

Levelling the playing field in ECEC: Results from TALIS Starting Strong 2018

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Abstract

Drawing on data from TALIS Starting Strong 2018, this paper explores diversity, equity and inclusion in early childhood education and care (ECEC). It examines how four dimensions of diversity (e.g., socio-economic disadvantage, special education needs, different first language, and refugee status) as well as their accumulation apply to the populations of children attending ECEC centres in the nine countries participating in the survey. Further, it analyses variation in indicators of quality of ECEC between more and less diverse ECEC centres, looking at both structural quality factors (e.g., overall resources; staff composition, experience, and working conditions) and attitudes and practices in ECEC centres (e.g., staff sense of self-efficacy and practices with children; interactions with families and other services). Results shed new light on the extent to which the quality of ECEC varies for different groups of children and the capacity of ECEC systems to respond to the diversity of children's needs.

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1. Introduction

The provision of high-quality early childhood education and care (ECEC) is increasingly seen as a strategy to level the playing field in social and economic life due to its potential to give all children, and especially those from disadvantaged backgrounds, a strong basis for early development and well-being (OECD, 2018^[1]). Findings from the OECD International Early Learning and Well-being Study (IELS) suggest that 5-year-olds from socio-economically disadvantaged homes in England (United Kingdom), Estonia and the United States face an average learning gap of about 12 months in early literacy and numeracy compared to advantaged peers, and that attending ECEC is linked to stronger cognitive development for these disadvantaged children (OECD, 2022^[2]). Participation in ECEC can also be beneficial to children by facilitating parental employment and boosting family income, thus helping to break intergenerational cycles of poverty (OECD, 2020^[3]; 2020^[4]).

As access to ECEC has expanded and the profile of enrolled children has diversified in recent years across OECD countries, policy makers have been shifting their focus to the quality of ECEC services as well as to strategies to enhance equity and inclusion. Such developments are informed by growing evidence that high-quality ECEC can be particularly beneficial for children from vulnerable and minority backgrounds (Arnold and Doctoroff, 2003^[5]; Gambaro, Stewart and Waldfogel, 2014^[6]; Heckman, 2006^[7]; OECD, 2019^[8]) provided that ECEC settings enable interactions that enrich the learning and developmental experiences of home environments, for instance by offering resources unavailable to children living in deprivation, or by giving children from immigrant backgrounds greater opportunities to learn the local language and culture.

However, a recurrent finding in the research literature is that children from vulnerable or minority backgrounds tend to be exposed to lower-quality ECEC than children from more advantaged backgrounds. For instance, studies have found that groups with a larger percentage of immigrant or bilingual children often experience lower quality interactions with ECEC staff (Kuger et al., 2016^[9]; Leu and Schelle, 2009^[10]; LoCasale-Crouch et al., 2007^[11]; OECD, 2018^[1]; Slot et al., 2017^[12]; Slot, Lerkkanen and Leseman, 2015^[13]; Tonyan and Howes, 2003^[14]) and that process quality (i.e., the quality of children's interactions with others) is lower in ECEC settings located in economically disadvantaged neighbourhoods (Burchinal et al., 2008^[15]; Drange and Telle, 2020^[16]; Hatfield et al., 2015^[17]; McCoy et al., 2015^[18]; Vandenberg et al., 2008^[19]).

This is not simply a matter of missed opportunities and inefficiencies; poor-quality ECEC may also be detrimental to children's social and emotional development and overall well-being at an age when they are highly vulnerable (Britto, Yokishawa and Boller, 2011^[20]; Howes et al., 2008^[21]; OECD, 2019^[8]). Moreover, when their needs are not fully recognised and accounted for, children may not reap the benefits of ECEC programmes.

As education systems across the OECD and beyond look to build the foundations for stronger, fairer, and more prosperous societies, improving access to high-quality ECEC *for all* becomes increasingly important. Results from the OECD Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) (see Box 1) can provide relevant insights to assist policymakers in their efforts to strengthen equity and inclusion in ECEC.

This working paper consolidates and expands analyses undertaken on the themes of diversity, equity and inclusion as part of previous reporting on TALIS Starting Strong 2018 (OECD, 2020^[3]; OECD, 2019^[8]). Chapters in the first and second volumes of results from the survey applied an equity lens to their core topics, and equity-related indicators were included in the data overviews of both volumes. Specific policy pointers for promoting equity in ECEC were also derived from the findings presented in the reports. These pointers

are extended by further insights emerging from the analyses presented in this paper. These policy insights are also discussed in a companion policy brief.

Box 1. What is TALIS Starting Strong?

The OECD Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) is the first large-scale international survey that focuses on the ECEC workforce. Questionnaires administered to staff and leaders collect data on their characteristics, practices at work and views on the ECEC sector, with an emphasis on those aspects that promote conditions for children's learning, development and well-being, including both factors proximal to these processes (process quality) and more distal factors (structural quality characteristics). In addition to a cross-cutting focus on equity and diversity, the survey questionnaires cover the following areas:

- background and initial preparation of staff and leaders;
- professional development for staff and leaders;
- staff and leader well-being;
- professional beliefs about children's learning, development and well-being;
- staff self-efficacy;
- structural quality (i.e., available physical, human, and material resources);
- process quality (i.e., the quality of interactions between staff and children and staff and parents/guardians, as well as among children);
- monitoring of children's learning, development and well-being;
- pedagogical and administrative leadership;
- working environment;
- stakeholder relations.

Nine countries participated in TALIS Starting Strong 2018: Chile, Denmark, Germany, Iceland, Israel, Japan, Korea, Norway and Republic of Türkiye. All these countries collected data from staff and leaders in pre-primary education (ISCED level 02) settings. In addition, four of the nine countries (Denmark, Germany, Israel and Norway) collected data from staff and leaders in settings serving children under age 3. For each level of ECEC in which these countries participated, the study aimed to survey a representative sample ECEC staff and centre leaders. The international sampling plan for TALIS Starting Strong 2018 used a two-stage probability sampling design: staff were randomly selected from the list of in-scope staff in each of the randomly selected ECEC settings. The leader of each setting (i.e., the person with the most responsibility for administrative, managerial and/or pedagogical leadership) was automatically selected for participation as well. Denmark did not meet the technical standards on response rates; its results are therefore not shown in figures presenting international comparisons but are discussed in the text and included, alongside full results for other countries, in the supporting tables (see Annex A).

Materials from the 2018 TALIS Starting Strong Survey, including the analytical and technical reports, database, questionnaires and user guide are available on [this website](#).

Source: OECD (2019^[22]), *TALIS Starting Strong Survey 2018 Technical Report*, OECD Publishing, Paris, <https://www.oecd.org/education/talis/TALIS-Starting-Strong-2018-Technical-Report.pdf> (accessed on October 13 2023) and Sim et al. (2019^[23]), “Starting Strong Teaching and Learning International Survey 2018 Conceptual Framework”, *OECD Education Working Papers*, No. 197, <http://dx.doi.org/10.1787/106b1c42-en>.

Besides bringing together previous findings, this paper presents new results from TALIS Starting Strong 2018 to inform discussions on diversity, equity and inclusion in ECEC by:

- Providing a more nuanced picture of the diversity of children’s populations in ECEC centres. Besides discussing the prevalence of ECEC centres with high shares of children from diverse backgrounds across countries, this involves looking at the relative concentration of diverse children in ECEC centres within countries, as well as examining the prevalence of ECEC centres where multiple dimensions of diversity accumulate and the most frequent combinations of dimensions of diversity.
- Examining associations between indicators of structural and process quality and the diversity of children’s populations in ECEC centres, by looking at how these indicators vary between more and less diverse centres on different dimensions of diversity, and between centres where none, one, or multiple dimensions apply to the populations of children in the centres.

The paper is structured as follows: Section 2 discusses the potential of TALIS Starting Strong to address questions on diversity, equity and inclusion, outlining the paper’s analytical framework. Section 3 examines the profile and distribution of diverse populations of children across ECEC centres, as well as according to centres’ type of management and location. Section 4 discusses the extent to which key structural conditions of ECEC centres, including workforce composition and the working environment, vary according to the diversity of children that they serve. Section 5 looks at the practices and interactions that take place in ECEC centres, as well as at staff’s beliefs, and at how they respond to the diversity of children. Finally, Section 6 offers some policy considerations.

2. Diversity, equity and inclusion in TALIS Starting Strong

Social disparities into and within ECEC remain a reality in OECD and partner countries, with children from diverse backgrounds being less likely to attend high-quality ECEC even though they stand to gain the most from it. It is therefore of high policy relevance to identify the extent to which these children find themselves concentrated in the same ECEC centres across countries, and whether centres attended by vulnerable children have the same capacity to provide rich environments for early learning and development as the centres serving more advantaged children (Sim et al., 2019^[22]).

2.1. How are diversity, equity and inclusion addressed in TALIS Starting Strong 2018?

This working paper builds on the concepts of diversity, equity and inclusion (see Box 2) to explore whether the ECEC systems of the countries that took part in TALIS Starting Strong 2018 provide high-quality learning, development and well-being opportunities for all children.

Box 2. Definitions of diversity, equity and inclusion used in this paper

Diversity

Diversity corresponds to people's differences as perceived by themselves and/or by others, which may relate to their race, ethnicity, gender, sexual orientation, language, culture, religion, mental and physical ability, socio-economic and immigration status. Diversity is multidimensional and might relate to individuals' physical characteristics or behaviour, and/or to social and cultural practices.

In TALIS Starting Strong, diversity refers to the presence, in ECEC centres, of children from socio-economically disadvantaged homes, of children with special education needs, of children whose first language is different from the language(s) used in their ECEC centre, and of children who are refugees. Importantly, there is no a priori assumption about whether a diverse background represents an advantage or disadvantage for children: diversity may in some cases be associated with a relative lack of resources, but in others it may be seen as an asset that can lead to greater personal resilience, more knowledge of and openness to other cultures, or richer interactions with peers or staff.

Equity

Equitable education systems ensure that the achievement of educational potential is the result of effort and will rather than of personal and social circumstances over which individuals have no control, including factors such as gender, ethnic origin, immigrant status, socio-economic background, special education needs or giftedness. This assumes that the role of education systems in achieving equity is to provide equality of opportunities for achieving one's potential.

In TALIS Starting Strong, equity refers to the extent to which the quality of ECEC is associated to the composition of children in ECEC centres on different dimensions of diversity, namely socio-economic background, special education needs, languages spoken at home, and refugee status.

Inclusion

Inclusive education can be broadly defined as “an on-going process aimed at offering quality education for all while respecting diversity and the different needs and abilities, characteristics and learning expectations of the students and communities, eliminating all forms of discrimination” (UNESCO, 2009, p. 126_[23]). It refers to the need for education systems to adapt to all children and in particular to policies and practices that explicitly acknowledge children's diversity.

In TALIS Starting Strong, inclusion is explored specifically through staff's attitudes towards diversity and the practices they use to adapt to and recognise children's diverse needs.

Source: OECD (2019_[22]), *TALIS Starting Strong Survey 2018 Technical Report*, OECD Publishing, Paris, <https://www.oecd.org/education/talis/TALIS-Starting-Strong-2018-Technical-Report.pdf> (accessed on October 13 2023) and Sim et al. (2019_[23]), “Starting Strong Teaching and Learning International Survey 2018 Conceptual Framework”, *OECD Education Working Papers*, No. 197, <http://dx.doi.org/10.1787/106b1c42-en>.

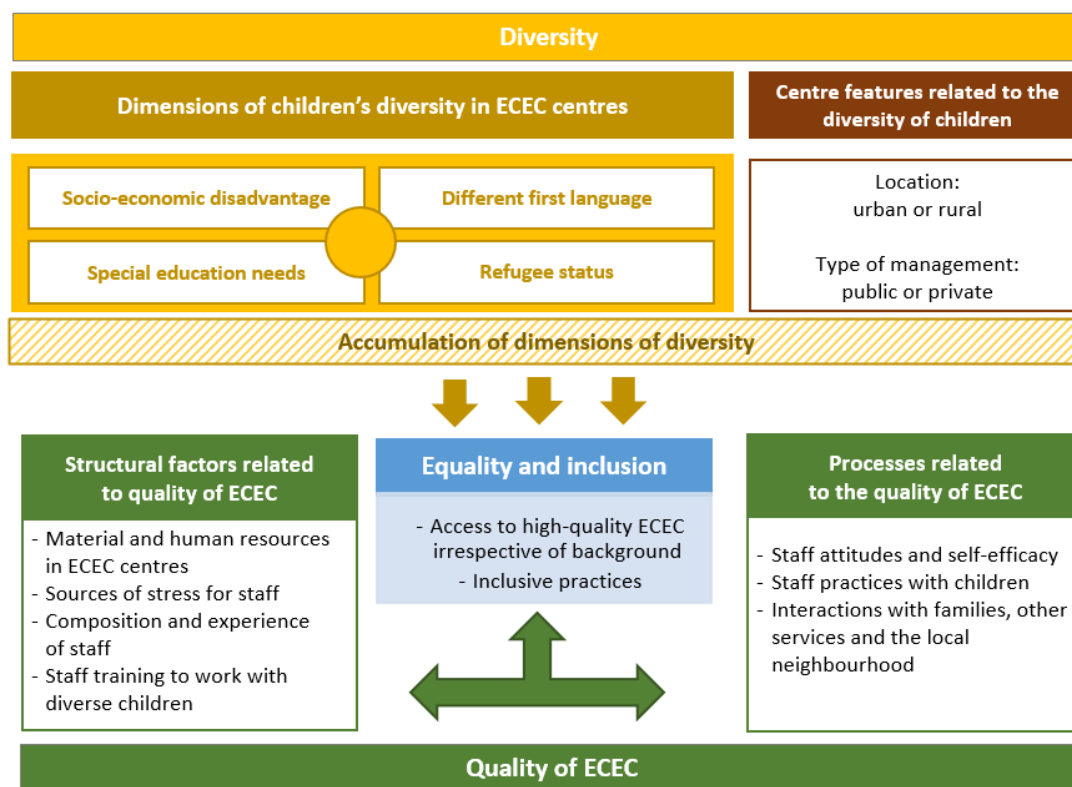
The framework and the key indicators from TALIS Starting Strong 2018 used in the paper to analyse the relationships between diversity, equity and inclusion in ECEC are presented in Figure 1. First, by gathering information on the characteristics of children attending ECEC, the survey enables an examination of the prevalence and distribution of children from diverse backgrounds across ECEC centres (Section 4). In what follows, the paper uses the term “diverse children” to refer to children from diverse background. This concerns four distinct dimensions of diversity which may apply to the children attending ECEC centres. The survey defined these dimensions as follows:

- **Socio-economic disadvantage:** children from socio-economically disadvantaged homes lacking some basic necessities or advantages of life, such as adequate housing, nutrition or medical care.
- **Special education needs:** children for whom a special learning need has been formally identified because they are cognitively, physically or emotionally disadvantaged¹.
- **Different first language:** children whose first language (i.e., the language spoken in their family environment) is different from the language(s) used in the ECEC centre they attend.
- **Refugee status:** children who, regardless of legal status, have fled to another country to seek refuge from war, political oppression, persecution, or a natural disaster, or who were born while their parents were travelling to the destination or shortly after the parents’ arrival.

