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**Article**

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DIW Economic Bulletin

**Provided in Cooperation with:**

German Institute for Economic Research (DIW Berlin)

*Suggested Citation:* Gambaro, Ludovica (2017) : Children from migrant backgrounds: Who are their Kita peers?, DIW Economic Bulletin, ISSN 2192-7219, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin, Vol. 7, Iss. 51/52, pp. 559-566

This Version is available at:

<https://hdl.handle.net/10419/172954>

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# Children from migrant backgrounds: who are their Kita peers?

By Ludovica F. Gambaro

In Germany, attendance in early childhood education and care (ECEC) centers has soared in the last twenty years, making them a key context in which children learn. For children from migrant backgrounds who speak a foreign language at home, participation in ECEC has the potential of providing them with early German language exposure. One important but often overlooked factor in this respect is the composition of a child's peer group. Do children from migrant backgrounds attend ECEC centers where the majority of their peers are also from migrant backgrounds? This report offers the first systematic evidence for Germany of how children, and children from migrant backgrounds in particular, are distributed across ECEC centers, thus assessing the level of segregation. Using administrative data from 2007 to 2016, it shows that one-third of children who mainly speak a foreign language at home attend centers where the majority of their peers have a similar background. The report argues that peer group composition is a crucial aspect affecting the quality of children's experiences in ECEC. Luckily, it is also an aspect that can be influenced by careful policy design.

Over the last two decades, early childhood education and care (ECEC) centers have been awarded increasing priority and spending in Germany. The entitlement to a *Kindergarten* place for children aged three, which came into force in 1996, led to an increase in the number of places available for this age group. Similarly, the 2013 introduction of the right to a place upon a child's first birthday further drove expansion of services for children under three. As a result, 94 percent of children aged between three and the school entry age and 34 percent of children under the age of three were attending an ECEC center in 2016.<sup>1</sup>

The provision of ECEC makes it possible for parents—more specifically mothers—to work in the paid labor market, which is instrumental to the policy goal of achieving a higher labor market participation rate. At the same time, as children can profit from attending an ECEC center, these services can help reduce educational inequalities. In Germany, where the gap in educational attainment between students from migrant backgrounds and students born to German families is especially large,<sup>2</sup> there has been a growing interest in the potential of ECEC to support early German language acquisition and foster greater social cohesion.

Attending an ECEC center, however, does not automatically lead to success in school or integration: The quality of what takes place within the center is increasingly understood to be important.<sup>3</sup> The evidence so far is not

<sup>1</sup> Statistisches Bundesamt, "Betreuungsquoten der Kinder unter 6 Jahren in Kindertagesbetreuung am 01.03.2016" (2017) (in German; available online, accessed November 29, 2017; this applies to all other online sources in this report unless stated otherwise).

<sup>2</sup> Autorengruppe Bildungsberichterstattung, "Bildung in Deutschland 2016. Ein Indikatorengestützter Bericht mit einer Analyse zu Bildung und Migration" (Bielefeld: Bertelsmann Verlag, 2017) (in German); Petra Stanat and Gayle Christensen, "Where Immigrant Students Succeed – A Comparative Review of Performance and Engagement in PISA 2003" (Paris: OECD, 2006).

<sup>3</sup> See for example Yvonne Anders et al., "Home and preschool learning environments and their relations to the development of early numeracy skills," *Early Childhood Research Quarterly* 27, no. 2 (2012): 231–244.

## Box 1

**Data, definitions, and measures**

Data source: We use data from the *Kinder- und Jugendhilfestatistik*, in particular the series "Statistik der Kinder und tätigen Personen in Tageseinrichtungen (EVAS 22,541)," for the years from 2007 to 2016. This series is a return collected every March from all ECEC centers in Germany, including information on the center, the children enrolled, and those employed. It thus represents the entire ECEC population. For the analysis of concentration of children by migrant background, we exclude centers in East Germany and centers that have fewer than five children.

