TALIS

Building a High-Quality Early Childhood Education and Care Workforce

FURTHER RESULTS FROM THE STARTING STRONG SURVEY 2018

OECD

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OECD
BETTER POLICIES FOR BETTER LIVES

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Foreword

Policy makers increasingly recognise the need to invest in early childhood education and care (ECEC) so that all children have a strong start. Investing in the early years means, first and foremost, investing in the professionals who work with children in ECEC settings, since they matter more than anything else in children's lives outside their families. They shape children's first experiences outside their home into enriching and happy activities and help children to develop and learn.

However, many countries stumble in building, attracting and retaining a high-quality workforce in the sector. Relatively low status, low wages and stereotypes about the profession often deter good candidates to join the sector. To meet a growing demand for high-quality ECEC professionals, countries will need to work harder, not just to make ECEC jobs financially more attractive but also – most importantly – to make them intellectually more appealing, so that highly motivated staff and centre leaders feel supported, have opportunities to develop their skills, and can work with a high level of professional autonomy within a collaborative culture. These are the topics explored in this second volume on the results the OECD Starting Strong Teaching and Learning International Survey (TALIS Starting Strong), which collected data in 2018 from ECEC staff and centre leaders in nine OECD countries.

The survey shows that high standards for ECEC initial preparation programmes with some practical training can not only prepare new staff for their work with children, but also provide a basis for skills development throughout their careers. In addition to broad participation in in-service training, the quality of training matters. Dimensions of quality that relate to staff practices with children include the thematic breadth of training and opportunities to deepen knowledge acquired in initial preparation through ongoing professional development. What is more, training and informal learning through collaboration with colleagues can reinforce each other, as two key avenues through which ECEC professionals can develop their skills throughout their career.

The survey also shows that ECEC staff are generally confident about their ability to promote children's socio-emotional development, but less so about working with a diverse group of children and using digital technology to support children's learning. As demands increase on ECEC staff to address diversity and to foster an effective and safe use of technology, be it in their pedagogical work or in communication with parents, these are areas of training that can be prioritised by policies.

More generally, ECEC staff show a high level of satisfaction with the profession, but their views on the working conditions are less positive. Low satisfaction with salaries, limited opportunities for career progression, and limited human and material resources in ECEC centres are often associated with staff disengagement with work and stress. Tight financial constraints in many countries, which are likely to be exacerbated in the years to come following the COVID-19 pandemic, means that there will be limited room for higher salaries or additional resources in centres, for instance to reduce the number of children per staff. The report points to alternative pathways to help staff cope with various sources of stress that do not necessarily lead to direct fiscal cost, although they require a well-thought out and well-designed policy effort to deliver effects. This includes support from leaders, a co-operative climate, effective training and autonomy at work.

For any firm or institution, leadership is considered a key determinant of the organisational climate, and the quality and efficiency of service delivery. Yet leadership and management practices in ECEC centres have thus far attracted little attention from both researchers and policy makers. This report shows that when leaders spend more time on pedagogical functions, staff adopt attitudes and practices linked to quality in ECEC settings. When staff perceive more opportunities for participating in centre decisions, they co-operate more with colleagues and report greater satisfaction with their job. Leaders themselves need to be supported and trained for their job. Collaboration with national or local institutions is clearly an area for further improvement, as centre autonomy can be limited and responsibilities shared between leaders and authorities. Leaders identify national/local policies as an area for high training need and changing regulations as an important source of stress in their work.

The major promise of high-quality ECEC is to give all children effective opportunities to learn and develop. TALIS Starting Strong points to both hope and concern. On the one hand, ECEC staff training profiles respond to the diversity of children in ECEC settings: staff who work with a higher diversity of children are trained to work with children from diverse backgrounds. However, engagement with parents, which is so important for children from diverse backgrounds, is more frequent in centres with a larger diversity of children only in a tiny number of countries. And staff in more challenging centres are not systematically supported with appropriate working conditions.

As most countries will face significant financial pressures following the COVID-19 pandemic, the risks are high that investment in children's early years takes a back seat as other priorities appear more urgent. At the same time, the financial fragility of the ECEC sector may discourage potential candidates or current staff to join or remain in the profession. Thus, past investment and progress in providing a better foundation for the well-being of children could be compromised. TALIS Starting Strong provides an empirical foundation for policy makers to make the right strategic choices and develop effective policies and practices to secure a high-quality ECEC workforce to support the next generation. Nothing could be more important. While children are just a small percentage of our populations, they are 100% of our future.

Andreas Schleicher,

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Special Advisor on Education Policy to the Secretary General

Acknowledgements

The OECD Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) is the outcome of a collaboration among the participating countries, the OECD Secretariat, and the International Association for the Evaluation of Educational Achievement (IEA) with its international consortium partners RAND Europe and Statistics Canada.

The development of this report was guided by Andreas Schleicher and Yuri Belfali and led by Stéphanie Jamet. Carlos González-Sancho co-ordinated its production; was the lead author of Chapter 1, with Stéphanie Jamet and Thomas Radinger; and wrote Chapter 2. Stéphanie Jamet was the lead author of Chapter 3 with Luisa Kurth. Thomas Radinger wrote Chapter 4. Statistical analyses and outputs were co-ordinated by Elisa Duarte with assistance from Luisa Kurth. Elizabeth Shuey provided feedback throughout the drafting of the volume. Victoria Liberatore also provided input to the project. Mernie Graziotin supported production, project co-ordination and communications. Cassandra Davis and Henri Pearson provided support for report production and communications. Jennifer Allain was the main editor of the report. The development and implementation phases of the survey were led at the OECD by Arno Engel and Miho Taguma.

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Annex D of this report lists the various institutions and individuals that contributed to TALIS Starting Strong.

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Reader's guide

The OECD Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) is the first international survey that focuses on the early childhood education and care (ECEC) workforce.

Data from TALIS Starting Strong were collected in 2018, before the COVID-19 epidemic.

The results referred to in this volume can be found in Annex C and through OECD StatLinks at the bottom of the tables and figures throughout the report.

Country coverage

This publication features results from staff and leaders who provide ECEC in pre-primary settings (ISCED Level 02) in nine countries (Chile, Denmark, Germany, Iceland, Israel, Japan, Korea, Norway and Turkey), as well as from staff and leaders who provide ECEC to children under age 3 in four countries (Denmark, Germany, Israel and Norway).