Second, by linking these dimensions of diversity to information collected on ECEC settings’ features and structural conditions, the survey offers possibilities to analyse the extent to which children in more and less diverse ECEC centres have equal opportunities in relation to a range of material and human resources, including the number and preparedness of staff or the quality of their working environments (Section 4). Third, the survey can be used to examine how the responses of ECEC staff and centre leaders to the diversity of children’s populations vary between centres with different shares of diverse children, by drawing on information on staff’s attitudes to diversity and pedagogical practices with children, and on centre-level practices for engaging with families and cooperating with other child, family or social services (Section 5).

¹ “Special education needs” is a term used in many education systems to characterise the broad array of needs of students who are affected by disabilities or disorders that affect their learning and development. There is no universal consensus on which disorders and impairments can cause a special education need, and countries adopt varying classifications. Recent OECD work groups special education needs into three broad categories: learning disabilities, physical impairments and mental disorders (OECD, 2023_[28]).

Figure 1. A framework for analysing diversity, equity and inclusion with TALIS Starting Strong



2.2. Classifying ECEC centres according to dimensions and levels of diversity

TALIS Starting Strong 2018 asked ECEC centre leaders to estimate the percentage of children (“None”; “1% to 10%”; “11% to 30%”; “31% to 60%”; or “More than 60%”) enrolled in their ECEC centre to whom each of the four dimensions of diversity outlined above applies. Unless otherwise specified and following the same procedure as in previous reporting, this paper uses the term “a high share” as shorthand to refer to a share of “11% or more” (i.e., “11% to 30%” or “31% to 60%” or “More than 60%”) of children within an ECEC centre to whom a given dimension of diversity applies.² This enables comparisons of the prevalence of ECEC centres with high shares of diverse children across countries (Table A.5).

In addition, these ECEC centres can be distinguished according to the relative level of concentration of diverse children within them: centres with a “modest” level of concentration are those where “11% to 30%” of the children have a given background, centres with a “high” level of concentration are those where this applies to “31% to 60%” of the children, and centres with a “very high” level of concentration are those where “more than 60%” of the children in the centre share a diverse background.

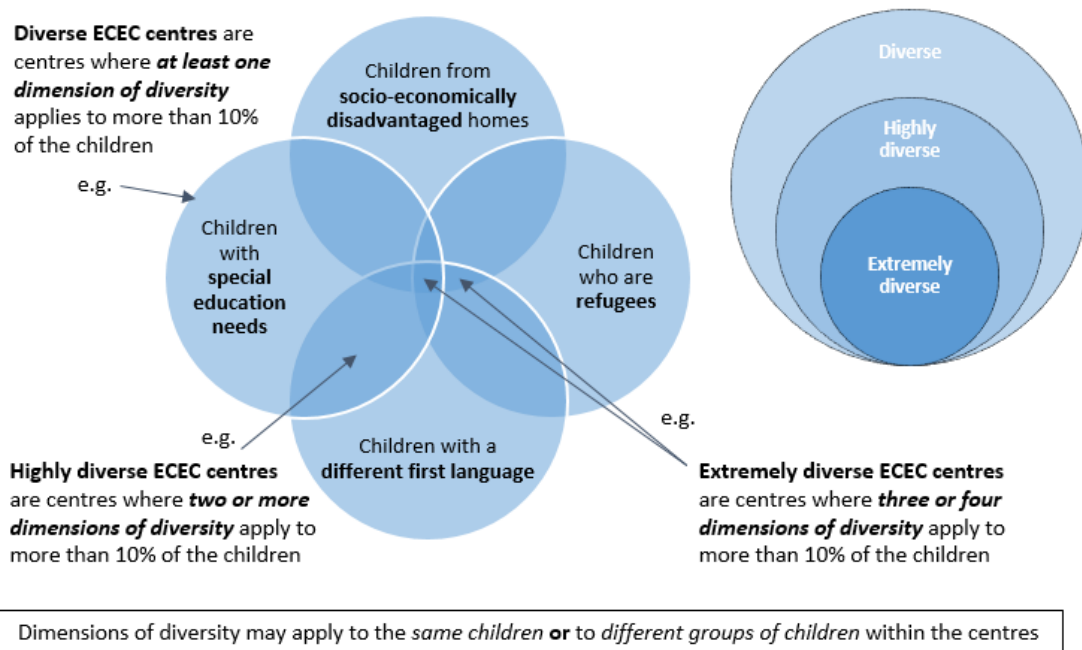
² A higher threshold regarding the share of diverse children (i.e., “30% or more” within the centre) was considered in exploratory analyses for this paper. However, the use of this higher threshold did not yield sufficiently reliable estimates for most participating countries. Therefore, results of these analyses are not reported. However, the within-country distribution of centres according to this criterion is available in the supporting tables (see Table A.6).

Further, the paper distinguishes three categories of diverse ECEC centres according to the number of dimensions of diversity found in their children's populations: a) "diverse" ECEC centres where *one or more* of the dimensions of diversity applies to more than 10% of the children in the centre; b) "highly diverse" centres where *two or more* dimensions of diversity apply to more than 10% of children; and c) "extremely diverse" centres where *three or four* dimensions of diversity apply to more than 10% of children. By contrast, ECEC centres where a given dimension of diversity applies to *less* than 11% of the children in the centre are considered "non-diverse" with respect to that particular dimension. In this categorisation, "extremely diverse" centres are therefore a subset of "highly diverse" centres, which in turn are a subset of the larger category of "diverse" centres (Figure 2).

These classifications of ECEC centres are useful for analytical purposes as they enable multiple comparisons between centres according to the prevalence of specific dimensions of diversity. For instance, comparisons between "diverse" and "non-diverse" centres serve to analyse the potential association between a particular dimension of children's diversity (e.g., different first language) and different indicators of structural or process quality in ECEC. In addition, they allow to explore associations between quality indicators and the accumulation of dimensions of diversity in ECEC centres, i.e., between centres where one vs. two vs. three or four dimensions apply to more than 10% of the children. Both types of analyses are relevant for addressing questions about diversity, equity and inclusion in ECEC.

However, it is important to note that information on children's backgrounds was collected from ECEC centre leaders, and with reference to the share of children within centres, rather than at the (child) individual level. Therefore, TALIS Starting Strong cannot answer the question of whether the accumulation of dimensions of diversity within an ECEC centre is due to multiple dimensions of diversity applying at the same time to the same individual children (e.g., children from socio-economically disadvantaged homes who also have a different first language), or to the presence within the same centre of different groups of children to whom different forms of diversity apply (e.g., a group of children from socio-economically disadvantaged homes plus another group of children with special education needs).

Figure 2. Dimensions and levels of diversity in early childhood education and care centres



2.2.1. Limitations of the analysis

When analysing results from TALIS Starting Strong 2018, it is important to keep in mind that:

- **Data from TALIS Starting Strong cannot address questions about diversity, equity and inclusion with regard to children who are not attending ECEC settings in participating countries.** Some considerations relevant for understanding and assessing diversity, equity and inclusion may not be reflected in the data since the survey does not provide information on children who are not enrolled in ECEC centres. This caveat may be particularly relevant in contexts where ECEC enrolment rates differ between children from different backgrounds.³ Further, the data from the survey can neither be used to measure differences in ECEC participation rates among different groups of children nor to identify any potential reasons behind such differences. Therefore, this paper does not address the question of whether the ECEC enrolment rates of diverse children differ among

³ In many OECD and partner countries, enrolment in ECEC remains lower and occurs later among children from socio-economically disadvantaged families, with an immigration background, or with special education needs, as compared to children without these backgrounds (OECD, 2021^[33]; 2020^[4]; 2019^[34]; OECD, 2019^[8]). Many factors can account for differential enrolment patterns. In many countries, childcare remains expensive for families despite government support. As a result, many lower-wage workers, particularly women, prefer to keep young children at home and forgo labour market participation (OECD, 2020^[4]). Availability can be another barrier for vulnerable groups. ECEC provision tends to be weaker in poorer, less-profitable areas in systems that rely on private providers and are more exposed to market-based forces (Noailly and Visser, 2009^[32]; Lloyd and Penn, 2014^[37]). Further, cultural norms, values and the availability of homecare allowances may discourage enrolment, in particular among immigrant or low-income families (OECD, 2016^[38]; Pavolini and Van Lancker, 2018^[35]; OECD, 2020^[4]).

participating countries, nor whether any potential differences in such rates affect the observed levels of diversity in their ECEC settings.

- **In TALIS Starting Strong, information on the characteristics of children comes from ECEC staff and centre leaders, rather than from parents/guardians or administrative sources.** ECEC staff and centre leaders may have an incomplete knowledge of children’s characteristics, including their socio-economic and cultural backgrounds or their personal conditions. This may differ from information collected through other means (e.g., parental surveys, administrative data).
- **Harmonised question formats and small sample sizes limit opportunities for analysis.** TALIS Starting Strong collects information using harmonised survey questionnaires, which involve a degree of aggregation and standardisation of the categories that describe the characteristics of children and ECEC centres across countries (e.g., pre-defined intervals for the percentage of children with a given background within centres; no detail about the specific language spoken at home other than being different from the language used in the centre; no detail about specific special education needs; etc.). The granularity of the information on children’s backgrounds is therefore limited. Moreover, opportunities for highly disaggregated analysis that would examine distributions or outcomes for sparse groups of children in specific types of ECEC centres are constrained by sample sizes which, in some cases, are too small to yield reliable estimates.
- **In TALIS Starting Strong, information about the beliefs and activities of ECEC staff and centre leaders come from self-reports.** The views of ECEC staff and centre leaders provide insights into how they perceive their work environments as well as the ECEC policies and practices implemented in their centres. However, as with any self-reported data, these accounts are subjective and may differ from information collected through other means (e.g., administrative data or direct observations).
- **Data for the first cycle of TALIS Starting Strong were collected in 2018, before the COVID-19 pandemic.** While the pandemic had, and may continue to have, an important impact on the ECEC sector across countries, results from the first cycle of TALIS Starting Strong can only provide baseline indicators on its situation prior to the pandemic.

3. An overview of the diversity of children in early childhood education and care centres

As a starting point for subsequent analyses, this section looks at the prevalence of ECEC centres with high shares of diverse children and across the nine participating countries and at the relative levels of concentration of these children in ECEC centres within countries. Assessing the diversity profiles of ECEC centres is important because ensuring equity and inclusion in ECEC may require allocating resources and implementing specific practices in response to those profiles. After looking first at the four dimensions of diversity separately, the section then examines the prevalence of ECEC centres where multiple dimensions of diversity apply. Finally, the section examines the association between two features of ECEC centres, namely location (rural or urban) and type of management (public or private), and the diversity of their children’s populations.

3.1. ECEC centres by share of children from socio-economically disadvantaged homes

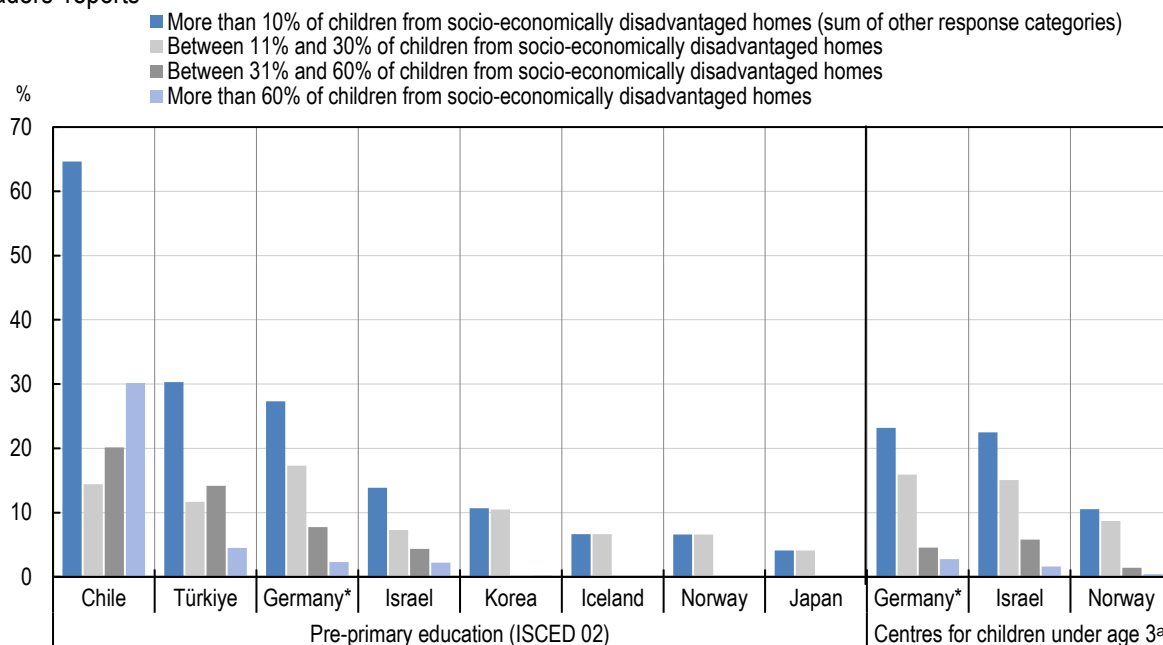
Results from TALIS starting Strong 2018 show that the distribution of ECEC centres according to the share of socio-economically disadvantaged children that attend them varies notably across participating countries. This variation is related to cross-country differences in the socio-economic composition of the overall country population, but likely also to policies affecting the concentration of children from socio-economically disadvantaged homes within specific centres (OECD, 2019^[8]).

At the pre-primary level, centres where this dimension of diversity applies are most common in Chile, with 65% of centre leaders in the country reporting a high share of children from disadvantaged homes (Figure 3, dark blue bar). In Denmark (with low response rates), Germany and Türkiye, socio-economically disadvantaged populations of children are reported by between around 25% and 30% of centre leaders, whereas in Israel and Korea this is the case for between 10% and 15% of centres, and in Iceland, Japan and Norway for less than 10% of centres. In centres for children under age 3, the percentage of centres with high shares of socio-economically disadvantaged children ranges between 10% and 25% in the four countries that collected data at this level (Figure 3 and Table A.1).

The breakdown of diverse centres according to the specific share of socio-economically disadvantaged children provides a complementary perspective, that of the within-country concentration of children with this background across ECEC centres (Figure 3, grey and light blue bars). In most countries, centres where between 11% and 30% of children come from socio-economically disadvantaged homes account for the majority of socio-economically diverse centres. At the pre-primary level, virtually all centres in Iceland, Japan, Korea and Norway belong in this category, as do between half and two-thirds of all socio-economically diverse centres in Germany and Israel. This suggests a relatively low within-country level of concentration of socio-economic disadvantage among children attending ECEC centres in those countries. By contrast, in Chile, Denmark (with low response rates) and Türkiye, the majority of socio-economically diverse ECEC centres are centres where more than 30% of children come from disadvantaged homes, indicating a higher degree of concentration of these children in specific centres. Particularly in Chile, where almost half of the centres with a high share of socio-economically disadvantaged children are centres where more than 60% of the children have this background. As for centres serving children under age 3, in all four countries more than two-thirds of socio-economically diverse centres are centres with modest (11% to 30%) concentrations of disadvantaged children.