Definition of migrant background: We use an indicator based on whether German is the main language spoken at home (*deutsche Familiensprache*) or not (*nichtdeutsche Familiensprache*). An alternative indicator would have been based on whether at least one of the child's parents has a foreign background (*ein Elternteil des Kindes stammt aus einem ausländischen Herkunftsland, ist also zugewandert*). A definition based on language is more restrictive and includes approximately 63 percent of the children who are considered to be from a migrant background on the basis of having at least one parent with a foreign background.

reassuring. Researchers have shown that parents from migrant backgrounds tend to choose ECEC centers that are of slightly lesser quality, as measured by a variety of indicators.<sup>4</sup> The NUBBEK study on early childhood education and care reported that the pedagogical quality observed in classrooms with a higher proportion of children with a non-German background was significantly lower than in classrooms with fewer migrant children.<sup>5</sup> In another study, children's vocabulary was found to grow faster in classes with a lower proportion of children from migrant backgrounds than in classes with relatively higher proportions.<sup>6</sup> And, arguably, if children from migrant backgrounds attend highly segregated centers, integration is unlikely to materialize.

<sup>4</sup> Juliane Stahl, Pia Schober, and C. Katharina Spieß, "Parental Socio-Economic Status and Childcare Quality: Early Inequalities in Educational Opportunity?" (working paper, *Early Childhood Research Quarterly*).

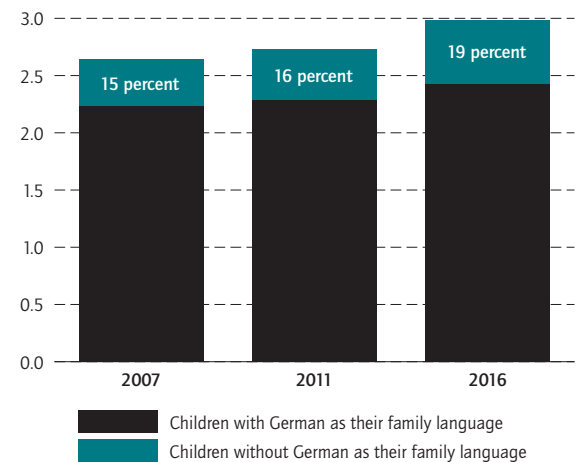
<sup>5</sup> Wolfgang Tietze et al., "NUBBEK. Nationale Untersuchung zur Bildung, Betreuung und Erziehung in der frühen Kindheit" (Weimar: Verlag das Netz, 2013); See also Susanne Kuger and Katharina Kluczniok, "Prozessqualität im Kindergarten - Konzept, Umsetzung und Befunde," *Zeitschrift für Erziehungswissenschaft*, Sonderheft no. 11 (2012): 159-178 (in German).

<sup>6</sup> Susanne Ebert et al., "Internal and external influences on vocabulary development in preschool children," *School Effectiveness and School Improvement* 24, no. 2 (2013): 138-154.

Figure 1

**Increase in the number of children attending an ECEC center in Germany**

Millions, children with or without German as their family language



Note: Data include children aged from zero to six.

Sources: RDC of the Federal Statistical Office and Statistical Offices of the Länder, *Statistik der Kinder und tätigen Personen in Tageseinrichtungen (EVAS 22541)*, survey years: 2007, 2011, 2016; authors' own calculations.

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In 2016, close to three million children were attending an ECEC center, of which 19 percent had another family language than German.

Yet we still know relatively little about the composition of children's peer groups in ECEC centers. Are most children from migrant backgrounds enrolled in centers where the majority of their peers are also from migrant backgrounds? Has the recent expansion of ECEC been accompanied by an increase or decrease in the levels of concentration of children from migrant backgrounds within centers? Is there a role for ECEC policy to influence the centers' composition? These are the questions that this report seeks to answer. By drawing on national administrative data spanning over ten years, this report is able to offer for the first time a comprehensive picture of how children are distributed in ECEC centers across Germany. It also reflects on why the composition of children's peer groups is important for their development and what future research should seek to uncover.

Before starting, however, it would be helpful to clarify how we define children from migrant backgrounds. For the purpose of this report, these are children who at home primarily speak and are exposed to a language other than German (Box 1). This definition is widely used and also particularly pertinent to this age group, as it identifies children who, on average, have a lesser ability to converse

in the language of instruction. This labelling has a pejorative connotation, as it implies a deficit, although we do not know how much and how well German is also spoken at home. These children could also be described as having German as an additional language.