In the tables throughout the report, countries are ranked in alphabetical order, with one exception: countries that did not meet the standards on TALIS Starting Strong participation rates are placed at the bottom of the tables. Similarly, countries that did not meet the standards on TALIS Starting Strong participation rates are not shown in any figures presenting results of the survey.

One note applies to the information on data for Israel:

- The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Classification of levels of early childhood education and care and the TALIS Starting Strong sample

The classification of ECEC settings as pre-primary or serving children under age 3, as well as the other levels of education described in the volume, is based on the International Standard Classification of Education (ISCED). ISCED is an instrument for compiling statistics on education internationally. ISCED-2011 is the basis of the levels presented in this publication. It distinguishes the following levels of education:

- early childhood education (ISCED l=Level 0)
  - early childhood educational development (ISCED Level 01)
  - pre-primary education (ISCED Level 02)
- primary education (ISCED Level 1)
- lower secondary education (ISCED Level 2)

- upper secondary education (ISCED Level 3)
- post-secondary non-tertiary education (ISCED Level 4)
- short-cycle tertiary education (ISCED Level 5)
- bachelor's or equivalent (ISCED Level 6)
- master's or equivalent (ISCED Level 7)
- doctoral or equivalent (ISCED Level 8).

Within early childhood education (ISCED Level 0), settings classified under ISCED-2011 have an intentional educational component and aim to develop cognitive, physical and socio-emotional skills necessary for participation in school and society. Programmes at this level are often differentiated by age, with early childhood educational development serving children under age 3 and pre-primary education serving children from age 3 until entry into primary school. Pre-primary settings in TALIS Starting Strong meet the ISCED-2011 definition for ISCED Level 02. Settings serving children under age 3 in TALIS Starting Strong were not required to meet the ISCED-2011 definition for ISCED Level 01.

Despite the distinction made by ISCED-2011 within ISCED Level 0, many countries, including several participating in TALIS Starting Strong, offer an integrated ECEC system (see Annex A of the first volume (OECD, 2019[1])). In integrated ECEC systems, a single government ministry or authority oversees ECEC programmes from birth or age 1 until entry into primary school. For countries with integrated ECEC systems that participated in data collection for both pre-primary settings and settings for children under age 3 (i.e. Denmark, Germany and Norway), the TALIS Starting Strong sampling strategy randomly split ECEC programmes that were expected to cover both age groups to be included in the sampling universe for one population of interest or the other. In this way, programmes could be sampled as part of the pre-primary sample or as part of the sample of settings for children under age 3, but the same programme would not be sampled for both levels of ECEC.

Next, staff were sampled within these settings if they were serving children within the designated level of ECEC (see Annex A). As a result, the sample of pre-primary staff and leaders is representative of staff and leaders in settings providing pre-primary education across all nine participating countries, regardless of whether an integrated system exists or not. Similarly, the sample of staff and leaders in settings for children under age 3 is representative of staff and leaders in settings providing services for this age group across all four participating countries, regardless of whether an integrated system exists or not. Home-based settings were included in the samples of settings for children under age 3 in Denmark, Germany and Israel. However, to enhance comparability with pre-primary education settings, data from staff in home-based settings are excluded from this report. These exclusions represent 16% of the sample of settings serving children under age 3 in Denmark, 16% in Germany and 60% in Israel.

The report uses the phrase "both levels of education" as shorthand to refer to pre-primary settings and settings for children under age 3 simultaneously, when referring to results for countries that surveyed staff and leaders in both pre-primary settings and in centres for children under age 3. Readers should bear in mind that the age distinctions in levels of ECEC do not necessarily reflect the organisation of the ECEC system or ECEC programmes in all participating countries (see Annex A of the first volume (OECD, 2019[1])). Furthermore, programmes included in the samples for both levels of ECEC may also serve younger or older children.

The report uses the term "centres" as shorthand to describe all ECEC settings. The specific programmes or settings vary across and within countries (see Box 1 for details on the types of settings covered in each participating country).

Box 1. Early childhood education and care settings included in TALIS Starting Strong

Chile	Kindergartens, pre-schools and schools that offer pre-school education
Denmark	Kindergartens, integrated institutions, nurseries and day-care facilities
Germany	Kindergartens, school kindergartens, pre-school classes, mixed-age early childhood education and care centres, and day nurseries
Iceland	Pre-schools
Israel	Kindergartens and day-care centres
Japan	Kindergartens, nursery centres and integrated centres for early childhood education and care
Korea	Kindergartens and childcare centres
Norway	Kindergartens
Turkey	Pre-schools, kindergarten classrooms and practice classrooms

Notes: The settings listed here are the English translations of the setting types within each country. These translations were used for the purposes of creating the TALIS Starting Strong sampling frame. Home-based settings are also included in the TALIS Starting Strong data collection for children under age 3 in Denmark, Germany and Israel, but they are not included in this report.

Data underlying the report

TALIS Starting Strong results are based exclusively on self-reports from ECEC staff and leaders and, therefore, represent their opinions, perceptions, beliefs and accounts of their activities. No data imputation from administrative data or other studies is conducted. As with any self-reported data, the information is subjective and may, therefore, differ from data collection through other means (e.g. administrative data or observations). The same is true of leaders' reports about centre characteristics, sources of funding and practices, which may differ from descriptions provided by administrative data at national or local government levels. TALIS Starting Strong does not directly measure children's learning, development and well-being and does not provide data collected from children and families participating in ECEC.

Results are presented only when estimates are based on at least 10 centres/leaders and/or 30 staff.

Reporting staff and leader data

As part of the TALIS Starting Strong 2018 data collection, all staff who worked regularly in a pedagogical way with children in officially registered settings providing ECEC in participating countries were eligible to participate.[1] Within ECEC settings, centre co-ordinators identified staff as eligible to participate as a centre leader (the person with the most responsibility for administrative, managerial and/or pedagogical leadership) or in one of several roles working directly with children: teacher, assistant, staff for individual children, staff for special tasks or intern. In some countries, other specific staff roles were also included, but these roles were simultaneously coded to reflect one of the overarching international categories.

The initial assignment of staff to these categories ensured that all staff who were eligible to participate were included in the sample selection process and, if selected, were asked to complete the relevant questionnaire (leader or staff). A combined questionnaire was used for staff in very small centres (i.e. with only one staff member or with only one main teacher and assisting staff). It included suitable questions

both from the staff questionnaire and the leader questionnaire. Respondents who completed these combined questionnaires are included in the data reported for both staff and leaders.