Figure 3. Children from socio-economically disadvantaged homes in early childhood education and care centres

Percentage of ECEC centres by share of children from socio-economically disadvantaged homes, based on centre leaders' reports^{1,2}



Notes:

a. Data for early learning settings with children under age 3 are limited to centre-based settings to ensure comparability with ISCED Level 02. Data from home-based settings are excluded. * Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. For more information, see Annex B in (OECD, 2019^[8]). ¹ Responses reflect ECEC centre leaders' personal perceptions of children's background and may be based on rough estimates. ² Socio-economically disadvantaged homes refer to homes lacking the basic necessities or advantages of life, such as adequate housing, nutrition or medical care.

Results are not reported when countries have too few or no observations in a given response category to provide reliable estimates and/or to ensure the confidentiality of respondents.

Countries are sorted in descending order by the percentage of ECEC centres with more than 10% of children in the corresponding dimension of diversity (sum of other response categories).

Source: OECD (2019^[24]), TALIS Starting Strong 2018 Database, Table A.1.

3.2. ECEC centres by share of children with special education needs

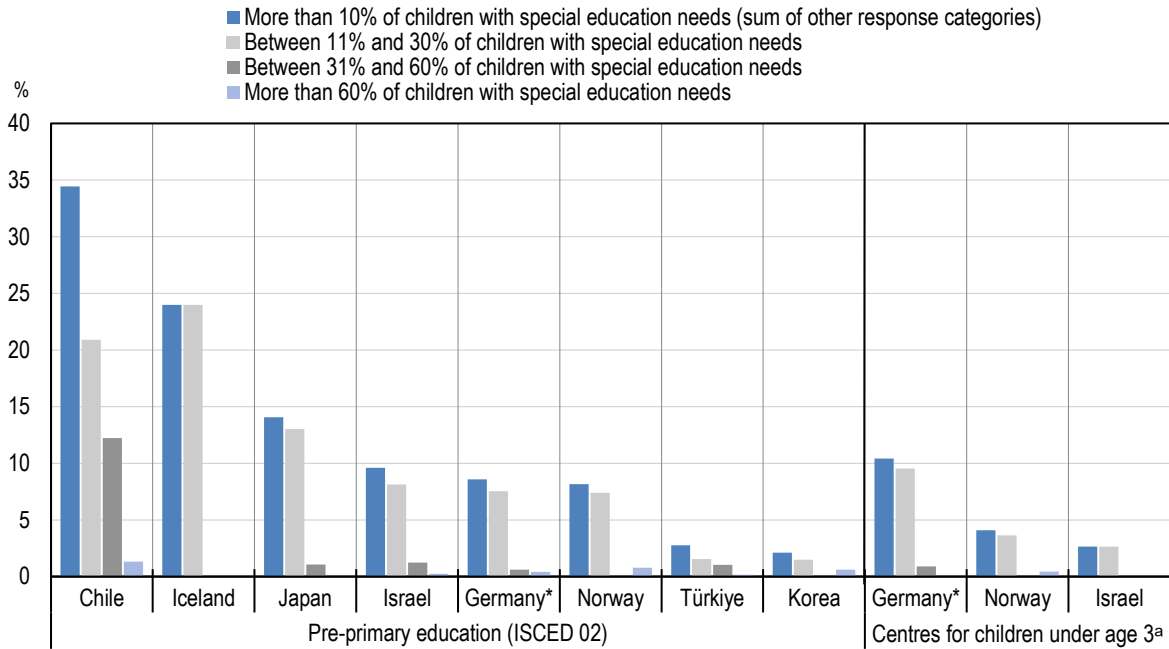
In all participating countries, reports from centre leader indicate that the share of children with special education needs is small (below 10%) in a large majority of ECEC centres.⁴ However, a non-negligible percentage of diverse centres on this dimension exists in all countries, ranging from fewer than one in twenty centres in Korea and Türkiye at the pre-primary level and in Israel and Norway in centres for children under age 3, to between a fifth and around a third of centres in Chile and Iceland at the pre-primary level and in Denmark (with low response rates) at both levels (Figure 4. dark blue bar and Table A.2). Such variation may respond to multiple reasons, such as differences in countries' policies concerning the definition of special education needs, the number and training of

⁴ ECEC centres catering exclusively for children with special education needs were out of scope of the target population for TALIS Starting Strong 2018 and are thus not included in the sample (OECD, 2019^[39]).

professionals available to diagnose them, and strategies to support children with this type of diversity.

Figure 4. Children with special education needs in early childhood education and care centres

Percentage of ECEC centres by share of children with special education needs, based on centre leaders' reports^{1,2}



Notes:

a. Data for early learning settings with children under age 3 are limited to centre-based settings to ensure comparability with ISCED Level 02. Data from home-based settings are excluded. * Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. For more information, see Annex B in (OECD, 2019^[8]). ¹ Responses reflect ECEC centre leaders' personal perceptions of children's background and may be based on rough estimates. ² Children with special education needs are children for whom a special learning need has been formally identified because they are mentally, physically, or emotionally disadvantaged.

Results are not reported when countries have too few or no observations in a given response category to provide reliable estimates and/or to ensure the confidentiality of respondents.

Countries are sorted in descending order by the percentage of ECEC centres with more than 10% of children in the corresponding dimension of diversity (sum of other response categories).

Source: OECD (2019^[24]), TALIS Starting Strong 2018 Database, Table A.2.

As with other dimensions of diversity, centres with modest concentrations of children with special education needs prevail among those diverse centres: in Germany (at both levels), Iceland, Israel (at both levels), Japan, Korea and Norway (at both levels), centres where between 11% and 30% of the children have special education needs account for over three-quarters of the centres where this dimension of diversity is salient. However, in Chile, Denmark (at both levels, with low response rates), Korea and Türkiye, at least a quarter and up to nearly half of these diverse centres have higher concentrations (i.e., more than 30%) of children with special education needs, despite the very different overall prevalence of this type of diversity in these countries (e.g., of 34% in Chile vs. less than 3% in Korea or Türkiye).

These concentration patterns may respond to different reasons. Children with special education needs tend to be placed in (or families tend to opt for) settings that are able to provide specialised support, and whose staff have the necessary training and experience. If these services and staff are not spread-out across the sector, children with special education

needs may end up concentrating in only a few ECEC centres. By contrast, when most centres are capable of providing specialised support, there is likely a lesser need for selective placements. Another reason could be that ECEC centres have different awareness or capacity to support the diagnosis of special education needs.

3.3. ECEC centres by share of children with a different first language

There is substantial variation between participating countries with regard to the percentage of children participating in ECEC whose first language is different from the language(s) used in their ECEC centres. Among other factors, such differences reflect countries' own linguistic traditions as well as the size and characteristics of immigrant populations in their demographic composition⁵.

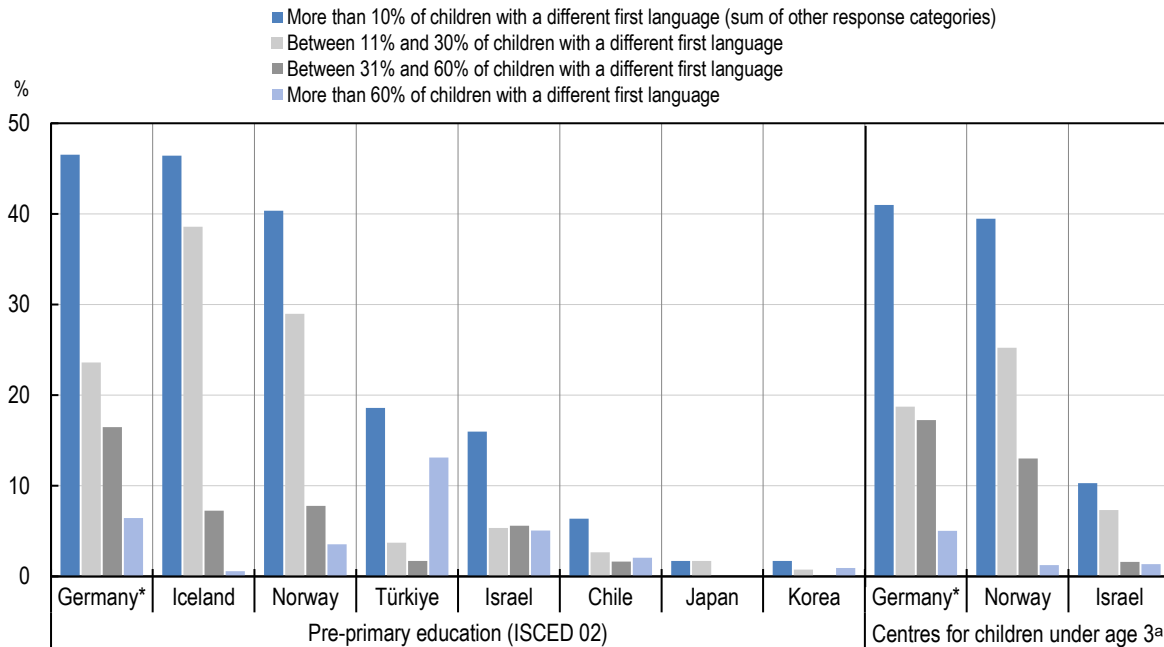
The share of pre-primary ECEC centres with high shares of children with a different first language ranges from more than 40% of centres in Denmark (with low response rates), Germany, Iceland, and Norway to less than 2% of centres in Japan and Korea. Among centres for children under age 3, it represents also around 40% of centres in Denmark (with low response rates), Germany and Norway, and about 10% of centres in Israel (Figure 5 dark blue bar and Table A.3).

Moreover, in most participating countries, ECEC centres with relatively high concentrations of children with a different first language represent a substantial proportion of linguistically diverse centres (Figure 5, dark grey and light blue bars). Most notably, in Türkiye pre-primary centres where more than 30% of children have a first language different from the language(s) used in the centre account for 80% of linguistically diverse centres, and in Israel they represent 67% of such pre-primary centres. Concentration patterns are also high in Chile and Korea, two countries where the overall share of linguistically diverse centres is much lower. In Germany, where the overall prevalence of linguistically diverse centres is highest at 47% of all ECEC centres, around half of those centres at both levels of education are centres where over 30% of children have a different first language. By contrast, the level of concentration is lower in Iceland and Norway (at both levels), despite a high overall prevalence of this form of diversity.

⁵ Providing a detailed account of the context of migration in the countries participating in TALIS Starting Strong 2018 falls beyond the scope of this paper. Countries can differ markedly in this respect. Large immigration flows can be a relatively new phenomenon in some countries and a long-standing feature of society in others. The criteria for admitting immigrants can also vary considerably, with some countries giving preferential admission to the highly educated and others accepting a greater share of low-skilled or humanitarian immigrants. In turn, immigrants may choose destinations based on wide range of factors, including linguistic or cultural links with their home country, the presence of a large community of compatriots, or geographical proximity. Further, in most countries immigrant populations are far from homogeneous, and the diversity of their geographic and cultural origins is often mirrored by linguistic diversity. For contextual information, see (OECD/European Union, 2018_[36]).

Figure 5. Children with a different first language in early childhood education and care centres

Percentage of ECEC centres by share of children whose first language is different from the language(s) used in their ECEC centre, based on centre leaders' reports^{1,2}



Notes:

a. Data for early learning settings with children under age 3 are limited to centre-based settings to ensure comparability with ISCED Level 02. Data from home-based settings are excluded. * Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. For more information, see Annex B in (OECD, 2019_[8]). ¹ Responses reflect ECEC centre leaders' personal perceptions of children's background and may be based on rough estimates. ² Children with a different first language are children whose first language, as used in their family environment, is different from the language(s) used in their ECEC centre. Results are not reported when countries have too few or no observations in a given response category to provide reliable estimates and/or to ensure the confidentiality of respondents.

Countries are sorted in descending order by the percentage of ECEC centres with more than 10% of children in the corresponding dimension of diversity (sum of other response categories).

Source: OECD (2019_[24]), TALIS Starting Strong 2018 Database, Table A.3.

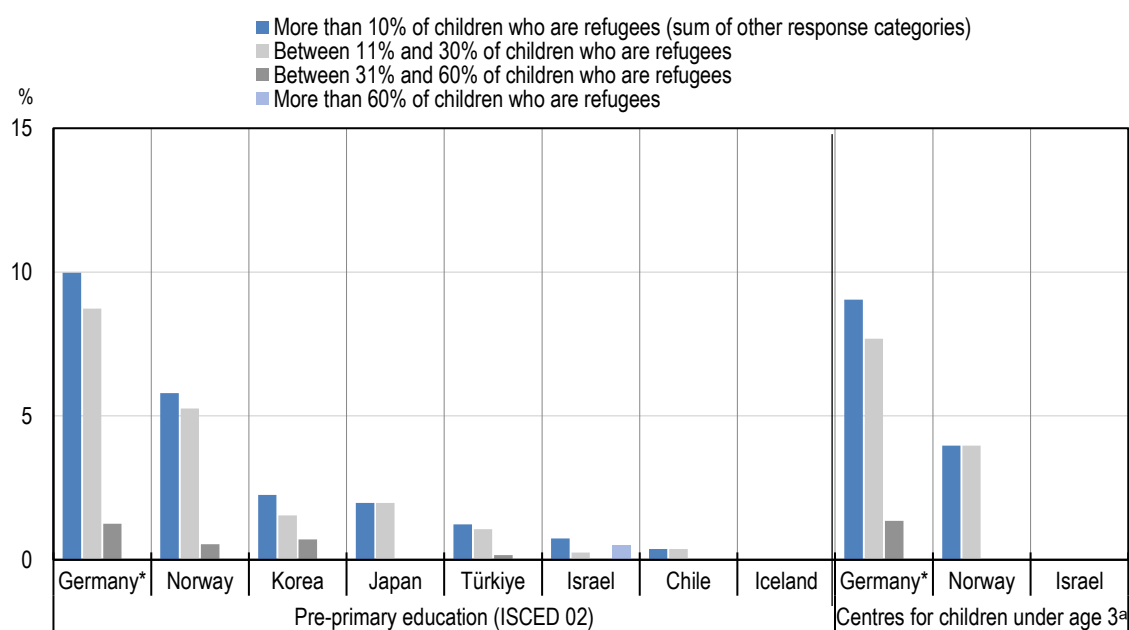
3.4. ECEC centres by share of refugee children

In all participating countries, among the dimensions of diversity captured by TALIS Starting Strong the least commonly reported is the presence of refugee children in ECEC centres. Nonetheless, the percentage of centres where leaders report a high share of children who are refugees remains sizeable in some countries and requires adequate resources to meet the needs of this particularly vulnerable population group (Cerna, 2019_[25]; Siarova and van der Graaf, 2022_[26]).

Denmark (with low response rates), Germany and Norway, all three at both the pre-primary level and in centres for children under age 3, are the countries with the highest proportions of ECEC centres with high shares of refugee children, ranging between 4% and 11% of centres. For all other participating countries, these diverse centres represent less than 3% of all their ECEC centres. In terms of concentration patterns, centres where more than 30% of the children are refugees are rare (below 2% of the total number of centres) in all participating countries (see Figure 6 and Table A.4).