### A stable concentration of children whose main language at home is not German

Our analysis is based on data from the Kinder- und Jugendhilfestatistik (Box 1). We use information from 2007 to 2016, covering all ECEC centers in Germany and including information on all children enrolled. Crucially for our purposes, the dataset reports whether or not each child speaks German as the main language at home. This information has been collected since 2006, thus limiting how far back in time this empirical exercise can go. Given that in East Germany the presence of children from migrant backgrounds—however defined—is extremely low, our analysis focuses on West Germany, including Berlin.<sup>7</sup> This means that our analysis does not apply to the whole of Germany, but nonetheless covers around three quarters of all children attending ECEC centers.

In 2007, approximately 2.6 million children were enrolled, 15 percent of whom did not speak German as the main language at home (Figure 1). By 2016, the number of children enrolled had increased to almost three million, with 19 percent of them not speaking German as the main language at home. Although we do not report it here, the data show that the expansion was driven by the opening of new centers rather than by increasing the capacity of existing ones so that the average size of centers remained constant (around 75 children per center).

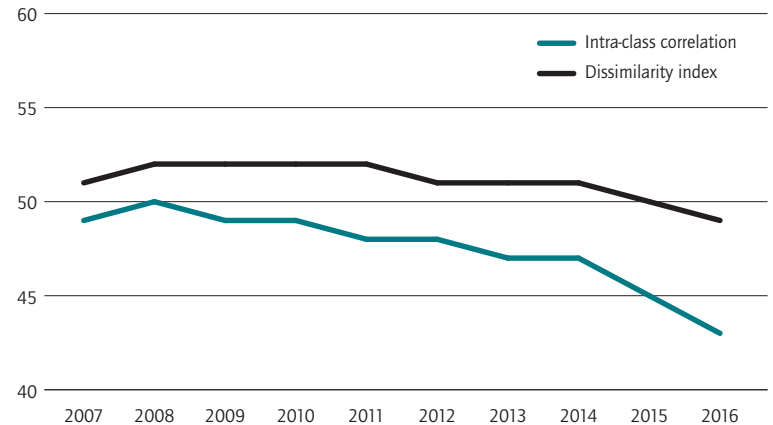
The index of dissimilarity, the most commonly used measure of segregation in social science, hovers around 50 percent throughout the period from 2007 to 2016 (Figure 2), indicating that approximately half of the children without German as their main language at home would need to change ECEC centers if we wanted to achieve an even distribution. A small decline from 51 to 49 percent is noticeable. To offer an alternative measure of clustering, we also calculate the intra-class correlation coefficient, which estimates dependence within centers. In practice, the measure captures to what extent children within one center are more similar to each other than children across settings. The intra-class correlation shows, as in the case of the dissimilarity index, little change between 2007 and 2016, albeit with a slight reduction in most recent years.

<sup>7</sup> In East Germany (excluding Berlin), the share of children who do not have German as their main language at home is less than four percent, compared to approximately 21 percent in the rest of Germany. Analyses of clustering and segregation require groups to be fairly large, making analyses of clustering by migrant background in East Germany not viable.

Figure 2

### Concentration of children with a foreign family language in German ECEC centers

Percent, as measured by two indexes



Note: Data include children aged from zero to six attending ECEC centres in Western Germany and Berlin. ECEC centers with fewer than five children enrolled are excluded.

Sources: RDC of the Federal Statistical Office and Statistical Offices of the Länder, Statistik der Kinder und tätigen Personen in Tageseinrichtungen (EVAS 22541), survey years: 2007–2016; authors' own calculations.

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The concentration of children with a family language other than German in ECEC centers has declined slightly in recent years.

The expansion of ECEC places since 2007 has mainly affected children under three. We therefore checked whether patterns differ depending on the children's age, but the results show that they do not.