The staff categories used to identify staff eligible for participation were also used after data collection to group respondents according to their overall roles in the ECEC centres, focusing on teachers and assistants. Teachers are those with the most responsibility for a group of children. Assistants support the teacher in a group of children. This distinction is used in many of the tables and analyses that provide a comparison between teachers and assistants (for example, Table C.3.1).

However, several countries do not make a distinction between teachers and assistants in this way. In Japan and Turkey, only teachers work in a pedagogical way with children in ECEC. In Iceland, a shortage of certified ECEC teachers means that staff without this credential (i.e. assistants) may be serving as teachers in some settings. As a result, this overall role distinction in TALIS Starting Strong is not meaningful for Iceland. In centres serving children under age 3 in Israel, fewer than 1% of participating staff were identified as assistants, making the comparison between teachers and assistants impossible for this population as well. In the remaining countries and populations (Chile, Denmark, Germany, Israel in pre-primary education settings, Korea and Norway), the roles of teacher and assistant can, but do not necessarily, reflect differences in staff credentials. Rather, for TALIS Starting Strong, the difference between teachers and assistants is defined to reflect the roles that staff members typically have within their centres.

Reporting staff data

The report uses the term “staff” as shorthand for the TALIS Starting Strong population of teachers, assistants, staff for individual children, staff for special tasks and interns. In addition, leaders who also had staff duties (i.e. those working alone or in very small centres) are included in the staff data throughout this report.

Reporting leader data

The report uses the term “leader” to identify the person who was identified as having the most responsibility for administrative, managerial and/or pedagogical leadership in their centres. Responses from leaders who also had staff duties (i.e. those working alone or in very small centres) are included in both the leader data and the staff data throughout this report. Leaders provided information on the characteristics of their centres and their own work and working conditions by completing a leader questionnaire or a combined questionnaire. Where responses from leaders are presented in this publication, they are usually weighted to be representative of leaders. In some cases, leader responses are treated as attributes of staff working conditions. In such cases, leaders’ answers are analysed at the staff level and weighted to be representative of staff (see Annex B).

Staff reports of their own roles in the target group

In addition to the initial categories used to classify staff for participation in TALIS Starting Strong, staff who participated in the survey had the opportunity to describe their roles within a specific group. Staff were asked to consider the first group of children that they worked with on their last working day before the survey (the target group) and to select the category that best represented their role in that group on that day (leader, teacher, assistant, staff for individual children, staff for special tasks, intern or other). Throughout the report, those who describe themselves as “leaders” and “teachers” are grouped together to describe the staff with the most responsibility in the target group. These staff reports do not necessarily reflect staff members’ broader roles in the ECEC centre, but they provide contextual information for other questions that were asked about the target group.

Reporting data on the number of children

For a subset of questions, staff reported on their work with the target group (the first group of children that they worked with on their last working day before the survey). In some cases, the target group may reflect a stable group of children and adults. In other cases, it may reflect a staff member's full day of work, involving many other staff (e.g. those who join the group for special activities or who come to ensure that the required group ratios are maintained while another staff member takes a break) and perhaps a changing set of children as well.

To better understand the numbers of staff and children that interact together in these target groups, this report refers to the number of staff per child in the target group. With regard to target groups, the "number of staff per child" refers to the total number of staff working in the target group, regardless of their role, divided by the number of children in the target group. See Box 2.3 in the first volume (OECD, 2019[1]) and Annex B for further details on the computation of this indicator.

In addition to reporting the number of staff working in their centres, leaders also report on the number of children enrolled in their centres. To understand the numbers of staff and children that interact together in centres, this report also refers to the number of staff per child in the centre. With regard to centres, the "number of staff per child" refers to the total number of staff working in a centre, regardless of their role, divided by the total number of children enrolled. See Box 4.4 in the first volume (OECD, 2019[1]) and Annex B for further details on the computation of this indicator.

These TALIS Starting Strong indicators on the "number of staff per child" differ from regulated child-to-staff ratios, as they do not take into account factors such as whether staff members are working full time or part time, the number of hours during which each child attends the centre, and the time staff are expected to directly interact with children (versus time when staff may be present at the centre but engaged in other types of work, such as planning or professional development).

International averages

Cross-country averages are provided for pre-primary settings throughout the report. These averages correspond to the arithmetic mean of the nine country estimates.

Symbols used in tables

Five symbols are used to denote non-reported estimates:

- a: The question was not administered in the country because it was optional.
- c: There are too few or no observations to provide reliable estimates and/or to ensure the confidentiality of respondents (i.e. there are fewer than 10 centres/leaders and/or 30 staff with valid data and/or the item non-response rate [i.e. ratio of missing or invalid responses to the number of participants for whom the question was applicable] is above 50%).
- m: Data were collected but subsequently removed for technical reasons (e.g. erroneous translation) as part of the data checking process.
- p: Data were collected but not reported for technical reasons (e.g. low participation rate) as part of the data adjudication process.
- w: Data were withdrawn or were not collected at the request of the country concerned.

Rounding figures

Because of rounding, some figures in tables may not add up exactly to the totals. Totals, differences and averages are always calculated on the basis of exact numbers and are rounded only after calculation.

All standard errors in the publication have been rounded to one, two or three decimal places. Where the value 0.0, 0.00 or 0.000 is shown, this does not imply that the standard error is zero, but that it is smaller than 0.05, 0.005 or 0.0005, respectively.

Statistically significant differences

Statistically significant differences are denoted using different colours in figures and bold font in tables. See Annex B for further information.

Additional data sources

Throughout the report, additional data sources are included to better understand the context of ECEC systems in participating countries. The two primary sources of additional data are the OECD's *Education at a Glance* publication and a new OECD policy survey on *Quality beyond Regulations*. The *Education at a Glance* series provides key information on the organisation of education systems, access to different levels of education and financial resources invested in education, as well as information on the staff and teachers working in education settings. The *OECD Quality beyond Regulations* policy survey provides data on the policies and regulations governing aspects of quality in ECEC settings. It was completed in 2019 by ministries and governing authorities responsible for the oversight of ECEC in countries, including the countries participating in TALIS Starting Strong. This publication presents first findings of the *OECD Quality beyond Regulations* policy survey for countries participating in TALIS Starting Strong.

Abbreviations

- ECEC early childhood education and care
- ISCED International Standard Classification of Education
- PPP purchasing power parity (i.e. the purchasing power of staff salaries using a common currency [USD] to facilitate cross-country comparisons)
- S.D. standard deviation
- S.E. standard error

Further technical documentation

For further information on the TALIS Starting Strong instruments and the methods used, see the *TALIS Starting Strong 2018 Technical Report* (OECD, 2019[2]).

