 (0.026)	-0.002 (0.027)
ISCED 5-8: Any teriary	-0.009 (0.064)	-0.002 (0.063)	-0.053 (0.065)	-0.059 (0.065)	0.053+ (0.031)	0.035 (0.031)	0.053+ (0.031)	0.022 (0.031)	0.022 (0.031)	0.023 (0.031)	0.022 (0.031)	0.009 (0.031)
Highest family status in home country	0.000 (0.002)	-0.000 (0.002)	-0.000 (0.002)	0.000 (0.002)	0.001* (0.001)	0.001 (0.001)	0.001* (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
HISEI control: did not work in home country	0.118** (0.040)	0.097* (0.041)	0.039 (0.043)	0.043 (0.043)	0.042* (0.021)	0.043* (0.021)	0.042* (0.021)	0.034 (0.021)	0.035+ (0.021)	0.035+ (0.021)	0.033 (0.021)	0.034+ (0.021)
Books at home in country of origin					0.026** (0.007)							0.019** (0.007)
Working mother (Ref.: Mother does not work)		0.189+ (0.101)	0.076 (0.097)	0.077 (0.094)			-0.004 (0.056)	-0.008 (0.056)	-0.011 (0.056)	-0.008 (0.056)	-0.011 (0.056)	-0.016 (0.056)
Control: No information on mother		-0.087+ (0.047)	-0.112* (0.045)	-0.117** (0.045)								
Migrant-specific												
Mother's German language proficiency			0.037 (0.027)	0.036 (0.026)			0.023* (0.010)	0.023* (0.010)	0.023* (0.010)	0.023* (0.010)	0.024* (0.010)	0.023* (0.010)
Father/partner's German language proficiency			0.040 (0.027)	0.040 (0.027)			0.046** (0.011)	0.046** (0.011)	0.047** (0.011)	0.047** (0.011)	0.047** (0.011)	0.045** (0.011)

Table A5 continued

Table A5 continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Years since migration												0.069** (0.020)	0.067** (0.020)	0.068** (0.011)	0.069** (0.011)	0.068** (0.011)	0.067** (0.011)	0.067** (0.011)
Contact to Germans												0.013 (0.011)	0.012 (0.011)	0.006 (0.005)	0.006 (0.005)	0.006 (0.005)	0.005 (0.005)	0.006 (0.005)
Religiosity												-0.024 (0.029)	-0.025 (0.029)	-0.005 (0.012)	-0.005 (0.012)	-0.004 (0.013)	-0.005 (0.013)	-0.006 (0.013)
Daycare attendance in home country														0.042+ (0.023)	0.023* (0.010)	0.023* (0.010)	0.024* (0.010)	0.038+ (0.023)
Refugee specific																		
Legal status: insecure (*Ref.: Secure*)														0.138 (0.087)	-0.009 (0.031)	-0.009 (0.031)	-0.01 (0.031)	-0.009 (0.031)
Accommodation: collective (*Ref.: Private*)															0.017 (0.046)	0.011 (0.036)	0.006 (0.036)	0.006 (0.035)
Return orientation: Yes (*Ref.: No*)															-0.023 (0.049)	-0.023 (0.024)	-0.025 (0.024)	-0.024 (0.024)
PTSD risk																	0.024* (0.010)	0.023* (0.010)
Constant	0.775** (0.029)	0.316* (0.122)	-1.95** (0.640)	-1.90** (0.632)	-1.84** (0.625)	-1.40* (0.606)	-1.50* (0.614)	0.837** (0.009)	0.858** (0.081)	-0.255 (0.277)	-0.311 (0.276)	-0.334 (0.276)	-0.311 (0.276)	-0.241 (0.278)	-0.217 (0.279)	-0.253 (0.279)	-0.208 (0.280)	-0.214 (0.281)

Data: SOEP, n =2,005; ReGES, n = 2,183; multiple imputed data (m=100).
Notes. + p < 0.1 * p < 0.05 ** p < 0.01; unstandardized linear regression coefficients, robust standard errors in parentheses; SOEP results weighted.