Figure 6. Refugee children in early childhood education and care centres

Percentage of ECEC centres by share of children who are refugees, based on centre leaders' reports^{1,2}



Notes:

a. Data for early learning settings with children under age 3 are limited to centre-based settings to ensure comparability with ISCED Level 02. Data from home-based settings are excluded. * Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. For more information, see Annex B in (OECD, 2019^[8]). ¹ Responses reflect ECEC centre leaders' personal perceptions of children's background and may be based on rough estimates. ² Refugee children refers to children who have fled to another country to seek refuge from war, political oppression, persecution, or a natural disaster, or who were born while their parents were travelling to the destination or born shortly after the parents' arrival.

Results are not reported when countries have too few or no observations in a given response category to provide reliable estimates and/or to ensure the confidentiality of respondents.

Countries are sorted in descending order by the percentage of ECEC centres with more than 10% of children in the corresponding dimension of diversity (sum of other response categories).

Source: OECD (2019^[24]), TALIS Starting Strong 2018 Database, Table A.4.

3.5. ECEC centres with multiple dimensions of diversity

Besides revealing the extent to which each of the four dimensions of diversity applies to ECEC centres in participating countries, TALIS Starting Strong can be used to examine how these dimensions accumulate at the centre level. Individuals and settings that embody different dimensions of diversity are of increasing interest to policymakers and researchers because they can be, and often are, exposed to multiple types of discrimination and disadvantages that occur as a consequence of the combination of identities (Cerna et al., 2021^[27]; OECD, 2023^[28]). However, it is important to emphasise that TALIS Starting Strong data cannot be used to distinguish between situations where this accumulation applies to the same individual children or to different groups of children within ECEC centres. Subsequent sections of the paper draw on the distinction between centres where a different number of dimensions of diversity apply to more than 10% of the children to examine how indicators of structural and process quality at the ECEC centre level vary with the accumulation of dimensions of diversity in their children's populations.

Across participating countries, large variation exists in the overall level of diversity of their ECEC centres when considering the four dimensions of diversity examined in this paper (Figure 7). In Japan and Korea 17% and 16% of pre-primary centre leaders, respectively,

report that at least one of the four dimensions of diversity captured by the survey applies to more than 10% of the children attending their ECEC centres. In Israel, this is the case for 28% of pre-primary centres and 27% of centres for children under age 3. By contrast, a high share of children to whom one (any) dimension of diversity applies is reported by 39% of centre leaders in Türkiye, by between 40% and 50% of centre leaders in Norway and Denmark (with low response rates) at both levels and in Germany in centres for children under age 3, by 56% of centre leaders in Iceland and Germany at the pre-primary level, and by 70% of centre leaders in Chile (Figure 7: Dark blue bar; Table 1: Col. A; Table A.5).

Across countries, the incidence of diversity in ECEC centres is largely driven by the two most prevalent types of diversity, that is, the presence of high shares of children from socio-economically disadvantaged homes and children with a different first language. By contrast, high shares of children with special education needs and of children who are refugees account for a smaller fraction of the diversity of children's populations in ECEC centres.

3.5.1. (Any) one dimension of diversity

In all countries but Denmark (with low responses), a majority of leaders report that it is only one of the four dimensions of diversity that applies to more than 10% of the children enrolled in their (diverse) centres, rather than two or more dimensions (Figure 7: Light grey bar; Table 1: Col. C). This means that, in the majority of cases, the diversity of the children's populations in ECEC centres is *single- rather than multi-dimensional*. This ranges from 84% and 94% of all diverse ECEC centres (and 14% and 15% of all centres) in Japan and Korea, respectively⁶, to around 70% of all diverse ECEC centres (and between 20% to 40% of all centres) in Iceland, Israel (at both levels), Norway (at both levels) and Türkiye. In Chile and in Germany (at both levels), single-dimensionality accounts for about 50% of all diverse centres (and 36% and 30% of all centres, respectively), and in Denmark (with low response rates) it represents close to 40% of all diverse centres (and 21% of all ECEC centres) (Table A.5).

3.5.2. (Any) two dimensions of diversity

ECEC centres where two dimensions of diversity apply to more than 10% of the children exist in all the participating countries, albeit to a varying degree (Figure 7: Dark grey bar; Table 1: Col. D). Most notably, in Chile these highly diverse centres represent 46% of all diverse centres and 32% of all pre-primary centres, thus making two-dimensionality almost as common as single-dimensionality. In Germany (at both levels) and in Iceland, centres where two dimensions of diversity apply to more than 10% of the children represent about a third of all diverse centres and almost a fifth of all centres. Two-dimensionality is less common in Norway and Türkiye (about 10% of all centres), in Israel (about 5% of all centres, at both levels) and in Japan and Korea (less than 1% of all centres).

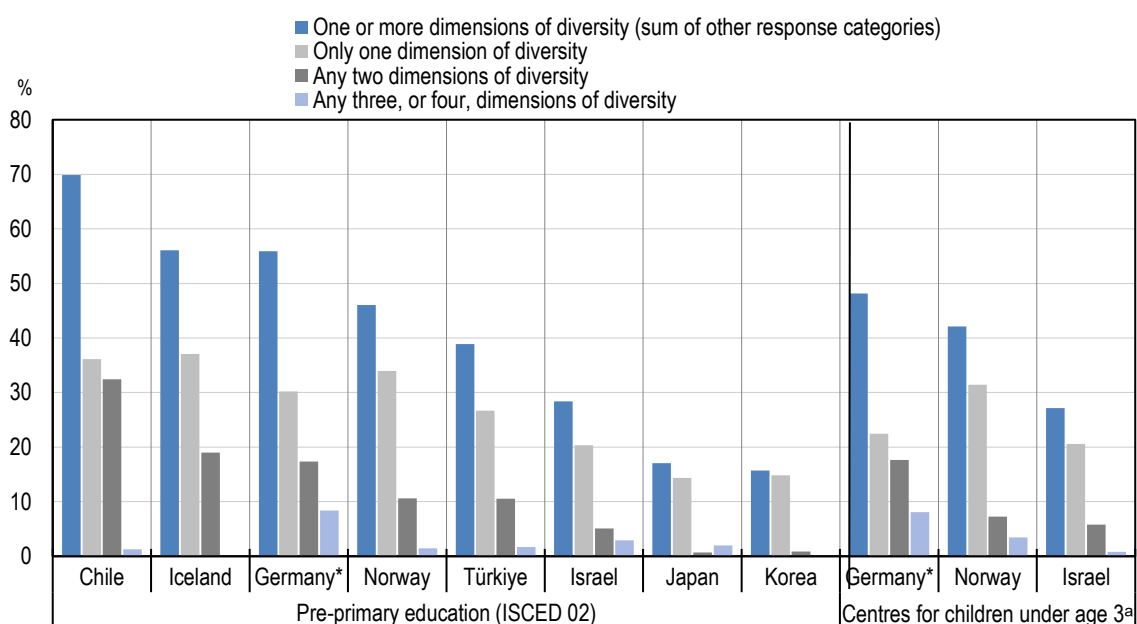
Zooming into the specific two-way combinations of dimensions of diversity most commonly observed in each country serves to shed light on the particular challenges they may confront in their efforts to promote equity and inclusion in ECEC. Results in Table 1 (Cols. E-J) illustrate the specific pairs of dimensions of diversity that co-occur at the centre level in each participating country. In Chile and Japan, a very large majority of the highly diverse centres serve children from socio-economically disadvantaged homes and children

⁶ This is calculated by dividing the percentage of centres where only one dimension of diversity applies (Col. C in Table 1) by the overall percentage of diverse centres (Col. A in Table 1). Ensuing results follow the same logic.

with special education needs. In Germany at both levels, in Israel in centres for children under age 3 and in Türkiye at the pre-primary level, the most frequent combination is that of socio-economic disadvantage and different first language. In Iceland, the most common form of two-dimensionality concerns children with a different first language and children with special education needs. In Norway, the presence of children with a different first language drives two-dimensionality, in combination with socio-economic disadvantage or refugee status at the primary level, and with socio-economic disadvantage in centres for children under age 3. In Denmark (with low response rates), at both levels, and in Israel, at the pre-primary levels, various pairs of dimensions are observed in similar shares of centres (Table A.5).

Figure 7. Accumulation of dimensions of diversity in early childhood education and care centres

Percentage of ECEC centres by number of dimensions of diversity that apply to more than 10% of the children in the centre, based on reports from centre leaders^{1,2}



Notes:

a. Data for early learning settings with children under age 3 are limited to centre-based settings to ensure comparability with ISCED Level 02. Data from home-based settings are excluded. * Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. For more information, see Annex B in (OECD, 2019^[8]). ¹ Dimensions of diversity refers to children from socio-economically disadvantaged homes, children with special education needs, children with a different first language, and children who are refugees. For full definitions, see previous Figures in the publication. ² Several dimensions of diversity may accumulate within an ECEC centre when each of these dimensions, considered separately, applies to more than 10% of the children in the centre.

Results are not reported when countries have too few or no observations in a given response category to provide reliable estimates and/or to ensure the confidentiality of respondents.

Countries are sorted in descending order by the percentage of ECEC centres where one or more dimensions of diversity apply to more than 10% of children in the centre (sum of other response categories).

Source: OECD (2019^[24]), TALIS Starting Strong 2018 Database, Table A.5.

3.5.3. (Any) three, or four, dimensions of diversity

In most participating countries, ECEC centres where three or four dimensions of diversity apply to more than 10% of the children (Figure 7: Light blue bar; Table 1: Cols. K and L) are rare, representing less than 4% of all centres. However, at both levels of education,

these “extremely diverse” centres account for about 8% of all centres in Germany, and for close to 20% of all centres in Denmark (with low response rates). In Japan, despite their low overall prevalence (2%), centres with high shares of children on three dimensions of diversity are more common than centres where only two dimensions apply (Table A.5). Given their rarity, ensuing analysis aggregate centres where three or four dimensions of diversity apply to centres where two dimensions apply into the category “ECEC centres where *two or more* dimensions of diversity apply”.

Table 1. Distribution of early childhood education and care centres by number of dimensions of diversityPercentage of ECEC centres where the following number of dimensions of diversity apply to more than 10% of the children, based on centre leaders' reports^{1,2}

	(A)	(B)	(C)	The following TWO dimensions of diversity apply to more than 10% of children in the ECEC centre:							(K)	(L)
	ONE OR MORE dimensions of diversity apply to more than 10% of children in the ECEC centre	TWO OR MORE dimensions of diversity apply to more than 10% of children in the ECEC centre	ONE dimension of diversity applies to more than 10% of children in the ECEC centre	(D) Any TWO dimensions	(E) Children from socio-economically disadvantaged homes AND children with special education needs	(F) Children from socio-economically disadvantaged homes AND children with a different first language	(G) Children from socio-economically disadvantaged homes AND children who are refugees	(H) Children with a different first language AND children with special education needs	(I) Children with a different first language AND children who are refugees	(J) Children with special education needs AND children who are refugees	ANY THREE of dimensions of diversity apply to more than 10% of children in the ECEC centre	ALL FOUR dimensions of diversity apply to more than 10% of children in the ECEC centre
	%	%	%	%	%	%	%	%	%	%	%	%
ISCED 02 centres												
Chile	69.9	33.7	36.1	32.4	29.3	3.1	c	c	c	c	0.9	0.4
Germany*	55.9	25.7	30.2	17.4	1.2	11.6	0.4	0.8	3.3	c	6.7	1.7
Iceland	56.1	19.0	37.1	19.0	0.6	4.9	c	13.5	c	c	c	c
Israel	28.4	8.0	20.4	5.1	1.9	1.9	c	1.2	c	c	2.4	0.5
Japan	17.1	2.7	14.4	0.7	0.7	c	c	c	c	c	2.0	c
Korea	15.7	0.9	14.8	0.9	0.2	c	c	c	c	0.7	c	c
Norway	46.0	12.1	34.0	10.6	0.7	4.7	c	0.4	4.8	c	1.4	c
Türkiye	38.9	12.2	26.7	10.6	1.3	8.7	c	0.0	0.5	c	1.6	0.1
Centres for children under age 3^a												
Germany*	48.2	25.7	22.4	17.7	0.9	9.9	0.4	2.3	4.1	c	7.2	0.9
Israel	27.2	6.6	20.6	5.8	1.3	4.1	c	0.4	c	c	0.8	c
Norway	42.1	10.7	31.4	7.3	0.7	4.0	c	0.6	1.9	c	3.4	c

Notes: a. Data for early learning settings with children under age 3 are limited to centre-based settings to ensure comparability with ISCED Level 02. Data from home-based settings are excluded. * Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. For more information, see Annex B in (OECD, 2019^[8]). ¹ Dimensions of diversity refers to children from socio-economically disadvantaged homes, children with special education needs, children with a different first language, and children who are refugees. For full definitions, see previous Figures in the publication. ² Several dimensions of diversity may accumulate within an ECEC centre when each of these dimensions, considered separately, applies to more than 10% of the children in the centre.

Results are not reported when countries have too few or no observations in a given response category to provide reliable estimates and/or to ensure the confidentiality of respondents.

Source: OECD (2019^[24]), TALIS Starting Strong 2018 Database, Table A.5

3.6. Location, type of management and the diversity profiles of ECEC centres

Within countries, the distribution of diverse children across ECEC centres responds not only to their share in the overall population but can also be related to specific policies and the organisation of the ECEC sector. At the centre level, two potentially relevant features are location (rural or urban) and type of management (public or private). For instance, the location of an ECEC centre may influence its share of diverse children due to its association with residential patterns (e.g., housing costs, distance to other centres), whereas centres' type of management may in some cases influence admission criteria and enrolment costs. Both features can also be related to the size of centres.

3.6.1. Rural and urban location

By and large, results from TALIS Starting Strong 2018 do not show consistent patterns of association between the location of ECEC centres (rural versus urban) and the diversity of populations of children they serve. That is, in the majority of participating countries, ECEC centres in rural and urban areas⁷ appear equally likely to have low or high shares of children to which different dimensions of diversity apply (Table A.7).

There are, however, some exceptions to this general pattern. Whenever statistically significant differences are observed between rural and urban centres, higher levels of diversity tend to be reported by leaders of centres in urban locations. This is the case for two dimensions of diversity in particular (i.e., socio-economic disadvantage and different first language), for some countries only, and much more pronounced in centres for children under age 3 than in pre-primary centres. In Germany, both types of diversity are more common in urban centres at both levels of education: for example, the proportion of ECEC centres with a high share of children from socio-economically disadvantaged homes is 18 percentage points larger in urban than in rural pre-primary centres and 12 percentage points larger in urban than in rural centres for children under age 3, whereas the proportion of centres with high shares of children with a different first language is around 30 percentage points larger in urban than in rural centres at both levels of education. In Israel, a similar pattern is observed with respect to different first language at both levels, and with respect to socio-economic disadvantage in centres for children under age 3. In Norway, both dimensions of diversity are more common in urban than in rural centres for children under age 3, but not at the pre-primary level. Therefore, in Germany, Israel and Norway, all of which have relatively even shares of rural and urban ECEC centres (in the range 40%-60%, at both levels), socio-economic and linguistic diversity is higher in urban than in rural centres, especially in centres for the youngest children. Türkiye is the only country where a dimension of diversity (different first language) is more common in rural than in urban ECEC centres (Table A.7).