This report uses the OECD StatLinks service. All tables and figures are assigned a URL leading to a corresponding Excel™ workbook containing the underlying data. These URLs are stable and will remain unchanged over time. In addition, readers of the e-books will be able to click directly on these links, and the workbook will open in a separate window if their Internet browser is open and running.

References

OECD (2019), *Providing Quality Early Childhood Education and Care: Results from the Starting Strong Survey 2018*, TALIS, OECD Publishing, Paris, https://dx.doi.org/10.1787/301005d1-en. [1]

OECD (2019), *TALIS Starting Strong 2018 Technical Report*, OECD Publishing, Paris, http://www.oecd.org/education/talis/TALIS-Starting-Strong-2018-Technical-Report.pdf. [2]

Note

1 For detailed information on data collection procedures, please refer to the *TALIS Starting Strong 2018 Technical Report* (OECD, 2019[2]).

Executive summary

Early childhood education and care (ECEC) professionals are those best placed to support children's development, learning and well-being outside of children's homes. This report on the results of the OECD Starting Strong Teaching and Learning International Survey 2018 (TALIS Starting Strong) examines the main factors that can help build a high-quality ECEC workforce. TALIS Starting Strong asks ECEC staff and leaders in nine participating countries (Chile, Denmark, Germany, Iceland, Israel, Japan, Korea, Norway and Turkey) about their characteristics, practices at work and views on the ECEC sector.

What the data tell us

Staff education, training and skills development

- From 64% of ECEC staff in Iceland to 97% in Germany have pre-service training with a focus on working with children. Among these staff, from 45% in Chile to 92% in Japan completed some practical training during their initial preparation programmes. Staff who completed a practical module tended to cover more areas of training.
- In all countries, more than 75% of staff report having participated in recent in-service training activities, but this is more often the case for teachers than assistants, especially in Chile and Israel.
- The quality of in-service training also matters. In all countries, pre-primary staff who covered more areas in both their pre-service and recent in-service training adapt their practices to children's needs and interests more than staff who covered less contents. Cumulative training in a given area is associated with staff sense of self-efficacy for supporting children's development and staff practices with children.
- Across countries, ECEC staff are generally confident about their ability to promote children's socio-emotional development, but less so about working with a diversity of children and using digital technology to support children's learning.
- Centre-embedded models of professional development, such as peer observation or mentoring, remain less common than off-site training activities.
- ECEC staff more engaged in collaborative practices are more likely to participate in training activities, underscoring the synergies between formal and informal channels for skills development. Staff in Norway stand out for their strong engagement in feedback exchanges, joint activities with peers and participation in training.

Staff working conditions and well-being

- ECEC staff show a high level of satisfaction with the profession, but their views on the working conditions in the sector are mixed.
- From 61% of pre-primary staff in Turkey to 90% in Iceland indicate low satisfaction with their salary. Staff indicate retirement, health-related reasons, family responsibilities and work outside of the

ECEC sector as the most likely reasons to leave their job, which suggests that they often envisage limited career progression within the sector.

- From 25% of pre-primary staff in Iceland to 71% in Korea report that they need more support from their ECEC centre leader.
- Sources of stress for the largest percentages of pre-primary staff are a lack of resources, having too many children in the classroom/playgroup/group, having too much work related to documenting children's development and having too much administrative work.
- Feelings of stress emerge from imbalances between job demands, resources and rewards. Support from leaders and satisfaction with salary act as buffers of stress in most of the countries, although not consistently. Training related to the source of stress, collaborative practices and control over decisions are not sufficiently developed or effective to act as significant buffers.
- Shortages of staff create tensions for both staff and leaders in a multiplicity of areas, especially in Germany and Israel (centres for children under age 3) but less so in Denmark (with low response rates), Norway and Turkey.

Leadership and management in ECEC centres

- On average, leaders of pre-primary centres spend around 30% of their time on administrative functions and 20% of their time on pedagogical functions. Pedagogical leadership is positively associated with staff attitudes and practices linked to quality in ECEC settings. Leaders whose initial preparation focused on early childhood and/or pedagogical leadership report more engagement in pedagogical tasks.
- Opportunities for staff to participate in decision making at the ECEC centre are not widespread in all countries. Staff who perceive leadership as being more distributed in their ECEC centre tend to engage more frequently in professional collaborative practices and report greater satisfaction with their job.
- Staff and leaders largely agree in their perceptions about the extent to which leaders succeed in setting a clear vision and goals for the centre, especially in Germany (pre-primary) and Norway (in both levels of education).
- Centre leaders engage frequently with parents or guardians through formal or informal communication, especially in Chile, Iceland and Japan at the pre-primary level, and in Denmark (with low response rates) and Norway (in both levels of education).
- While most leaders are satisfied overall with their jobs, they report relatively low levels of satisfaction with their salaries, in particular in Germany and Israel (in both levels of education), and in Iceland and Japan (pre-primary).

Supporting equal opportunities

- In many participating countries, the share of staff with training for working with children from diverse backgrounds is greater in ECEC centres with a higher diversity of children.
- Differences between centres in terms of the composition of children or availability of resources are only moderately associated with staff working conditions. Staff in more challenging centres are therefore not systematically compensated with better working conditions.
- Engagement with parents is more frequent in centres with a larger diversity of children only in Chile, Iceland and Israel.

What TALIS Starting Strong implies for policies

The findings presented in this report suggest several priority areas for policies:

- Adopt high standards for ECEC initial preparation programmes, and create the conditions to support both formal and informal learning among ECEC professionals.
- Ensure that unfavourable working conditions do not accumulate on some ECEC staff and that the status and reward of ECEC professions are aligned with staff responsibilities.
- Set the conditions for ECEC centre leaders to fulfil their multiple functions, and develop a shared understanding of how leadership can best support quality in ECEC centres.
- Target enhancements in staff professional development and working conditions and in leadership development in ECEC centres with more diverse populations of children.

What is TALIS Starting Strong?

Introduction

The OECD Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) is an international, large-scale survey of staff and leaders in early childhood education and care (ECEC). TALIS Starting Strong uses questionnaires administered to staff and leaders to gather data. Its main goal is to develop robust international information relevant to developing and implementing policies focused on ECEC staff and leaders and their pedagogical and professional practices, with an emphasis on those aspects that promote conditions for children's learning, development and well-being. It gives ECEC staff and leaders an opportunity to share their insights, allowing them to provide input into policy analysis and development in key areas. It is also a collaboration between participating countries, the OECD and an international research consortium. TALIS Starting Strong builds on the OECD's 20 years of experience in conducting ECEC policy reviews in the context of the *Starting Strong* series, the guidance of the OECD Network on Early Childhood Education and Care, and the established TALIS programme collecting data from school principals and teachers.