As centers are fairly large, a child's peer group at each point in time is likely to be better reflected by the group or class a child is in.<sup>8</sup> However, most centers do not group children according to age. Thus, a child's peer group changes from one year to the next as older children leave for school and new, younger peers enter.<sup>9</sup> While the data do not allow any longitudinal analysis, this means that a center's overall intake for one year contributes to a child's peer group composition over the years of attendance.

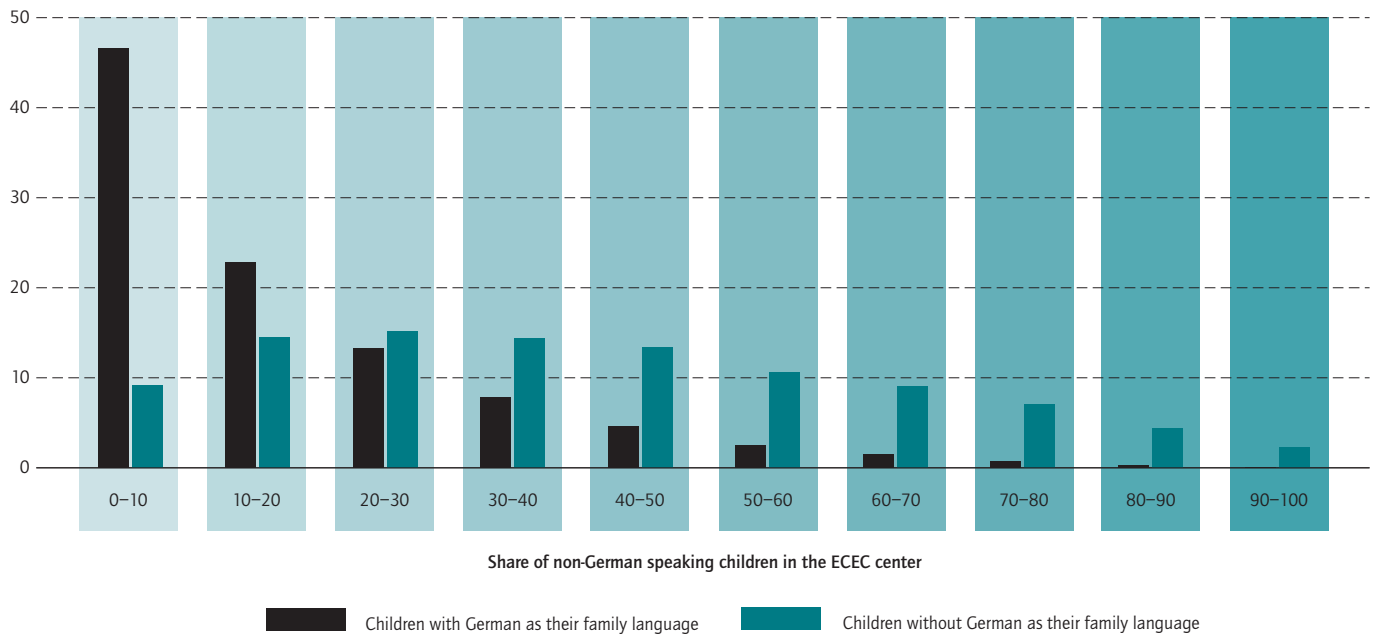
<sup>8</sup> Not all centers operate this way: approximately 15 percent of centers have an open group policy, whereby children are not assigned to a specific group.

<sup>9</sup> A recent study of how quality in ECEC varied over a period of three years found that group composition was the factor most likely to change, with repercussion on the pedagogical quality observed. Susanne Kuger et al., "Stability and patterns of classroom quality in German early childhood education and care," *School Effectiveness and School Improvement* 27, no. 3 (2016): 418–440.

Figure 3

**Percentage of peers whose family language is not German in 2016**

In percent, for children with and without German as their family language



Note: Data include children aged from zero to six attending ECEC centers in Western Germany and Berlin. ECEC centers with fewer than five children enrolled are excluded.

Sources: RDC of the Federal Statistical Office and Statistical Offices of the Länder, *Statistik der Kinder und tätigen Personen in Tageseinrichtungen (EVAS 22541)*, survey year: 2016; authors' own calculations.

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Children for whom German is not the family language are much more likely than native speakers to have peers whose family language is also a foreign language.