Broadly similar results are observed with regard to the accumulation of dimensions of diversity: centres where two or more dimensions apply to more than 10% of children are more common in urban than in rural areas in Germany (21 percentage point difference at the pre-primary level, and 15 point difference in centres for children under age 3), in Israel (5 percentage point difference at the pre-primary level, and 11 point difference in centres for children under age 3), and in Norway (14 percentage point difference in centres for children under age 3). For the rest of the countries, however, no significant differences are

⁷ In TALIS Starting Strong 2018, “rural” refers to locations with up to 15 000 inhabitants, and “urban” refers to locations with more than 15 000 inhabitants. In the cases of Japan and Korea, the cut-off point was set to 50 000 inhabitants to account for the high population density of both countries.

observed in the percentage of highly diverse centres depending on their location (Table A.8).

An uneven distribution of children from diverse backgrounds across rural and urban centres can be concerning if there is indication that the quality of ECEC provision varies between these locations. However, prior analyses of TALIS Starting Strong 2018 data found that structural conditions and process quality varied little according to the urban or rural location of ECEC centres. For example, the distribution of qualified staff does not vary consistently between rural and urban centres, and the number of staff per child tends to be similar across centres in all centres but Chile, Iceland and Türkiye. Results suggest also that differences in process quality according to geographic location are minor, being reported only in Norway in centres for children under age 3 (OECD, 2019^[8]; OECD, 2020^[3]).

3.6.2. *Public and private type of management*

Across participating countries, the type of management of ECEC centres is not consistently associated with the diversity of their children's populations. A relationship is observed only for the most prevalent dimensions (socio-economic disadvantage and different first language) in a limited number of countries (Table A.9). Differences in the diversity profiles of publicly- and privately-managed centres relate primarily to the dimensions of socio-economic disadvantage (Chile, Denmark at the pre-primary level [with low response rates], Israel at the pre-primary level and Türkiye) and different first language (Denmark at both levels [with low response rates], Norway at the pre-primary level, and Türkiye). For example, at the pre-primary level, 79% of public centres in Chile have a high share of children from socio-economically disadvantaged homes, as compared to 45% of private centres, whereas both types of management are widespread in the country (58% and 42%, respectively). In Türkiye, centres with a high share of socio-economically disadvantaged children are also much more common among public centres (34%) than among private centres (7%), while ECEC provision is largely dominated by the public sector (89%). In terms of linguistic diversity, the main differences by type of management are observed in Norway, where at the pre-primary level 51% of public centres have a high share of children with a different first language, compared to 30% of private centres, and in Denmark (with low response rates), where the proportion of linguistically diverse centres is more than 30 percentage points higher in public than in private centres at both levels (Table A.9).

Another noteworthy result is that, at the pre-primary level, the percentage of centres where *none* of the four dimensions of diversity examined in this paper applies to more than 10% of children is significantly higher in privately- than in publicly-managed centres in five of the nine participating countries (Chile, Denmark (with low response rates), Israel, Norway, and Türkiye), the difference ranging between 16 and 39 percentage points. In centres for children under age 3, the percentage of the incidence of (any type of) diversity is only different in Denmark (with low response rates), being again higher in public ECEC centres. Therefore, in these countries, privately-managed ECEC centres, especially at the pre-primary level, tend to be less diverse than publicly-managed centres. Interestingly, very different overall shares of public and private types of management exist in the ECEC sectors of these the five countries (Table A.10).

Differences in the diversity profiles of ECEC centres according to type of management can be worrisome in cases where the quality of ECEC varies between public and private providers. Evidence from TALIS Starting Strong 2018 suggests that in several participating countries, staff in publicly-managed centres report less diversified forms of support for professional development than staff in privately-managed centres. Moreover, staff in publicly-managed centres report somewhat less support from centre leaders for facilitating

children's learning and development and for engaging parents/guardians than peers in privately-managed centres (OECD, 2019_[8]).

4. Structural quality factors and the diversity of early childhood education and care centres

TALIS Starting Strong 2018 considers a wide range of quality dimensions in ECEC settings that are expected to contribute to the quality of learning and well-being environments for children. Whereas process quality concerns the more proximal processes of children's everyday experiences, structural quality characteristics are conceptualised as more distal indicators of quality. Research identifies structural factors such as material resources, the number of staff per child, staff qualifications and training requirements, or the working conditions for staff as important preconditions for fostering child development in ECEC settings (Sim et al., 2019_[22]). Strategies for improving the quality of ECEC have often focused on these structural elements, with many countries raising the standards and extending regulations on the ratio of children to adults, group size, staff pre-service qualifications, among others (OECD, 2018_[1]).

TALIS Starting Strong 2018 offers a unique opportunity to examine the associations between the diversity of children's populations in ECEC centres and a selection of structural factors that support children's learning and development. In undertaking this analysis, this section addresses a first set of questions on the extent to which all groups of children have an equitable access to high-quality ECEC.

4.1. Perceived adequacy of ECEC centre resources

TALIS Starting Strong 2018 asked centre leaders whether shortages of various types of resources hinder the capacity of their centres to provide a quality environment for children's learning, development and well-being. These survey items can be combined into two synthetic indices of perceived shortages of material and of human resources at the centre level⁸. Prior analyses indicate that ECEC centre leaders perceive inadequate material resources and staff shortages as the main barriers to their effectiveness as centre leaders as well as important sources of stress. Shortages of staff are also seen as a major barrier to staff's participation in professional development (OECD, 2019_[8]). Examining whether shortages of resources are associated to centres' diversity profiles can provide insights about equity in countries' allocation of resources to ECEC centres serving different populations of children, and on the challenges faced by more and less diverse centres.

4.1.1. Material resources

The blue horizontal bars in Figure 8 show the average shares of ECEC centres where leaders report material shortages. In all participating countries, a majority of ECEC centres report shortages, varying from 53% in Norway (pre-primary level) to 85% in Türkiye. In turn, the right-hand side panel highlights potential inequities in the allocation of resources across centres. Results show that shortages of material resources tend to be more frequently reported by leaders of ECEC centres with high shares of diverse children than by leaders of centres with less diverse children's populations, albeit not in all participating countries.

⁸ Analysis with these indices cannot capture differences in the *actual* amount of material or human resources in ECEC centres but relate instead to their *adequacy* as perceived by centre leaders. This is better understood as addressing the question of whether available resources can meet the needs of the centres, which may vary according to their diversity profiles as well as other factors.

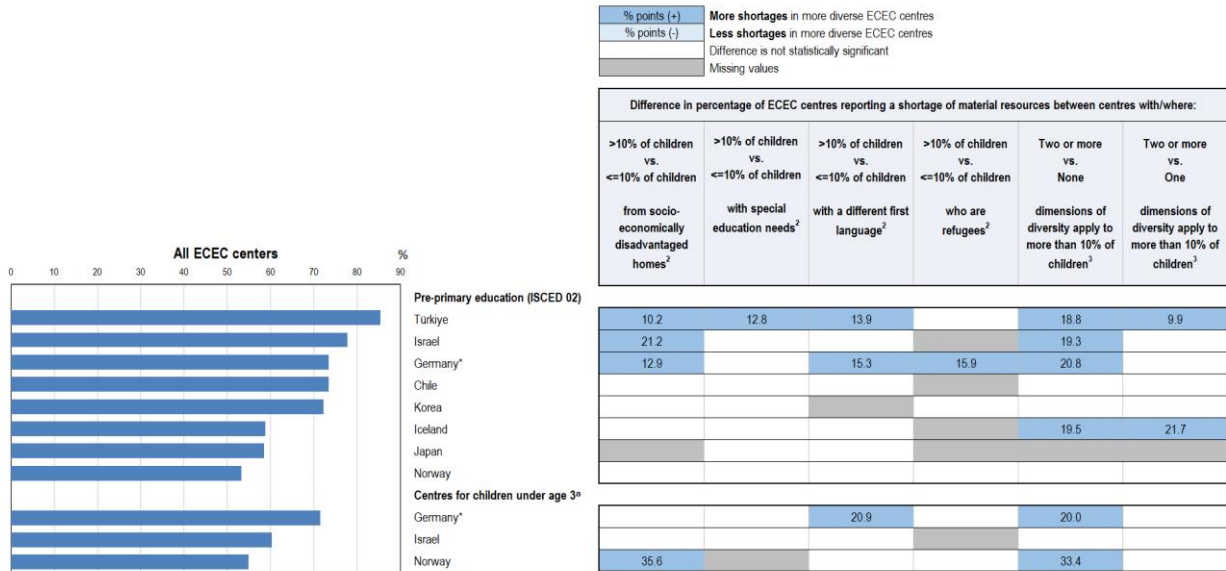
Significant differences are found in Denmark (with low response rates, at the pre-primary level), Germany (at both levels), Israel (at the pre-primary level), Norway (in centres for children under age 3) and Türkiye, with varying magnitudes and with respect to specific dimensions of diversity. Socio-economic disadvantage and different first language are the dimensions where differences are more often observed at both levels of education (see also Tables A.11 and A.13).

Further, centres where two or more dimensions of diversity accumulate show a much higher probability to report material shortages than centres where none of the dimensions apply in Germany (at both levels), Iceland, Israel (at the pre-primary level), Norway (in centres for children under age 3) and Türkiye, with differences ranging from 19 to 34 percentage points. In addition, in Iceland and Türkiye, pre-primary centres with two or more dimensions of diversity also report these shortages more often than centres where only one dimension of diversity applies.

While the overall pattern of results in (Figure 8) suggests lesser adequacy of material resources in ECEC centres with high shares of children from diverse backgrounds (and in no case the other way round), these findings do not apply to the same extent to all participating countries or dimensions of diversity. The lack of significant differences in cells of the right-hand side panel indicates cases where centre leaders of more and less diverse ECEC centres report similar levels of adequacy of material resources within countries. For instance, at the pre-primary level no differences are observed on any of the dimensions or levels of accumulation of diversity in Chile, Korea and Norway. Differences are also absent between centres for children under age 3 in Israel.

Figure 8. Shortages of material resources and dimensions of diversity in early childhood education and care centres

Difference in percentage of ECEC centres reporting a shortage of material resources¹, by dimensions of diversity^{2,3}



Notes:

a. Data for early learning settings with children under age 3 are limited to centre-based settings to ensure comparability with ISCED Level 02. Data from home-based settings are excluded. * Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. For more information, see Annex B in (OECD, 2019^[8]). ¹ The index of “shortage of material resources” is derived from the following four items: 1) shortage or inadequacy of indoor space; 2) shortage or inadequacy of outdoor play space; 3) shortage or inadequacy of play or learning materials (e.g., books, picture books, building blocks, clay, paint); and 4) shortage or inadequacy of digital technology for play and learning (e.g., computers, tablets, smart boards). For more information, see Annex B of (OECD, 2020^[3]). ² Dimensions of diversity refers to children from socio-economically disadvantaged homes, children with special education needs, children with a different first language, and children who are refugees. For full definitions, see previous Figures in the publication. ³ Several dimensions of diversity accumulate within an ECEC centre when each of these dimensions, considered separately, applies to more than 10% of the children in the centre.

Missing values imply that countries have too few or no observations in a given response category to provide reliable estimates and/or to ensure the confidentiality of respondents. For more information on significance tests, see Annex C in (OECD, 2019^[8]).

Countries are sorted in descending order by the percentage of all ECEC centres reporting a shortage of material resources.

Source: OECD (2019^[24]), TALIS Starting Strong 2018 Database, Tables A.11 and A.13.

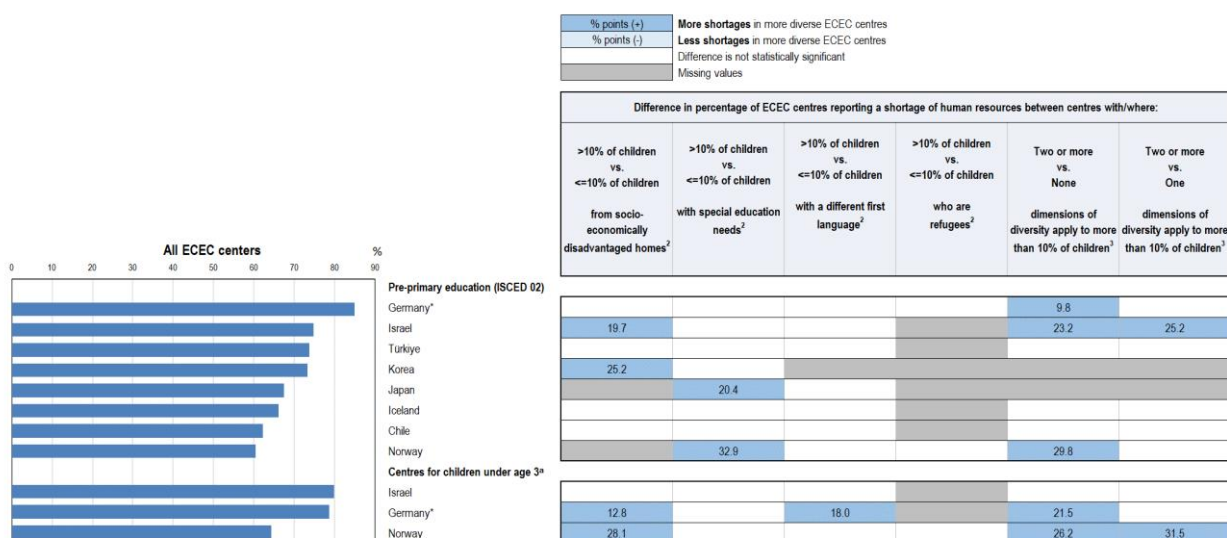
4.1.2. Human resources

A largely similar picture emerges regarding perceived shortages of human resources in ECEC centres (Figure 9 and Tables A.12 and A.13). At the pre-primary level, the share of centres reporting such shortages ranges from 60% of ECEC centres in Norway to 85% in Germany. In several countries, and with regard to different dimensions of diversity, leaders of more diverse centres tend to report greater staff shortages than leaders of less diverse centres, but the opposite result is never observed. Among the four dimensions, socio-economic disadvantage is the one more often associated with greater shortages of human resources, in Israel and Korea at the pre-primary level and in Germany and Norway in centres for children under age 3. Differences with respect to the share of children with special education needs are observed in Japan and Norway among pre-primary centres.

As with material resources, ECEC centres where two or more dimensions of diversity accumulate are more likely to report also shortages of staff than centres where no dimension of diversity applies: this holds for Germany and Norway at both levels of education, and for Israel at the pre-primary level. Similarly, some countries deviate from the overall pattern of results: similar levels of adequacy of human resources are reported by more and less diverse pre-primary centres in Chile, Iceland and Türkiye, and in Israel in centres for children under age 3.

Figure 9. Shortages of human resources and dimensions of diversity in early childhood education and care centres

Difference in percentage of ECEC centres reporting a shortage of human resources¹, by dimensions of diversity^{2,3}



Notes:

a. Data for early learning settings with children under age 3 are limited to centre-based settings to ensure comparability with ISCED Level 02. Data from home-based settings are excluded. * Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. For more information, see Annex B in (OECD, 2019^[8]). ¹ The index of “shortage of human resources” is derived from the following four items: 1) shortage of qualified staff; 2) shortage of staff for the number of enrolled children; 3) shortage of staff with competence in working with children from socio-economically disadvantaged homes; and 4) shortage of staff with competence in working with children with special education needs. For more information, see Annex B of (OECD, 2020^[3]). ² Dimensions of diversity refers to children from socio-economically disadvantaged homes, children with special education needs, children with a different first language, and children who are refugees. For full definitions, see previous Figures in the publication. ³ Several dimensions of diversity may accumulate within an ECEC centre when each of these dimensions, considered separately, applies to more than 10% of the children in the centre.