TALIS Starting Strong seeks to serve the goals of its three main beneficiaries: policy makers, ECEC practitioners and researchers. First, it aims to help policy makers review and develop policies that promote high-quality ECEC, for both professionals in the field and for children. Second, TALIS Starting Strong aims to help staff, leaders and ECEC stakeholders to reflect upon and discuss their practice and find ways to enhance it. Third, TALIS Starting Strong builds upon past research to inform the future work of researchers.

Which countries participate in TALIS Starting Strong?

TALIS Starting Strong 2018 includes nine countries: Chile, Denmark, Germany, Iceland, Israel, Japan, Korea, Norway and Turkey. All of 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.

What is the TALIS Starting Strong Survey about?

TALIS Starting Strong has a cross-cutting focus on equity and diversity in addition to the 11 main areas covered by the survey:

- process quality (the quality of interactions between staff and children and staff and parents/guardians, as well as among children)
- monitoring and assessment of children's learning, development and well-being
- 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)
- pedagogical and administrative leadership
- climate
- stakeholder relations.

More information on the conceptualisation of these areas is available in the *Starting Strong Teaching and Learning International Survey 2018 Conceptual Framework* (Sim et al., 2019[1]).

What are the key features of the TALIS Starting Strong design?

The key features of the TALIS Starting Strong design are as follows:

- **Target sample size:** Minimum of 180 ECEC settings per country and level of ECEC (pre-primary education and settings serving children under age 3).
- **Target response rate for staff:** 75% of the sampled ECEC settings, together with a 75% response rate from staff within participating ECEC settings. An ECEC setting is considered to have participated if 50% of sampled staff within the setting responded to at least one question in the survey.
- **Target response rate for leaders:** 75% of the sampled leaders in the country.
- **Questionnaires:** Separate questionnaires for staff and leaders, each requiring approximately 45 minutes to complete. In addition, a combined questionnaire was used for staff in very small centres (i.e. with only one staff member or with only one main teacher and assisting staff) that included suitable questions from both the staff questionnaire and the leader questionnaire.
- **Mode of data collection:** Questionnaires were completed on paper or on line.
- **Survey windows:** March to May 2018 for countries participating on a northern hemisphere schedule and August to October 2018 for countries participating on a southern hemisphere schedule (with some extensions in both cases).

Further details on the sample for all target populations can be found in Annex A.

What kinds of results does TALIS Starting Strong provide?

TALIS Starting Strong data are based exclusively on self-reports from ECEC staff and leaders and, therefore, represent their opinions, perceptions, beliefs and accounts of their activities. No data imputation from administrative data or other studies is conducted. The views of staff and leaders provide insight into how they perceive the ECEC environments in which they work and how policies in place are carried out in practice. But, as with any self-reported data, this information is subjective and may differ from data collected through other means (e.g. administrative data or observations). The same is true of leaders' reports about ECEC centre characteristics, sources of funding and practices, which may differ from descriptions provided by administrative data at national or local government levels.

In addition, as a cross-sectional survey, TALIS Starting Strong cannot assess causality. For instance, in examining the relationship between staff education and process quality, it is possible to determine the direction (positive, negative) of the association, its strength and statistical significance. It is not possible, however, to establish whether different levels of staff education lead to different levels of process quality or whether centres with different levels of process quality attract staff with different educational profiles.

The report focuses on the quality of ECEC environments, placing children at the centre of analyses. Results from both staff and leaders are included throughout the report, to understand the different aspects of ECEC centres that matter for children's learning, development and well-being. The analyses also aim to draw meaningful international comparisons while acknowledging the complex differences in ECEC systems across participating countries (see Annex A of the first volume (OECD, 2019[2]). Throughout the report, emphasis is put on contextualising the findings by highlighting examples of policies or practices, and also by breaking down results according to contextual variables, for instance whether centres are publicly or privately managed.

How is this report organised?

This report analyses and discusses policy areas that ensure a stable high-quality workforce in the sector.

- **Chapter 1** gives readers an overview of the main findings and policy pointers of the report.
- **Chapter 2** builds on rich information about initial preparation programmes and recent professional development activities to investigate the breadth and alignment of ECEC staff's education and training, alongside their engagement in collaborative professional practices. The chapter also explores the associations between the training trajectories of staff, their sense of self-efficacy and their practices with children. It concludes with a discussion of how staff training profiles vary across centres serving more and less diverse groups of children.
- **Chapter 3** starts by presenting an analytical framework to analyse ECEC staff working conditions and well-being through TALIS Starting Strong. It then describes the main aspects of these working conditions, the various dimensions of well-being included in the survey, and how they vary across and within countries. The chapter also analyses the main determinants of the sources of stress before investigating the relationships between staff's well-being and their practices with children and parents, as well as motivation to stay in the profession. It concludes with an equity perspective on staff working conditions across ECEC centres with different characteristics.
- **Chapter 4** seeks to understand what leadership looks like in ECEC centres across a diversity of settings and contexts, looking at the responsibilities, functions and structures of centre leadership. Following an analysis of associations between leadership and other outcomes, such as staff's professional growth, satisfaction and well-being, the chapter examines leadership development and leaders' working conditions. It concludes with an equity perspective on leaders' engagement in their different functions.
- **Annex A** contains information about the TALIS Starting Strong target populations, the samples and a summary of the adjudication outcomes for each sample, along with cautionary notes about interpretation of the results, when necessary.
- **Annex B** contains information about complex variables derived from the staff and leader questionnaires that are analysed in the report and statistical methods used to analyse the data.
- **Annex C** contains the full list of online results tables.
- **Annex D** lists the members of the OECD Extended ECEC Network, managers in the TALIS Starting Strong national study centres, members of the OECD Secretariat, members of the TALIS Starting Strong International Consortium and members of TALIS Starting Strong expert groups.