### One third of children who do not speak German at home primarily have peers who also do not speak German at home

The index of dissimilarity and the intra-class correlation suggest that the overall level of concentration of children from migrant backgrounds in ECEC centers is fairly high and has been stable for a long time. A more concrete way to see what it implies for children is to break down the proportion of peers without German as their main language at home in bands of ten percentage points (Figure 3).

For each individual child, we calculate the percentage of peers in the center she attends who mainly speak another language at home, excluding the individual child herself. We do so separately for children with German and non-German language backgrounds. In 2016, most of the children speaking predominantly German at home (over 80 percent) attended centers where less than 30 percent

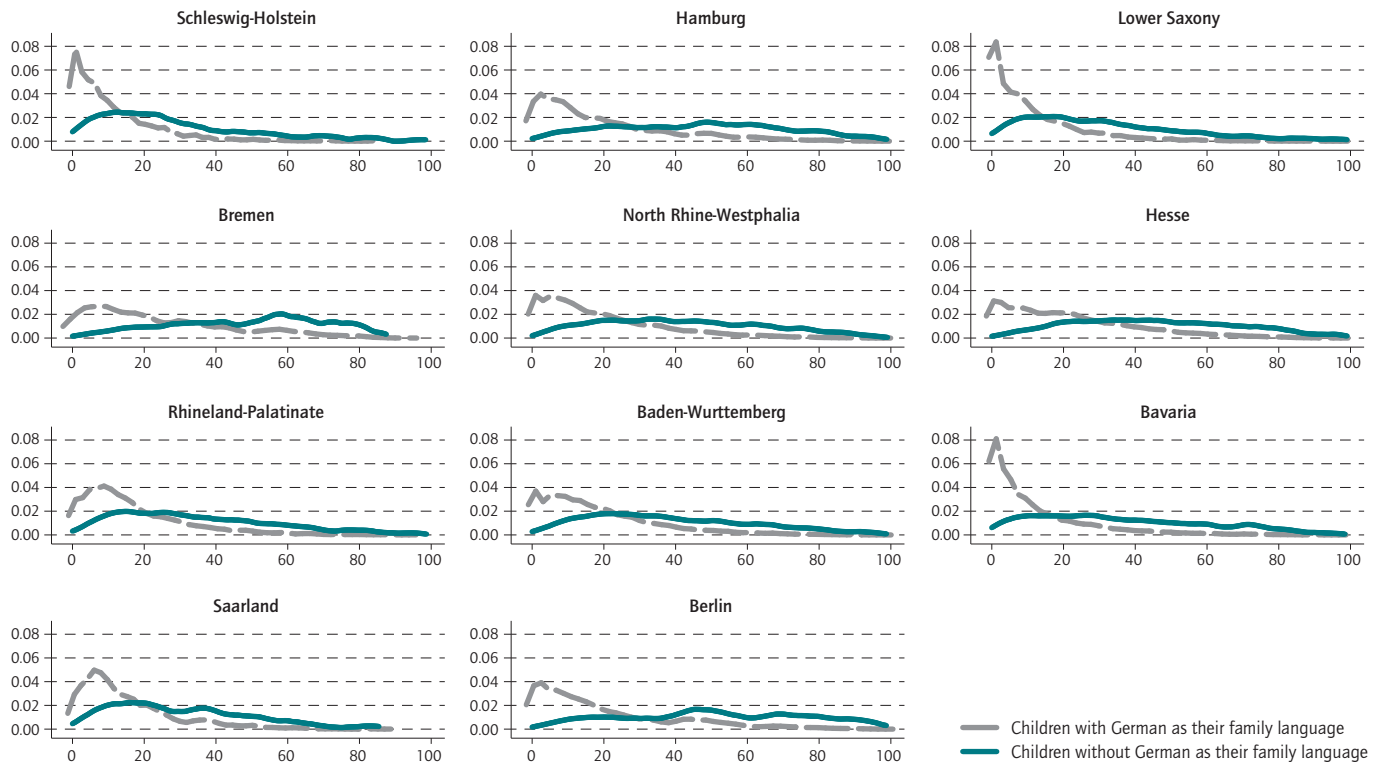
of their peers spoke mainly another language at home. By contrast, one-third of the children for whom German is not the main language at home were in centers where the majority of their peers (50 percent and above) were also from families who did not use German as their main language. Only a minority of children from non-German-speaking families experienced a concentration of similar peers below 20 percent.