Missing values imply that countries have too few or no observations in a given response category to provide reliable estimates and/or to ensure the confidentiality of respondents. For more information on significance tests, see Annex C in (OECD, 2019^[8]).

Countries are sorted in descending order by the percentage of all ECEC centres reporting a shortage of human resources.

Source: OECD (2019^[24]), TALIS Starting Strong 2018 Database, Tables A.12 and A.13.

Overall, two main results emerge from this analysis. First, whenever differences in the perceived adequacy of material or human resources exist between more and less diverse ECEC centres, in any of the participating countries, such differences go in the direction of lesser adequacy in centres with higher shares of children from diverse backgrounds. Second, the accumulation of dimensions of diversity matters for such differences, in

particular when ECEC centres where two or more dimensions apply are compared to centres where none of the dimensions applies. These patterns are not without exceptions, however. For example, in Chile no differences are observed in the adequacy of resources of ECEC centres on any of the dimensions or levels of diversity. Further, results may vary depending on the type of resources considered, as in the case of Türkiye where differences between centres are often reported on several dimensions for material resources but never for human resources.

4.1.3. Sources of stress for staff

Staff's working conditions and environment can influence the quality of ECEC provision. For example, centres with less favourable conditions could have difficulties attracting or retaining highly motivated staff, which in turn may impair process quality within centres. However, by and large, prior results from TALIS Starting Strong 2018 do not reveal systematic differences in staff working conditions according to the composition of the children in the centre. Notably, staff in more diverse centres report similar levels of job satisfaction and salary satisfaction as their peers in less diverse centres (OECD, 2020^[3]).

New analysis suggests some associations between the sources of stress experienced by staff and the diversity profile of the ECEC centres where they work, albeit not consistently (Tables A.14 and A.15). For instance, staff working with higher shares of children with special education needs report that trying to accommodate these children is a source of stress more often than colleagues in less diverse centres in Chile, Denmark (with low response rates, at both levels), Germany (at pre-primary level) and Israel (at pre-primary level). Further, this source of stress is more often reported by staff when multiple dimensions of diversity accumulate within ECEC centres in Chile and Israel, at the pre-primary level, and in Denmark (with low response rates) and Germany, at both levels.

This adds to previous results that the percentage of staff who indicate that “a lack of resources” is an important source of stress is higher in centres with high shares of children from socio-economically disadvantaged homes in Chile, Israel and Norway (in centres for children under age 3), as well as in centres with larger proportions of children with a different first language in Denmark (for centres for children under age 3, with low response rates) and Germany (OECD, 2020, p. Table 3.38^[3]). By contrast, no differences are observed between centres with and without high shares of children from disadvantaged homes with regard to staff reports on managing classroom/playgroup/group behaviour being an important source of stress in their work, in any of the participating countries (Tables A.14 and A.15).

4.2. Staff composition, experience and training

4.2.1. Number of staff per ten children

The number of staff per child can have important implications for the quality of ECEC. At the centre level, shortages of staff can be a barrier for staff to participate in professional development or can increase staff's workloads and stress levels. At the playgroup/classroom level, a larger number of staff can facilitate that practices are adapted to children's needs and that staff and children can interact more closely. But exposure to a greater number of adults may also bring more limited opportunities for children to build strong relationships with individual staff members than in groups with fewer adults (OECD, 2019^[8]).

Analysis of TALIS Starting Strong 2018 data indicates that no or minimal differences exist between centres with high and low shares of children from diverse backgrounds in terms

of the number of staff available per ten children⁹ (Table A.16). The general absence of differences applies to most countries and to the four dimensions of diversity examined in this working paper. The only cases where lower staff-to-child ratios are reported in more as compared to less diverse centres are pre-primary centres where more than 10% of children are refugees in Germany and Türkiye, and pre-primary centres where more than 10% of children have a different first language in Türkiye. However, these exceptions do not offset a clear pattern of similarity in staff-to-child ratios across participating countries and dimensions of diversity, suggesting that this indicator of structural quality does not vary with the level of diversity of the populations of children in ECEC centres.

4.2.2. Specialised staff

ECEC centres' staff composition can also have important implications for children's experiences in ECEC, and the presence of specific staff roles can ensure that the needs of diverse children are better met (OECD, 2019_[8]). As part of TALIS Starting Strong 2018, leaders provided information the categories of staff working in their centres. Seven categories of staff roles were considered to capture different team compositions across the nine participating countries: leaders, teachers, assistants, staff for individual children, staff for special tasks, interns and other ECEC staff.

Specialised staff, who may support education and care for individual children or offer specialised activities for all children (e.g., music or sports), are identified by leaders in all countries with the exception of Japan. As with assistants, the role of specialised staff is not formally recognised in Türkiye (OECD, 2022_[29]). In general, specialised staff make up a relatively small proportion of the centre human resources reported by ECEC leaders, which is why they are aggregated to one group in this analysis. There are however notable variations across countries. For example, on average in Chile, leaders report that specialised staff account for nearly a quarter of the workforce in their centres (OECD, 2022_[29]).

Consistent with their role of supporting these children, the percentage of specialised staff is greater in pre-primary centres with a high share of children with special education needs in Chile, Denmark (with low response rates), Germany and Israel, and in centres for children under age 3 in Germany and Norway. Further, specialised staff make up a larger proportion of staff teams in centres with a greater share of children from socio-economically disadvantaged homes in pre-primary centres in Chile and Denmark (with low response rates), and in centres for children under age 3 in Germany, as well as in centres for children under age 3 with a higher share of children with a different first language in Germany and in Norway. The accumulation of several dimensions of diversity is also associated with an increase in the relative number of specialised staff in Chile and Denmark (with low response rates), at the pre-primary level, and in Germany and Norway, in centres serving children under age 3 (Tables A.17 and A.18).

It is important to bear in mind that the composition of staff teams combines multiple roles beyond those of specialised staff. In some cases, diverse centres having a larger proportion of specialised staff may in turn have lower proportions of other staff roles (OECD, 2022_[29]).

⁹ The number of staff per child at the centre refers to the total number of staff working in a centre, regardless of their role, divided by the total number of children enrolled. Because the number of staff per individual child is very low, when specific examples are cited for comparative purposes, they are presented as "number of staff per ten children", which is obtained by multiplying the number of staff per child by ten. For more information, see Annex B of (OECD, 2020_[3]).

4.2.3. *Years of experience of staff and centre leaders*

Beyond the composition of ECEC teams within ECEC centres, the qualifications and experience of individual staff members and centre leaders are important given that teaching and caring for young children requires specialised knowledge, skills and abilities, especially when children have specific needs related to their diverse backgrounds. Previous reporting on results from TALIS Starting Strong 2018 looked at the issue of staff and centre leader qualifications in depth, exploring their connections with ECEC quality. Results indicated that, in all participating countries, the percentage of staff with higher qualification levels (i.e., a bachelor's degree or equivalent or higher) was similar across centres with low and high shares of children from socio-economically disadvantaged homes (OECD, 2019, p. 170^[8]).

Analyses in this paper focus on the extent to which the years of experience of staff are associated with the diversity of children's populations in the ECEC centres where they work. Results suggest that levels of experience, as measured by the proportion of novice centre leaders and staff (i.e., with less than 5 years of experience in their roles as an ECEC centre leader and staff, respectively), vary little and without a consistent pattern across ECEC centres depending on the dimensions and levels of diversity that apply to more than 10% of the children in their ECEC centres (Tables A.19, A.20 and A.21).

4.2.4. *Staff training to work with diverse children*

Training on working with diverse children can help staff better serve different populations of children. Previous reporting from TALIS Starting Strong 2018 noted that, among staff who have been trained to work with children, those working in more diverse ECEC centres have more often covered training contents for working with a diversity of children, therefore suggesting a good alignment between their training and the profile of children that they work with (OECD, 2020^[3]). This working paper extends prior analyses by disaggregating the training topics previously grouped in a generic training area (i.e., "working with a diversity of children"¹⁰), and by exploring their coverage by ECEC staff in relation to the centre-level share of children with specific dimensions of diversity (Tables A.22, A.23 and A.24). Another extension is to look at the association between the generic training area for working with a diversity of children and the accumulation of dimensions of diversity (Table A.25).

New results suggest that the proportion of staff with cumulative training – i.e., having covered the topic in both pre-service and in-service training – for supporting children "with a different first language" is higher in ECEC centres with a high rather than a low share of children in this category in Denmark (with low response rates), Germany, Israel and Norway, in both pre-primary centres and centres for children under age 3, and in Iceland, in pre-primary centres – that is, in all the participating countries for which these differences can be estimated, save Chile (Table A.24). Training on working with children with a different first language thus appears clearly associated with working in linguistically diverse centres. Moreover, the percentage of staff with cumulative training for "working with children from diverse backgrounds" is also higher in pre-primary centres where more than 10% children come from socio-economically disadvantaged homes in Chile, Germany and Israel. Similarly, more staff report having completed cumulative training "for working with children with special education needs" in centres with a higher share of children with this type of diversity in Chile and Israel, at the pre-primary level, and in Denmark (with

¹⁰ This training area aggregates training in the following topics: "working with children from diverse backgrounds (e.g., multicultural, socio-economically disadvantaged, and religious)", "working with dual/second language learners" and "working with children with special education needs".

low response rates) and Germany in centres for children for children under age 3 (Table A.24).

The proportion of staff trained in the generic area of “working with a diversity of children” in both their initial preparation programmes and in recent in-service training does not appear to increase significantly in many countries as dimensions of diversity accumulate within ECEC centres. However, increases are observed in Denmark (with low response rates, in centres for children under age 3), Germany (at both levels) and Norway (at the pre-primary level) (Table A.25).

5. Attitudes and practices to promote equity and inclusion and the diversity of early childhood education and care centres

Children’s learning, development and well-being are directly influenced by the quality of their interactions with other children, adults, their families and the environment – which is known as process quality. Research shows that children have higher levels of emerging literacy and numeracy skills as well as better behavioural and social skills when they attend ECEC settings that provide interactions of higher quality, including most importantly a greater exposure to developmental and educational activities (OECD, 2018^[11]). Notably, for children from socio-economically disadvantaged homes, those with special education needs or those whose family language or cultural background is different from that of the majority of children at the ECEC centre, individualised and high-quality interactions with staff can smooth the transition to ECEC and support their learning, development and well-being (OECD, 2019^[8]).

TALIS Starting Strong 2018 offers a rich set of indicators of and factors associated with process quality in ECEC settings, including a variety of staff- and centre-level attitudes and practices. This section draws on a selection of indicators to examine whether variation in process quality in ECEC centres is associated to the diversity of their children’s populations.

5.1. Professional attitudes and beliefs

5.1.1. Staff’s attitudes towards diversity

The attitudes of staff in relation to diversity can shape the practices they adopt when working with children from diverse backgrounds which, in turn, have an impact on children’s development and well-being. However, asking staff about sensitive issues such as their beliefs on how to best respond to diversity can result in respondents answering in a manner that is expected to be viewed favourably by others. To at least partly overcome this social desirability bias, TALIS Starting Strong asks leaders approximately how many of the staff in their centre (“none or almost none”, “some of them”, “many” or “all or almost all”) would agree with a series of statements. For example, leaders report on the levels of agreement that they perceive among their staff about the importance of addressing multicultural diversity in their centres by encouraging children to learn that people from other cultures can have different values or to respect other cultures. As noted in previous reporting, across countries a high percentage of leaders in both pre-primary education centres and centres for children under age 3 report that “many” or “all or almost all” of their staff agree with these statements. Japan, with lower diversity in its population than other participating countries, also shows the lowest percentages of staff agreement, as perceived by leaders (OECD, 2019, p. 90^[8]).

This working paper extends prior analyses by looking at whether attitudes towards diversity vary between more and less diverse ECEC centres. These attitudes can be measured through centre leaders' views on the proportion of the staff in their ECEC centre that would agree that "it is important to be responsive to differences in children's cultural backgrounds". While this indicator does not capture staff positions about all the four dimensions of diversity covered by TALIS Starting Strong, it provides an approximation to some of them. When considering the percentage of centre leaders that report that "all or almost all" of their staff would agree with this statement, results provide little support for these attitudes being more or less prevalent in centres with high shares of children from diverse backgrounds than in centres with low shares, on any of the four dimensions of diversity, albeit differences are significant in some cases (Table A.26). Similarly, results on the potential association with the accumulation of dimensions of diversity within centres do not reveal any consistent differences (Table A.27). Results therefore suggest little within-country variation in attitudes towards diversity at the centre level associated with the composition of children's populations within centres.

5.1.2. Staff's sense of self-efficacy for supporting diverse children

A complementary perspective about staff professional attitudes towards diversity are their self-efficacy beliefs for supporting children from diverse backgrounds. Self-efficacy refers to the beliefs that staff have about their capacity to plan and implement specific instructional and care practices and to promote children's development, learning and well-being (Tschannen-Moran and Woolfolk Hoy, 2001^[30]). The self-efficacy beliefs of staff have the potential to influence their efforts and behaviours to bring about desired goals in their work in ECEC centres.

Previously reported results from TALIS Starting Strong 2018 show that ECEC staff tend to have a moderate or strong sense of self-efficacy across the 12 areas listed in the staff questionnaire. However, staff tend to report lower levels of confidence in their ability to work with children from diverse backgrounds. This applies to between one-quarter and half of staff across countries, who report low or no confidence in their ability for this type of work (OECD, 2020, p. Figure 2.14 and Table C.2.16^[31]).

New analyses carried out for this working paper suggest that staff's levels of self-efficacy in this area are rarely associated with the diversity profile of children in centres. When looking at staff's beliefs about their ability to support the development of children from disadvantaged backgrounds, in most participating countries no differences are observed in the percentage of staff reported self-efficacy between centres with high and low shares of children from socio-economically disadvantaged homes. However, differences indicating a greater sense of self-efficacy among pre-primary staff in centres with a high share of socio-economically disadvantaged children are found in Norway, and among staff working in centres for children under age 3 in Germany (Table A.28). Another survey item exploring these beliefs relates to staff's self-perceived ability in adapting their work to individual child needs. Yet, when the percentage of staff reporting high confidence in this is compared between centres with high and low shares of children with special education needs, no meaningful differences are observed across participating countries neither at the pre-primary level nor in centres for children under age 3 (Table A.28).

Results about staff self-efficacy beliefs therefore align with those about centre-level attitudes towards diversity, suggesting that the composition of children's populations in ECEC centres is not associated with any within-country variation in staff's sense of self-efficacy for working with children from diverse backgrounds. It is thus possible that other factors, including both general diversity-related attitudes in national culture as well as individual training and experience, have a stronger bearing on staff professional attitudes

and beliefs about diversity than the actual diversity profiles of the children they interact with in their current centres.