References

OECD (2019), *Providing Quality Early Childhood Education and Care: Results from the Starting Strong Survey 2018*, TALIS, OECD Publishing, Paris, https://dx.doi.org/10.1787/301005d1-en. [2]

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1 Overview and policy pointers for building a high-quality early childhood education and care workforce

This second volume on the results of the 2018 OECD Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) focuses on policies for building and retaining a high-quality workforce in early childhood education and care (ECEC). This volume examines factors that influence the skills development of ECEC professionals, their working conditions and well-being at work, and leadership and management practices in ECEC centres. It also brings an equity perspective by investigating how these vary between more and less challenging ECEC centres. The chapter provides an overview of the main findings of the volume and discusses policy areas for countries to attract, develop and retain a high-quality workforce in the ECEC sector.

Three pillars for building and retaining a high-quality early childhood education and care workforce

The work of early childhood education and care professionals is fundamental in normal and exceptional times alike

Early childhood education and care (ECEC) professionals are the major driver of the quality of an ECEC system. A growing body of evidence links investments in high-quality ECEC to personal, social and economic returns, thereby providing a strong case for developing the skills of ECEC staff, improving their working conditions and well-being, and strengthening leadership and managerial practices in ECEC settings. This is why, in normal times, OECD countries seek effective policies to attract, maintain and retain a highly skilled workforce in the ECEC sector.

Investing in ECEC professionals as the quality cornerstone of a country's ECEC system becomes even more primordial in the context of the global crisis triggered by the COVID-19 pandemic and the resulting disruption of educational and social care services. Across the world, the closure of ECEC centres during the pandemic has forced families to take difficult decisions about balancing work and stress around the pandemic with their children's education and care. The crisis highlights the importance of ECEC as a critical sector not only to support parents' employment and secure ongoing services for children of other essential workers, but also to provide learning and social development opportunities for young children, especially those from disadvantaged backgrounds. While other levels of education may adopt virtual and remote solutions to offer some continuity for students' learning, the human interactions that define process quality in ECEC cannot be replaced in the same ways. As the sector prepares to resume its activity while confronting the challenges of the pandemic, recognition of the value of the work of ECEC professionals and a political commitment to support high-quality and equitable provision become imperative.

At the same time, the reality of COVID-19 has underscored the fragilities of the ECEC sector in many countries. The pandemic has heightened the need for ECEC staff and leaders to develop strong skills and innovative strategies for supporting children and families, possibly under new circumstances when restrictions are lifted. It has also highlighted problems with staff shortages and challenging working conditions, as well as the financial precariousness of some ECEC settings. This makes policies to build and retain a highly skilled ECEC workforce more important than ever.

Across countries, ECEC centres were closed as a consequence of the first wave of the COVID-19 pandemic in the first half of 2020. While these closures were generally temporary measures, the risk of permanent job losses may have been greater for staff with higher levels of job insecurity and in countries with a larger prevalence of the private sector. The first volume of TALIS Starting Strong (OECD, 2019[1]) as well as the current volume (see Chapter 3) provide baseline indicators and analyses into the working conditions of the ECEC workforce based on data collected in 2018, hence prior to the pandemic. In addition, in preparation for this volume, countries participating in the survey provided information on some financial and employment effects of the COVID-19 crisis in the ECEC sector in the first half of 2020, as well as on the measures adopted to mitigate its impact. While governments have generally stepped in to avoid job and wage losses for ECEC staff (Box 1.1 and Table 1.1), the medium- and long-term effects of the crisis will require sustained and strong support to ensure access to high-quality ECEC for all children, so that ECEC provision continues to provide a stepping stone in their development and well-being.

Table 1.1. Governments' financial support to the ECEC sector during the COVID-19 pandemic

Measures taken in the first half of 2020

		Chile	Denmark	Germany	Israel (pre-primary)	Israel (centres for children under age 3)	Japan	Norway	Turkey
Have ECEC centres remained open for children of essential workers during the COVID-19 pandemic?		No	Yes (to some extent)	Yes	No (except for local initiatives)	Yes (to some extent)	Yes	Yes	No
Have some ECEC settings faced financial problems because of decreased revenues during the COVID-19 pandemic?	Public settings	No	Yes	Yes (based on qualitative evidence)	No	Yes	No (assumption, no published statistics)	No	No
	Private settings	Yes	Yes	Yes (based on qualitative evidence)	Yes (small share)		No (assumption, no published statistics)	No	Yes
Has the government provided financial support to ECEC centres that faced financial problems because of the COVID-19 pandemic?	Public settings		Yes	Yes		Yes	Yes	Yes	
	Private settings	Yes	Yes	Yes (decided at the Länder level)			Yes	Yes	Yes
Have some ECEC staff been exposed to unemployment or job losses because of the COVID-19 pandemic?	Staff with a permanent contract	Yes (in private settings)	No (assumption, no published statistics)		Yes (assistants)	No (assumption, no published statistics)	No (assumption, no published statistics)	No	No
	Staff with a temporary contract	Yes (in private settings)	No (assumption, no published statistics)		Yes	No (assumption, no published statistics)	No (assumption, no published statistics)	No	No
Which type of support have unemployed and/or dismissed staff received?	Unemployment insurance	Yes		Yes	Yes	Yes			
	Furlough scheme							Furlough schemes for all sectors	
	Other			Short-time work (60-67% of net income)					

Positive development
Area of concern
Information not available
Not applicable

Source: Information provided by the national authorities as of July 2020. Information from Iceland and Korea is not available

Box 1.1. Early childhood education and care (ECEC) staff salaries and employment during the closure of ECEC centres as a consequence of the COVID-19 crisis

Israel (pre-primary)

In Israel, a large majority of pre-primary ECEC centres are publicly managed. Teachers were not affected by the crisis in terms of salary, as they received their full salary while centres were closed. Teachers had to provide pedagogical continuity through distance learning during this period. They were provided support to ensure pedagogical continuity through distance learning options. Assistants were put on unpaid leave for four to six weeks, but received unemployment insurance while ECEC centres remained closed.

Japan

In Japan, most ECEC settings have remained open to welcome the children of essential workers. The government has continued to provide legally mandated regular funding to ensure that ECEC centres did not face financial problems and that staff were not affected in terms of employment. For public settings, national tax revenue was transferred to local governments in charge of ECEC settings irrespective of their closure attributed to COVID-19. For private settings, the government continued to provide funding to cover operating costs, even when centres were closed due to COVID-19, to ensure there would be no financial or employment problems.

Norway

In Norway, around 50% of ECEC centres are privately managed. The government has allocated funding to prevent layoffs as a consequence of the close-down of ECEC centres. In case of layoffs, the amount of public funding allocated to ECEC centres is reduced in line with the cost reduction implied by layoffs. In addition, the government compensates for the loss of parental fees, which amount to 15% of ECEC centres' running costs. As in all other sectors in Norway, staff suffering a job loss are eligible for furlough schemes (temporary leave with part of their wage maintained). However, thanks to the provision of public funding to ECEC centres, including compensation for the loss of parental fees during close-down, ECEC staff have generally not been exposed to layoffs.