Such contrasting patterns of peer group composition emerge in all federal states, although the differences between the two groups—children from a German and those from a non-German background—is least pronounced in Baden-Württemberg and North Rhine-Westphalia (Figure 4). In these two states, the overall higher presence of children predominantly speaking another language at home makes it more likely for children from mainly German-speaking families to be in ECEC centers where 20 to 40 percent children of the children in their peer group did not speak mainly German at home.

Figure 4

**Concentration of peers with family language other than German across federal states**

Kernel density, for children with and without German as their family language



Note: Data include children aged from zero to six. ECEC centres with fewer than five children enrolled are excluded.

Sources: RDC of the Federal Statistical Office and Statistical Offices of the Länder, Statistik der Kinder und tätigen Personen in Tageseinrichtungen (EVAS 22541), survey year: 2016; authors' own calculations.

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The difference between children with German as a family language and those with another language is the narrowest in Baden-Württemberg and North Rhine Westphalia, as far as the concentration of their peers is concerned.

**Children's peer group composition: does it matter?**

So far we have established that there is a fairly high level of concentration of children from non-German language backgrounds in ECEC centers, that is children from migrant backgrounds—as defined by language—tend to attend centers which cater to far higher proportions of children from migrant backgrounds than children with German as their main home language. We now turn to the question of whether the level of reported concentration matters. To answer, we draw on previous research with the aim of highlighting the gaps in the current evidence and new directions needed to advance our knowledge.

As attendance rates have increased, ECEC has become a key context in which young children begin to develop social skills, establish social relationships, and learn to interact with each other. Besides being an explicit policy goal,<sup>10</sup> promoting social competencies is a fundamental pedagogical objective of most early childhood centers, which results in a strong emphasis on providing children with ample opportunities for peer-to-peer interactions.

<sup>10</sup> The relevant law, the Child and Youth Services Act (*Kinder- und Jugendhilfegesetz*, KJHG), states (§ 22): "Day care facilities for children and childminders should foster children's development in such a way that they grow to be independent and socially competent."

It is therefore possible that there are direct effects from peer groups on individual trajectories as children learn from and imitate each other. Previous analyses of German data suggest that these direct effects may exist. Children from families who did not mainly speak German at home were found, unsurprisingly, to have lower vocabulary achievement around age three and also slower vocabulary growth during the preschool years compared to monolingual German children. Crucially for the purpose of this report, all children, irrespective of their own language background status, made less progress in language development when they were in groups with higher proportions of children with a foreign-language background.<sup>11</sup>

In addition to the effects of direct peer interactions, the composition of a group may exert indirect effects on children's experience by influencing the nature of interactions between adults and children. Studies carrying out assessments of the teaching and learning interactions in German ECEC centers found a negative association between the proportion of children with non-German backgrounds and the quality of teaching and learning interactions, assessed through observational scales. In particular, the NUBBEK study defined groups with a "high proportion" of children from migrant backgrounds as those with a concentration of above 67 percent and found that pedagogical quality in such groups was lower than in those with a lower concentration.<sup>12</sup>

These findings raise questions about the optimal mix of peers. Most studies estimating peer effects are not able to comment on this because they lack sample size, but peer effect research in schools has uncovered "tipping points". Only two studies, both from the U.S., move early education research in this direction. However, they use low income instead of migrant background as a marker of disadvantage. In Boston, levels of concentration of low-income children above the district mean of 32 percent appeared to have a negative effect on children's language development. Similarly, another study showed that the negative association between language achievement and low-income peers' composition emerged once the threshold of 25 percent was reached.<sup>13</sup>

But such non-linearities could operate differently in other national contexts or in relation to other outcomes.

<sup>11</sup> Ebert et al., "Internal and external influences on vocabulary development in preschool children," 138–154.