5.2. Practices with children

5.2.1. Staff's adaptive practices in the target group

The TALIS Starting Strong survey asks staff to report on their use of adaptive pedagogical practices, such as setting daily goals for children, or giving different activities to suit different children's interests, with reference a "target group" of children¹¹. The items from that question are combined into the staff scale of adaptive practices (see Annex C in (OECD, 2019_[8]). Moreover, the survey asks staff to estimate the broad percentage of children in the target group to whom apply different dimensions of diversity, in the same way as this is asked to centre leaders regarding the proportion of diverse children at the centre level. Hence, it is possible to use the scale to examine whether staff tend to employ adaptive pedagogical practices more or less often when working with groups of children with different diversity profiles.

Results suggest that, in many countries, staff tend to make a greater use of adaptive practices when working with groups including a high share of children from diverse backgrounds, in particular in relation to socio-economic disadvantage and to special education needs (Table 2 and Tables A.29 and A.30). Staff are more likely to adapt their practices when more than 10% of the children in their target group come from socio-economically disadvantaged homes in Chile, Germany (at both levels), Iceland, Israel (at the pre-primary level) and in Norway (in centres for children under age 3). Higher values on the scale of adaptive practices are also observed for staff working with groups where more than 10% of the children have special education needs in Denmark (with low response rates, at both levels), Germany (at the pre-primary level), Iceland, Israel (in centres for children under age 3) and Norway (at the pre-primary level). In Norway (at both levels) and Iceland, staff working with greater shares of children with a different first language tend to report higher use of adaptive practices, as do staff working with higher shares of children who are refugees in Norway (at both levels). No significant differences are observed in Japan, Korea or Türkiye, where levels of diversity in children's populations in ECEC are generally lower (Table A.29).

¹¹ This is defined as the first group of children that staff worked with on the last working day before taking the survey.

Table 2. Staff adaptive practices and dimensions of diversity in groups within early childhood education and care centres

Differences in the scale of staff adaptive pedagogical practices at the target group level¹, by dimensions of diversity^{2,3}

	+	-	Difference is not statistically significant		Missing values	
	More adaptive practices in more diverse groups Less adaptive practices in more diverse groups					
Difference in the scale of staff adaptive practices between target groups with/where¹:						
	>10% of children vs. <=10% of children	>10% of children vs. <=10% of children	>10% of children vs. <=10% of children	>10% of children vs. <=10% of children	Two or more vs. None	Two or more vs. One
	from socio- economically disadvantaged homes ²	with special education needs ²	with a different first language ²	who are refugees ²	dimensions of diversity apply to more than 10% of children ³	dimensions of diversity apply to more than 10% of children ³
Pre-primary education (ISCED 02)						
Chile	+					
Germany*	+	+				
Iceland	+	+	+		+	
Israel	+					
Japan						
Korea						
Norway		+	+	+	+	
Türkiye						
Centres for children under age 3^a						
Germany*	+					
Israel		+	-			
Norway	+		+			

Notes:

a. Data for early learning settings with children under age 3 are limited to centre-based settings to ensure comparability with ISCED Level 02. Data from home-based settings are excluded. * Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. For more information, see Annex B in (OECD, 2019_[8]). ¹ The scale of “adaptive pedagogical practices with children” reflects practices used by staff with the target group (i.e., the children in the group that they worked with on their last working day before the survey). The scale was constructed using ECEC staff responses about the frequency with which they engaged in the following activities with the children: “I set daily goals for the children”, “I explain how a new activity relates to children’s lives”, “I give different activities to suit different children’s interests”; “I give different activities to suit different children’s level of development”; “I adapt my activities to differences in children’s cultural background”. For more information, see Annex C in (OECD, 2019_[8]). ² Dimensions of diversity refers to children from socio-economically disadvantaged homes, children with special education needs, children with a different first language, and children who are refugees. For full definitions, see previous Figures in the publication. ³ Several dimensions of diversity may accumulate in target groups when each of these dimensions, considered separately, applies to more than 10% of the children in the group.

Missing values imply that countries have too few or no observations in a given response category to provide reliable estimates and/or to ensure the confidentiality of respondents. For more information on significance tests, see Annex C in (OECD, 2019_[8]).

Source: OECD (2019_[24]), TALIS Starting Strong 2018 Database, Tables A.29 and A.30.

However, the accumulation of dimensions of diversity in target groups is not as consistently associated with greater use of adaptive practices: when staff working with highly diverse groups are compared to peers working with groups where no dimension of diversity applies, only in Denmark (with low response rates, in centres for children under age 3), Iceland and Norway (at the pre-primary level) are adaptive practices more commonly reported by staff. When the comparison is made between groups of children where multiple dimensions of

diversity apply as opposed to one dimension only, no differences are observed except in Denmark (with low response rates, in centres for children under age 3) (Table A. 30).

Overall, significant differences in the degree of use of adaptive practices suggest more reliance on such practices when staff work with more diverse groups of children. In many participating countries, staff appear to adapt their pedagogical practices to a greater extent when working with groups with higher shares of children from diverse backgrounds, albeit not necessarily with respect to all the dimensions of diversity. Moreover, the accumulation of these dimensions in target groups does not appear to entail greater adaptation in practices with children. Iceland and Norway (at both levels) are the countries where staff practices appear to be most responsive to the diversity profiles of the groups of children they work with.

5.2.2. Staff's facilitation of literacy, numeracy, and socio-emotional development

TALIS Starting Strong gathers information on multiple dimensions of process quality, making it possible to examine whether staff in different countries tend to cover all the dimensions in their practices or focus on some of them. One of these dimensions relates to the development of foundational cognitive skills, with two indicators that build on practices used at the centre level (as reported by staff) to facilitate children's literacy and numeracy development¹². Another of the dimensions concerns socio-emotional development, with two other indicators based on practices used at the centre level (as reported by staff) to facilitate children's emotional development and prosocial behaviour¹³.

Previous reporting examined the relationships between different dimensions of process quality and found larger correlations among indicators within rather than between different dimensions. On average across participating countries at the pre-primary level of education, staff who report that practices to support literacy development are largely used in the centre tend also to report widespread use of practices to support numeracy development in their centres. Albeit smaller, another sizeable correlation is also observed practices that facilitate emotional development and those that facilitate prosocial behaviour. By contrast, correlations were smaller between indicators across these domains, suggesting that practices to support children's literacy or numeracy development are not always used in conjunction with practices to facilitate children's emotional development or prosocial behaviour (OECD, 2019, pp. 72-75_[8]).

Drawing on the same set of indicators, new analyses carried out for this working paper explore whether ECEC centres with different diversity profiles put more emphasis of specific aspects of children's development (i.e., cognitive or socio-emotional). It should be noted that these analyses consider the diversity of children at the centre level, thus different from the results above regarding adaptive practices at the target group level.

Overall, results suggest no or weak associations between practices aimed at facilitating different aspects of children's development and the diversity of children's populations in ECEC centres (Tables A.31 to A.38). In most cases, differences in the reported use of specific practices between more and less diverse ECEC centres are not statistically significant. The only exception to this general pattern are the results observed for the scale

¹² These include several practices to immerse children in literacy and numeracy activities and to also offer opportunities for cognitive development. For further details, see Annex C in (OECD, 2019_[8]).

¹³ The scale of facilitating socio-emotional development includes several practices on helping children to talk about feelings; and the scale of facilitating prosocial behaviour includes practices to encourage children to care about others. For further details, see Annex C in (OECD, 2019_[8]).

of facilitating prosocial behaviour at the pre-primary level in Chile, Denmark (with low response rates), Germany, Iceland and Israel. In these countries, staff in centres with higher shares of children on some of the dimensions of diversity or where several dimensions accumulate report less extensive use of practices aimed at developing children's prosocial behaviour than staff in less diverse centres (Tables A.37 and A.38). In Chile, the same holds regarding the scale of facilitating children's emotional development (Tables A.35 and A.36). Overall, however, there is little indication across participating countries that the diversity profiles of their ECEC centres is associated with a tendency of staff to put a stronger or weaker focus on practices that would target specific aspects of children's early development, such as their cognitive or socio-emotional skills.

5.2.3. Centre-level multicultural practices

TALIS Starting Strong asks staff about the extent to which activities and practices that acknowledge the diversity of children happen in their centre as part of daily interactions with children. The literature suggests that practices emphasising the diversity of children and not referring exclusively to the dominant culture can lead to more inclusion. Prior results indicate that, across participating countries, a majority of staff in pre-primary centres report that it is more common for centres to provide diverse materials (such as books, pictures or toys showing people from different ethnic/cultural groups) than to organise activities emphasising what people from different ethnic and cultural groups have in common. According to staff, it is also less common for centres to facilitate children's play with toys and artefacts from cultures other than the ethnic majority. The same pattern holds for centres for children under age 3 (OECD, 2019_[8]).

New analysis suggests that, in several participating countries, the percentage of staff reporting that the use of books and pictures featuring people from a variety of ethnic and cultural groups happens "to some extent" or "a lot" in their ECEC centre is higher in centres with high shares of children with a different first language, compared to centres with low shares. This is the case in pre-primary centres in Germany, Iceland and Israel, with differences ranging between 13 and 19 percentage points, as well as in centres for children under age 3 in Germany and Norway, with differences ranging between 23 and 26 percentage points (Table A.39).

5.3. Engagement with families, communities and other services

Aspects of the interactions of ECEC staff and centre leaders with children's families and communities are of importance for examining the quality of ECEC, in particular that provided to children of diverse backgrounds. Disadvantaged children can experience greater benefits to their cognitive and socio-emotional development from family involvement in ECEC centres' activities than their advantaged peers, provided that quality interactions with ECEC centres support families in improving home learning environments for children. ECEC engagement with local communities and partnerships with other services for children and families can likewise support child development. Comprehensive and integrated systems that include formal ECEC providers, day care, health services and other child services can work together to create a continuum of supports that addresses the multiple needs of families, which can be particularly important for children in vulnerable circumstances (OECD, 2022_[2]; Sim et al., 2019_[22]). Co-operation between ECEC centres and other community services can also be instrumental in smoothing transitions between different early childhood settings and from early childhood education and care to primary school, both of which can positively influence children's educational trajectories (OECD, 2017_[31]).

This sub-section draws on TALIS Starting Strong 2018 to explore the extent to which ECEC centres in participating countries engage with families and cooperate with other services (e.g., child development specialists, health-related services), and whether such practices vary according to the diversity profiles of ECEC centres.

5.3.1. Family engagement

While high percentages of ECEC staff and centre leaders in all participating countries report that practices to engage with families are well established in their centre (OECD, 2019^[8]), it is worth examining whether levels of engagement vary between more and less diverse ECEC centres.

New results indicate that, in some countries, the percentage of leaders reporting that parents or guardians are involved in the ECEC centre's activities "quite a bit" or "a lot" tends to be lower in ECEC centres with higher shares of children from more diverse backgrounds. In Chile, Germany (at both levels) and Norway (at both levels), family involvement in centre activities is reported to be lower in centres with high shares of children from socio-economically disadvantaged homes than in centres with low shares of these children. The same pattern is observed when comparing centres with high and low shares of children with special education needs in Chile and Türkiye, and when comparing centres with high and low shares of children with a different first language in Chile, Germany (at both levels) and Türkiye. Most of these differences are relatively large in magnitude, ranging between 15 and 55 percentage points in the share of leaders reporting a strong involvement from parents and guardians in centres' activities (Table A.40).

Results also suggest that differences in parental/guardian involvement are most pronounced between centres where two or more dimensions accumulate and centres where no dimension of diversity applies to more than 10 percent of the children: these differences are observed in Chile, Germany (at both levels), Norway (in centres for children under age 3), and Türkiye, and range between 25 and 40 percentage points. The accumulation of dimensions of diversity also appears to be associated with lower parental/guardian involvement in centre activities when the comparison is made with centres where a single dimension applies, as reported by leaders of centres for children under age 3 in Germany and Norway, and by pre-primary centre leaders in Denmark (with low response rates) (Table A.41).

In addition to surveying leaders on the strength of parental/guardian involvement in centres' activities, TALIS Starting Strong 2018 provides information on staff's perceptions of the extent to which their ECEC centres facilitate parental/guardian engagement. Staff are asked to express their relative agreement with the following statements in relation to their centres: "Parents or guardians can get in touch with ECEC staff easily", "Parents or guardians are informed about the development, well-being, and learning of their children on a regular basis", "Parents or guardians are informed about daily activities on a regular basis" and "Parents or guardians are encouraged by ECEC staff to do play and learning activities with their children at home". Answers to these four items are summarised in a scale describing ECEC centres' facilitation of family engagement (see Annex C in (OECD, 2019^[8])).

Differences in the values of this scale can then be compared between centres with different diversity profiles (Table 3 and Tables A.42 and A.43). Generally, results do not indicate a strong association between staff-reported practices to facilitate family engagement and the diversity of children's populations in ECEC centres. Only in Chile and in Germany (in centres for children under age 3) do centres with more than 10% of children from socio-economically disadvantaged homes report lower levels of facilitation of engagement. For both countries, results apply also to the accumulation of dimensions of diversity.

Table 3. Facilitation of family engagement and dimensions of diversity in early childhood education and care centres

Differences in the scale of facilitation of family engagement at the ECEC centre level¹, by dimensions of diversity^{2,3}

	+					
	-	More facilitation in more diverse centres				
		Less facilitation in more diverse centres				
		Difference is not statistically significant				
		Missing values				

Difference in the scale of facilitation of family engagement between ECEC centres with/where:					
>10% of children vs. <=10% of children	>10% of children vs. <=10% of children	>10% of children vs. <=10% of children	>10% of children vs. <=10% of children	Two or more vs. None	Two or more vs. One
from socio-economically disadvantaged homes ²	with special education needs ²	with a different first language ²	who are refugees ²	dimensions of diversity apply to more than 10% of children ³	dimensions of diversity apply to more than 10% of children ³
Pre-primary education (ISCED 02)					
Chile	-			-	
Germany*					-
Iceland					
Israel					
Japan					
Korea					
Norway					
Türkiye					
Centres for children under age 3^a					
Germany*	-			-	
Israel					
Norway					

Notes:

a. Data for early learning settings with children under age 3 are limited to centre-based settings to ensure comparability with ISCED Level 02. Data from home-based settings are excluded. * Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. For more information, see Annex B in (OECD, 2019^[8]). ¹ The scale of “facilitating engagement or parents/guardians” reflects practices used at the centre level, according to staff. The scale was constructed using ECEC staff responses about the extent to which the following apply to their ECEC centre: “Parents or guardians can get in touch with ECEC staff easily”; “Parents or guardians are informed about the development, well-being and learning of their children on a regular basis”; “Parents or guardians are informed about daily activities on a regular basis”; “Parents or guardians are encouraged by ECEC staff to play and do learning activities with their children at home”. For more information, see Annex C in (OECD, 2019^[8]). ² Dimensions of diversity refers to children from socio-economically disadvantaged homes, children with special education needs, children with a different first language, and children who are refugees. For full definitions, see previous Figures in the publication. ³ Several dimensions of diversity may accumulate in target groups when each of these dimensions, considered separately, applies to more than 10% of the children in the group.

Missing values imply that countries have too few or no observations in a given response category to provide reliable estimates and/or to ensure the confidentiality of respondents. For more information on significance tests, see Annex C in (OECD, 2019^[8]).

Source: OECD (2019^[24]), TALIS Starting Strong 2018 Database; Tables A.42 and A.43.