Turkey

A large majority of ECEC centres in Turkey are publicly managed. ECEC centres have been closed as a consequence of the COVID-19 pandemic. Salaries have been maintained for permanent ECEC staff and substitute teachers of public ECEC centres. Staff of private ECEC centres are entitled to the short-term working allowance for workers affected by the economic consequences of the COVID-19 pandemic introduced by the government.

Source: Information provided by the national authorities as of July 2020.

TALIS Starting Strong

The OECD Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) is the first international survey focusing on staff and leaders in ECEC. Data collection took place in 2018, hence before the COVID-19 pandemic. The first volume of results from the survey focused on the quality of ECEC environments, placing children at the centre of analyses and investigating the types of interactions staff have with children and parents and the main factors related to these interactions (OECD, 2019[1]). Findings in the report highlighted the key role of staff and leaders in providing high-quality ECEC and the need for policies to better prepare and support staff in their daily activities and practices with children.

Building on the findings of the first volume, the second volume focuses on attracting, maintaining and retaining a quality workforce. It continues to address issues around the quality of ECEC, but with a novel and specific focus on the ECEC workforce. The objective of this volume is to analyse and discuss more specifically policy areas that ensure a stable quality workforce in the sector. TALIS Starting Strong offers an opportunity to learn about the strengths and challenges of the ECEC workforce, including their education and training trajectories, their sources of stress and job satisfaction, and the work organisation and leadership practices in ECEC centres. Analyses in this publication relate to the characteristics and working conditions of ECEC staff and leaders that are known through research to influence their skills, their sense of self-efficacy, their practices with children and colleagues, their own well-being, and the probability that they will stay and grow professionally within the ECEC sector (Sim et al., 2019[2]).

By giving ECEC staff and leaders a voice on issues surrounding their work, TALIS Starting Strong complements and extends existing international data on structural characteristics of ECEC and countries' policies in this area (OECD, 2017[3]). This report includes results from staff (those who work regularly in a pedagogical way with children) and leaders (those with the most responsibility for administrative, managerial and/or pedagogical leadership at the centre level) in pre-primary settings (ISCED Level 02) in nine countries (Chile, Denmark, Germany, Iceland, Israel, Japan, Korea, Norway and Turkey). It also presents results from staff and leaders in centres providing ECEC to children under age 3 in four countries (Denmark, Germany, Israel and Norway).

The analytical framework for this report identifies three main and interlinked policy areas as key pillars to attract, maintain and retain a high-quality workforce in the ECEC sector (Figure 1.1).

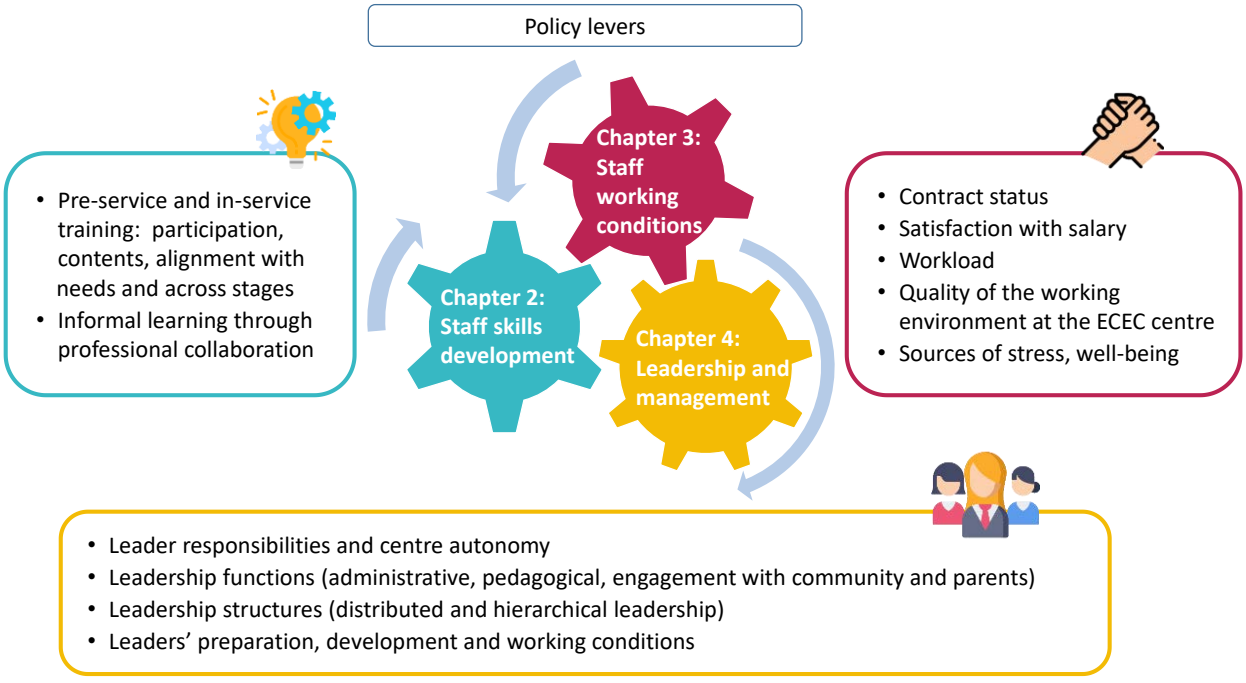
Policies for skills development, encompassing initial preparation programmes, in-service training and opportunities for informal learning. These policies serve to attract and prepare new entrants to the profession and to maintain a high-quality workforce by providing opportunities for skill upgrading training and career progression.

Policies on staff working conditions, including salaries, contract status, the organisation of work, and resources to reduce stress and promote well-being at work. These policies can help sustain a positive climate at the workplace, limit stress and increase job satisfaction, and thereby the capacity of the sector to retain highly skilled and motivated professionals.

Policies on leadership and management in ECEC centres, which play an important role in creating opportunities for skills development for staff and improving their working conditions and working methods. These policies contribute to the capacity of the sector to retain staff, not least since leadership roles can themselves be an attractive next step for staff seeking more responsibilities.

Equity is a transversal issue to the three policy areas. Equity considerations include how staff skills, working conditions and leadership practices vary across ECEC centres with more and less diverse groups of children and with different levels of resources.