<sup>12</sup> Christina Weiland and Hirokazu Yoshikawa, "Does higher peer socio-economic status predict children's language and executive function skills gains in prekindergarten?" *Journal of Applied Developmental Psychology* 35, no. 5 (2014): 422–432.

<sup>13</sup> Portia Miller et al., "Pre-K classroom-economic composition and children's early academic development," *Journal of Educational Psychology* 109, no. 2 (2017): 149–165.

For example, a certain density of children from migrant backgrounds, say 30 percent, may comprise a critical mass that triggers more appropriate language support or greater parental involvement. On this latter point, there is evidence from Germany that parents were more satisfied with their involvement in the ECEC center when the center was attended by a higher proportion of families with foreign-language backgrounds.<sup>14</sup> Future research should seek to discover what levels of concentration are more or less beneficial to children's learning and well-being.

### ECEC policy can influence the composition of children's peer group

On the face of it, the level of concentration of children from migrant backgrounds in each ECEC center appears to be a reflection of residential segregation. Housing and neighborhood policies, one could argue, are better suited than interventions in early childhood services to alter the composition of centers. However, research on segregation in primary schools in Germany suggests that while residential segregation is the main factor underlying school segregation, it is by far not the only one. The precise design of admission policies contributes to the composition of primary schools.<sup>15</sup>

What are the forces for mixing and segregation in the case of ECEC? First of all, supply is organized in a high number of small centers, and this feature favors high segregation. For example, for every primary school there were approximately 3.6 ECEC centers in 2016. Second, parents can choose ECEC centers. They are not bound to any catchment area, although proximity is an important selection criterion. A recent survey found that 91 percent of parents reported having a choice in their selection of centers.<sup>16</sup> Third, centers vary in their pedagogical approach. Even within individual federal states, curricula provide guidance principles only. Parents may therefore choose a center that is convenient for them and best matches their education and care expectations. This is indeed what previous research has shown.<sup>17</sup>

<sup>14</sup> Axinja Hachfeld et al., "Triggering parental involvement for parents of different language backgrounds: the role of types of partnership activities and preschool characteristics," *Early Child Development and Care* 186, no. 1 (2016): 190–211.

<sup>15</sup> Gunilla Fincke and Simon Lange, Segregation an Grundschulen: Der Einfluss der elterlichen Schulwahl, Policy brief, Sachverständigenrat deutscher Stiftungen für Integration und Migration (2012) (in German; available online); Andrea Riedel et al., "School choice in German primary schools. How binding are school districts?" *Journal for Educational Research Online* 2, no. 1 (2012): 94–120.

<sup>16</sup> Stahl, Schober, and Spieß, op. cit.

<sup>17</sup> Pia S. Schober, C. Katharina Spieß, and Juliane F. Stahl, *Gute Gründe für gute Kitas!* (Berlin: Friedrich-Ebert-Stiftung, 2016) (available online in German).

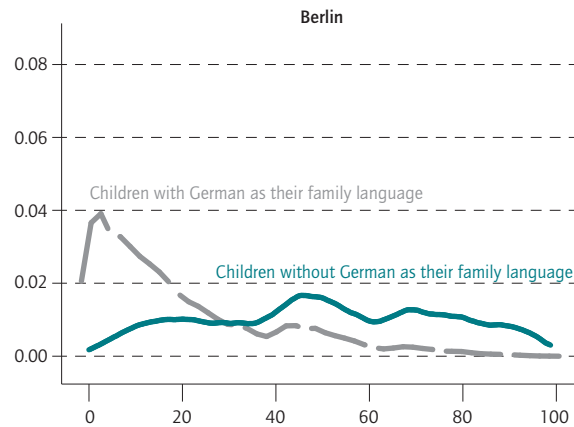
While this diversity lends itself to selection and clustering by parents, other factors seem to potentially promote consistency and uniformity, feasibly discouraging sorting and segregation. Although the actual framework is determined at regional state and municipal levels, the ECEC system in Germany is universal and almost exclusively publicly subsidized. Staff educational qualification, wages, and staff-to-children ratios are all subject to minimum requirements. These are markedly different across federal states but rather uniform at the lowest administrative level. Basic fees, which are mostly income-related, are often regulated at state or municipal level, minimizing differences between centers in the same neighborhood.<sup>18</sup> However, individual centers can charge for additional activities, thus creating a more diversified offer than it would appear from the formal regulatory framework alone.