Overall, results regarding levels of parental/guardian involvement in centres’ activities (as reported by centre leaders) (Table A.41) and centre-level practices to facilitate family engagement (as reported by staff) (Tables A.42 and A.43) point in the same direction, suggesting weaker family engagement in ECEC centres serving more diverse children’s populations as well as a lack of targeted practices to promote this engagement. The results cannot elucidate the reasons behind these lower levels of engagement, which may come from the two parties in this two-way relationship (i.e., families, on the one hand, and ECEC

centres, on the other) and include both objective and perceived difficulties for communication and mutual understanding related to language or cultural differences; to circumstances making it difficult for families to find time to participate in centre activities; and/or to limited resources and competences on the side of staff and centre leaders for effectively engaging with families from diverse backgrounds.

5.3.2. Co-operation with child, family or social services at the centre-level

Results from TALIS Starting Strong 2018 indicate that the percentage of ECEC centres cooperating with child, family, or social services (e.g., child protection agency, family support services) on a regular basis (“monthly”, “weekly”, or “daily”) varies across participating countries. At the pre-primary level, such frequency of co-operation is reported by 55% of centre leaders in Denmark (with low response rates), by 40% of leaders in Chile, and by less than 15% of their peers in Israel, Japan, Korea or Türkiye. In centres for children under age 3, the percentage ranges between 62% of leaders in Denmark (with low response rates) and 24% of leaders in Germany (Figure 10. and Table A.44).

Moreover, in several participating countries, frequent co-operation with child, family or social services is more commonly reported by leaders of more diverse centres than by leaders of less diverse centres (Figure 10). In Chile, Germany and Iceland, this difference ranges between 19 and 37 percentage points regarding centres with high and low shares of children from socio-economically disadvantaged homes.

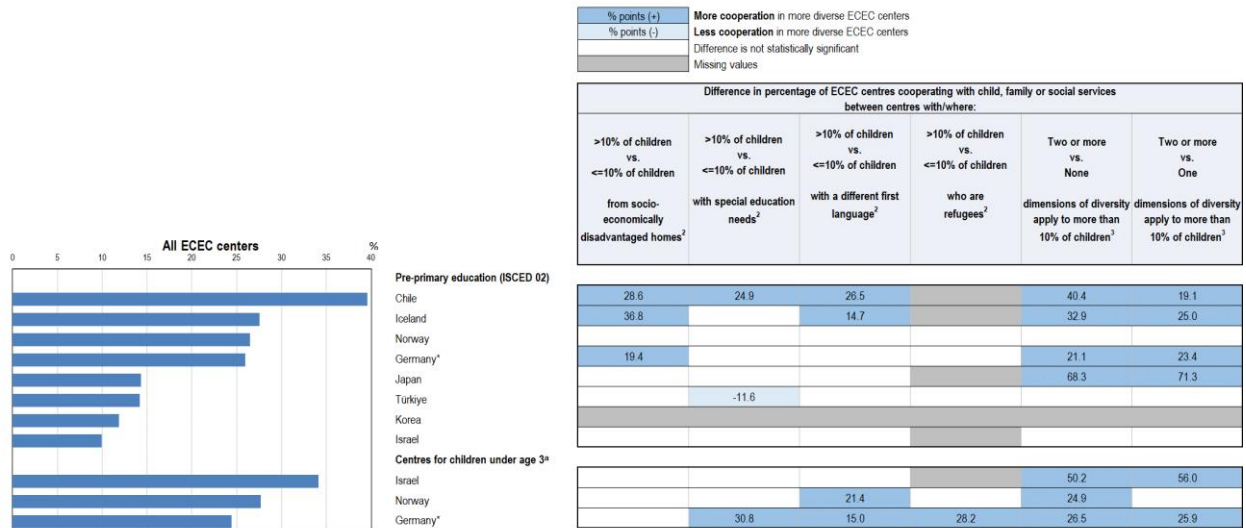
When comparing ECEC centres with high and low shares of children with special education needs, more frequent co-operation with other services is reported by leaders of more diverse pre-primary centres in Chile, and by leaders of centres for children under age 3 in Denmark (with low response rates) and in Germany. The opposite is observed in Türkiye, although in this country the overall proportion of diverse centres on this dimension is very low (Tables A.2 and A.44).

In Chile and Iceland, more leaders in pre-primary centres with high shares of children with a different first language report regular co-operation with child, family or social services than leaders in less linguistically diverse centres. The same holds in centres for children under age 3 in Denmark (with low response rates), Germany and Norway. And in centres for children under age 3 in Germany, co-operation with external services is also more extended among centres with high shares of children who are refugees (Table A.44).

This pattern of results is even more pronounced in comparisons regarding ECEC centres where two or more dimensions of diversity apply to more than 10% of the children. Large and significant differences are observed in this direction in Chile, Denmark (with low response rates), Germany (at both levels), Iceland, Israel (in centres for children under age 3), Japan and Norway (in centres for children under age 3) (Figure 10. and Table A.45). This suggests that the accumulation of dimensions of diversity in ECEC is associated with challenges and needs that require more comprehensive and integrated systems involving agencies in multiple sectors and/or supports external to ECEC centres.

Figure 10. Co-operation with child, family and social services and dimensions of diversity in early childhood education and care centres

Percentage of ECEC centres cooperating with child, family or social services on a monthly basis or more often¹, by dimensions of diversity^{2,3}



Notes:

a. Data for early learning settings with children under age 3 are limited to centre-based settings to ensure comparability with ISCED Level 02. Data from home-based settings are excluded. * Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. For more information, see Annex B in (OECD, 2019_[8]). ¹ Based on reports from ECEC centre leaders about the frequency with which the centre cooperates with child, family or social services (e.g., child protection agency, family support services). ² Dimensions of diversity refers to children from socio-economically disadvantaged homes, children with special education needs, children with a different first language, and children who are refugees. For full definitions, see previous Figures in the publication. ³ Several dimensions of diversity may accumulate in target groups when each of these dimensions, considered separately, applies to more than 10% of the children in the group.

Missing values imply that countries have too few or no observations in a given response category to provide reliable estimates and/or to ensure the confidentiality of respondents. For more information on significance tests, see Annex C in (OECD, 2019_[8]).

Source: OECD (2019_[24]), TALIS Starting Strong 2018 Database, Tables A.44 and A.45.

5.3.3. Work with the local neighbourhood at the centre-level

When the same analysis is carried out regarding the frequency with which ECEC centres work (“quite a bit” or “a lot”, based on reports from centre leaders) with the local neighbourhood, results suggest a very weak association with centres’ diversity profiles. The only consistent differences emerge from the comparison between centres for children under age 3 with high and low shares of children whose first language is different from the language(s) used in the ECEC centre. On this dimension, a smaller percentage of leaders in more diverse centres in Germany, Israel and Norway report working with local communities. Overall, however, centres’ dimensions and levels of diversity do not appear to bear a relationship with their propensity to work with their local neighbourhoods (Tables A.46 and A.47).

6. Policy pointers

ECEC can help give all children, and particularly those from less favourable backgrounds, a strong start in life. But to fulfil this promise, children from all backgrounds must have equal access to high-quality learning and development opportunities. Furthermore, building on ECEC to compensate for the disadvantages or greater educational needs that some children have because of their backgrounds involves allocating more resources to some children or ECEC centres.

TALIS Starting Strong 2018 provides insights into the extent to which participating countries promote equity and inclusion goals in ECEC. While countries face very different circumstances and challenges, the results reported in this Working Paper point to some areas that policymakers can address to ensure high-quality early childhood education and care opportunities for all. Policy considerations for countries can include:

- **Identify the factors behind the concentration of diverse children in ECEC centres and explore policies to reduce it.** In many participating countries, a sizeable proportion of ECEC centres have high concentrations (30% or more) of children from a diverse background. Moreover, in most countries there is also a substantial proportion of centres where two or more dimensions of diversity apply to more than 10% of children in the centre. Different mechanisms may drive these patterns. Diverse children may concentrate in certain ECEC centres due to factors such as residential segregation or centres' admissions policies, but also in response to some centres being better prepared to work with diverse children by virtue of having more or better adapted resources, for instance specialised staff. Further, these two forms of concentration (i.e., centres with high shares of children with similar backgrounds, and centres where several dimensions of diversity apply) may also require different responses for ensuring equity and inclusion. Countries can explore policies to reduce concentration when not driven by centres' capacity to respond to children's needs, bearing in mind that changing the distribution of children's populations in ECEC centres may require coordination with other policy areas. When concentration is driven by an explicit policy to group diverse children and allocate more resources to the centres they attend, care is needed to ensure that these policies do not lead to unintended consequences such as the stigmatisation of ECEC centres. An alternative policy direction would consist in reducing the concentration of children from disadvantaged backgrounds or with special education needs within ECEC centres and attaching resources to individual children rather than ECEC centres as a whole (e.g., a centre receives a share of the working time of a specialised staff member, who works in different centres, to support a particular child or group of children in the centre), so as to avoid stigmatisation effects as well as placing excessive demands on some centres or staff.
- **Ensure that more diverse ECEC centres are adequately resourced according to their specific needs.** Across participating countries, ECEC centres serving more diverse children's populations report greater shortages of resources, in particular with respect to material resources. The accumulation of dimensions of diversity within centres is also associated with a stronger perception of inadequate resourcing. This finding suggests that diverse ECEC centres might require a greater amount of resources than those they are currently allocated to be able to provide high-quality ECEC for the children that attend them. In parallel to investigating directions to lower the concentration of diverse children in some centres, policies should reduce any mismatch between required and allocated resources considering

the particular needs of the most diverse centres, which can vary according to the profiles of their populations of children.

- **Ensure that ECEC centre staff composition, experience and training support the provision of high-quality experiences to all children.** Specialised staff and staff with training on working with diverse children are more often present in centres with high shares of diverse children, which points towards policies that are responsive to the diversity of children's needs. In contrast, no relationship was found between the concentration of diverse children in ECEC centres and the number of staff per ten children or the experience and initial qualification of staff working in those centres. Ensuring that ECEC centres serving highly diverse populations of children have more experienced or better qualified staff than less diverse centres aligns with the objective of building on ECEC to compensate for the disadvantages or greater needs that some children can have in relation of their backgrounds. These efforts can be furthered by setting up teams of staff with highly specialised profiles and the responsibility to support children with particularly challenging needs across multiple centres, independently of whether these are centres with high or low concentrations of diverse children.
- **Encourage practices with children that adapt to their needs and recognise the value of diversity in all centres.** In many participating countries, ECEC staff make greater use of adaptive practices when working with diverse groups of children. At the same time, previous reporting on TALIS Starting Strong 2018 indicated that, in most participating countries, training on working with children with special education needs and with dual language learners are areas for which the largest percentages of staff reported needing more professional development. Countries can provide additional support and training to ECEC centres and staff to strengthen the responsiveness of practices to children's needs. Concerning practices that raise children's awareness of diversity and value diversity, it is important that these practices are used in all centres and not only in those with high concentrations of diverse children.
- **Support the engagement with families and communities and co-operation with other services, especially in centres with high concentration of diverse children.** Levels of family involvement tend to be lower in ECEC centres serving more diverse populations of children. ECEC systems can promote equity and inclusion by strengthening engagement with families from diverse backgrounds, including by building on the higher frequency of co-operation with child, family and social services that tends to characterise more diverse ECEC centres. In all centres, the importance of involving families, especially those from disadvantaged backgrounds, should be recognised and supported. In centres with high concentration of diverse children, higher resources and training of teams could support staff parental engagement practices.
- **Maintain high-quality ECEC for all children as the overarching goal of equity and inclusion policies.** Policies aimed at equalising opportunities and promoting inclusion in ECEC should be driven by the ambition to strengthen quality drivers in areas or centres where they are less solidly grounded, rather than by merely reducing differences in quality across centres that serve different populations of children.

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Annex A. Tables available online

Supporting tables with results discussed in this Working Paper are available in electronic form only:

Table A A.1. Supporting tables for Levelling the playing field in ECEC: Results from TALIS Starting Strong 2018

The tables are available at this link .	
Table A.1	Children from socio-economically disadvantaged homes in early childhood education and care centres
Table A.2	Children with special education needs in early childhood education and care centres
Table A.3	Children with a different first language in early childhood education and care centres
Table A.4	Refugee children in early childhood education and care centres
Table A.5	Accumulation of dimensions of diversity in early childhood education and care centres (>10% threshold)
Table A.6	Accumulation of dimensions of diversity in early childhood education and care centres (>30% threshold)
Table A.7	Dimensions of diversity and centre location in early childhood education and care centres
Table A.8	Accumulation of dimensions of diversity and centre location in early childhood education and care centres
Table A.9	Dimensions of diversity and centre type of management in early childhood education and care centres
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Table A.11	Shortages of material resources and dimensions of diversity in early childhood education and care centres
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Table A.22	Staff pre-service training on addressing diversity and dimensions of diversity in early childhood education and care centres
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Table A.24	Staff cumulative (pre-service plus in-service) training on addressing diversity and dimensions of diversity in early childhood education and care centres
Table A.25	Staff cumulative (pre-service plus in-service) training on addressing diversity and accumulation of dimensions of diversity in early childhood education and care centres
Table A.26	Staff responsiveness to children's cultural differences and dimensions of diversity in early childhood education and care centres
Table A.27	Staff responsiveness to children's cultural differences and accumulation of dimensions of diversity in early childhood education and care centres
Table A.28	Staff sense of self-efficacy for working with diverse children and dimensions of diversity in early childhood education and care centres
Table A.29	Staff adaptive pedagogical practices and dimensions of diversity in early childhood education and care centres
Table A.30	Staff adaptive practices and accumulation of dimensions of diversity in early childhood education and care centres
Table A.31	Staff facilitation of children's literacy development and dimensions of diversity in early childhood education and care centres
Table A.32	Staff facilitation of children's literacy development and accumulation of dimensions of diversity in early childhood education and care centres
Table A.33	Staff facilitation of children's numeracy development and dimensions of diversity in early childhood education and care centres
Table A.34	Staff facilitation of children's numeracy development and dimensions of diversity in early childhood education and care centres
Table A.35	Staff facilitation of children's emotional development and dimensions of diversity in early childhood education and care centres

Table A.36	Staff facilitation of children's emotional development and accumulation of dimensions of diversity in early childhood education and care centres
Table A.37	Staff facilitation of children's prosocial behaviour and dimensions of diversity in early childhood education and care centres
Table A.38	Staff facilitation of children's prosocial behaviour and accumulation of dimensions of diversity in early childhood education and care centres
Table A.39	Staff use of materials featuring people from a variety of ethnic and cultural groups and share of children with a different first language in early childhood education and care centres
Table A.40	Families' involvement in centres' activities and dimensions of diversity in early childhood education and care centres
Table A.41	Families' involvement in centres' activities and accumulation of dimensions of diversity in early childhood education and care centres
Table A.42	Facilitation of family engagement and dimensions of diversity in early childhood education and care centres
Table A.43	Facilitation of family engagement and accumulation of dimensions of diversity in early childhood education and care centres
Table A.44	Co-operation with child, family or social services and dimensions of diversity in early childhood education and care centres
Table A.45	Co-operation with child, family or social services and accumulation of dimensions of diversity in early childhood education and care centres
Table A.46	Work with the local neighbourhood and dimensions of diversity in early childhood education and care centres
Table A.47	Work with the local neighbourhood and accumulation of dimensions of diversity in early childhood education and care centres