While fees may be relatively uniform from the parents' perspective, from the perspective of providers there may be important differences between children. For example, in some states and municipalities, ECEC centers receive additional funding when they cater to children whose main home language is not German. The exact design of the funding scheme likely influences the overall composition of the children attending a center. In particular, the funding premium can be linked to the individual child so that a center receives more money when it caters to a child from a migrant background than to one from a German family. Bavaria, for example, operates such a scheme.<sup>19</sup> Alternatively, additional financial resources can be channeled to ECEC centers with high levels of concentration of children from migrant backgrounds. This is the case in Berlin<sup>20</sup> and Hamburg<sup>21</sup>, for example. We looked at the case of Berlin more closely, as the city has the highest percentage of children from a non-German language background. In Berlin, additional funding is available for ECEC centers that have a share of children whose main language at home is not German above 40 percent. As a result, children both from and not from migrant backgrounds are more likely to have a share of peers from mainly non-German speaking families, which was closer to just above the 40-per-

Figure 5

### Concentration of peers with family language other than German in Berlin

Kernel density, for children with and without German as their family language



Note: Data include children aged from zero to six. ECEC centres with fewer than five children enrolled are excluded.

Sources: RDC of the Federal Statistical Office and Statistical Offices of the Länder, Statistik der Kinder und tätigen Personen in Tageseinrichtungen (EVAS 22541), survey year: 2016; authors' own calculations.

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In ECEC centers in Berlin, the share of children slightly speaking a foreign language at home is more likely to be above than slightly below 40 percent.

cent threshold than just below (Figure 5). Thus, financial incentives can help influence ECEC centers' composition, albeit only marginally.

## Conclusion

In 2016, almost one-fifth of the children attending an ECEC center in Germany came from a migrant background, defined as belonging to a family in which German is not the main language spoken at home. Up until now, little was known about the composition of the peers they interact with in their daily experiences in ECEC centers. The results presented here show that even in the context of a universal, fairly uniform ECEC system at a neighborhood level, there is a stark contrast between the peer group composition experienced by children from migrant backgrounds and by German children. Especially noteworthy is the result that, in contrast to children for whom German is the main home language, up to one-third of children who do not speak German as the main language at home are in centers where the majority of their peers also have a foreign-language background. This points to the risk of a "parallel educational track" from the very beginning.

<sup>18</sup> Sophia Schmitz, C. Katharina Spieß, and Juliane F. Stahl, "Day Care Centers: Family Expenditures Increased Significantly at Some Points between 1996 and 2015," *DIW Economic Bulletin*, no. 42 (2017) (available online).

<sup>19</sup> Bavarian Law on Educating, Raising and Providing Care for Children in Nurseries, other Childcare Facilities and Day Care Centers (*Bayerisches Kinderbildungs- und -betreuungsgesetz, BayKiBiG*), § 21 para. 5 (2005): 2.

<sup>20</sup> Statutory Order about the Proceedings to Ensure a Need-Based Offer of Places in Day Care Facilities and Family Day Care and for Staffing in Day Care Facilities (*Kindertagesförderungsverordnung, VOKitaFöG*), § 17 (2017).

<sup>21</sup> Hans-Georg Weigel et al., *Evaluation des Programms Kita-Plus der Freien Hansestadt Hamburg* (Frankfurt am Main: Institut für Sozialarbeit und Sozialpädagogik e.V., 2014) (in German).



Research into peer effects in ECEC is still in its early stages, but has the potential to understand what an “optimal peer mix” might look like. Without such knowledge, policymakers are best advised not to favor a par-

ticular concentration level but instead to design funding schemes that encourage individual centers to reach out to children from migrant backgrounds.

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This research was funded by an EU Marie Skłodowska Curie Action (H2020-MSCA-IF-2015 Project 705353)

**JEL:** J15, J13, I24, H75

**Keywords:** Early education and care, peer composition, segregation, migrant background



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