Figure 1.1. Framework for the analysis of policy levers to build and retain a high-quality ECEC workforce



This chapter provides an overview of the report and a summary of its main findings, and sets out policy pointers organised in policy areas and supported by empirical findings from TALIS Starting Strong. A data overview included at the end of the chapter presents, for the participating countries, a list of key indicators towards building and retaining a high-quality ECEC workforce.

Policy area: Staff education, training and skills development

The evolving notion of professionalism in the ECEC sector reflects the active role of staff in developing their knowledge and skills, including through structured training, collaboration with colleagues, ownership of their professional practice and a commitment to continuous improvement. Policies can support ECEC staff in becoming lifelong learners by providing consistent pathways for skills development that are accessible to all staff, and by creating conditions for staff to embrace a professional growth mind-set. Such pathways should span across career stages and build on the alignment of initial preparation programmes, in-service training activities and opportunities for informal learning. These issues are critical to make the profession more attractive to potential candidates, to keep staff motivated and engaged, to establish avenues for career progression, and to ensure high-quality ECEC for children.

Main findings

The breadth of education and training for ECEC work

Results from TALIS Starting Strong underline the need to strengthen the initial preparation of ECEC staff, while being a testament to their strong engagement in continuous professional development. Across participating countries, about three in four staff report having at least some post-secondary education (ISCED Level 4 or above), and a similar proportion report having completed an education or training programme that prepared them to work with children, ranging from 64% of staff in Iceland to 97% of staff

in Germany (OECD, 2019[1]). In turn, staff levels of participation in in-service training during the 12 months prior to the survey are over 75% in all countries, being generally higher among staff in teaching than in assistant roles (see Figure 2.4). Across countries, courses and seminars remain the most common type of training activity by a large margin, with online activities and qualification programmes being the least common, on average (see Figure 2.5).

This volume sheds new light on how training programmes in the ECEC sector compare across countries. Chapter 2 distinguishes nine broad content areas of training, reflecting major themes of ECEC education and professional development identified by the research literature (OECD, 2018[4]; Sim et al., 2019[2]). An important finding relates to the integration of workplace-based learning into initial preparation programmes. TALIS Starting Strong data show that close to 70% of ECEC staff across countries completed a practical module during their pre-service education and training to work with children, although this varies notably between countries (see Figure 2.2). Importantly, results in this volume show that staff who underwent a "practicum" covered more areas in their pre-service training than staff whose programmes did not have such a practical dimension, and in particular topics that are less often integrated into initial preparation programmes, such as working with a diversity of children or working with parents and families (see Figure 2.3). This suggests that practical placements in real work settings serve not only to bridge theory and practice in ECEC initial preparation programmes, but also to broaden their curricular contents.

While initial preparation programmes are comprehensive in all of the countries participating in TALIS Starting Strong, more variation exists in the thematic breadth of in-service training, with staff covering the highest number of content areas in Korea and the smallest number in Germany and Turkey in the 12 months prior to the survey. This may reflect differences across countries in the design of in-service training offerings, or in the incentives for staff to choose between variety and focus in their training options.

Analyses in Chapter 2 consistently suggest that the breadth of training of ECEC staff is positively associated with attitudes and practices related to process quality. Across the nine participating countries, staff whose training included a greater number of thematic areas reported a stronger sense of self-efficacy than staff whose training included fewer areas, especially at the pre-primary level (see Table 2.3). Similarly, in all participating countries, pre-primary staff who covered a greater number of areas in both pre-service and recent in-service training report a greater use of adaptive practices with children (i.e. practices to engage children according to their backgrounds, interests and needs) than staff having covered fewer areas in their training, and so do staff in centres for children under age 3 in Israel and Norway (see Table 2.4). Moreover, in Israel, Japan and Norway, breadth of training is also associated with a greater use by staff of practices for behavioural support.

Training that spans across a greater number of thematic areas is associated with indicators of process quality

Staff sense of self-efficacy for supporting child development and learning is higher among staff who covered a greater number of areas in their training.

In all participating countries, pre-primary staff who covered more areas in both their pre-service and recent in-service training report adapting more their practices to children's needs and interests, and so do staff in centres for children under age 3 in Israel and Norway.

Alignment of training across career stages

TALIS Starting Strong provides a perspective into the alignment of the professional development undertaken by ECEC staff at different stages of their careers. Analyses of staff training trajectories in different areas of work indicate that, most often, the contents of recent in-service training overlap thematically with those included in initial preparation programmes. For instance, across countries, the percentage of pre-primary staff for whom each thematic area covered in recent in-service professional development had not been part of their prior training is below 10% (see Figure 2.11). This suggests that, across a diverse set of ECEC systems, ongoing professional development serves primarily to provide staff with opportunities to deepen or update their knowledge and skills in the same areas covered during their initial preparation to enter the profession.

The likelihood that staff report a strong sense of self-efficacy for helping children to develop creativity and problem solving tends to be higher for staff who covered related training contents in both their pre-service and in-service training than for staff who covered such contents at one point in time only or who lack training in the area (see Figure 2.15). Cumulative training bears also the strongest association with staff sense of self-efficacy in other areas or work, including adapting work to individual child needs, helping children to prepare for starting school, and monitoring and documenting child development (Table C.2.19).

Staff training trajectories are also associated with the use of specific practices with children. In most countries, staff whose pre-service and recent in-service training included contents about working with a diversity of children, such as tailoring activities to suit different children's interests, levels of development or cultural backgrounds, adapt their practices to children's needs and interests more than staff with less training exposure to these topics, as when covered in initial preparation only, in-service training only or not covered at all (see Figure 2.16). Staff training trajectories in relation to classroom/playgroup/group management are also associated with the use of behavioural support practices with children in Israel and Norway at the pre-primary level (Table C.2.22).

Staff can strengthen their skills through in-service training that builds on the contents of initial preparation programmes

In Chile, Iceland, Israel and Turkey, pre-primary staff with cumulative training for facilitating playful learning report the strongest sense of self efficacy for helping children to develop creativity and problem solving.

In all countries, and at both the pre-primary level and in centres for children under age 3, training for working with a diversity of children is associated with staff adapting more to children's needs and interests, especially when also taken in-service.

Informal learning combined with structured training

Strategies to develop the skills of ECEC professionals should explore synergies between formal and informal learning. TALIS Starting Strong provides rich information not only about structured training, but also about the frequency and types of collaborative practices in which staff engage in their ECEC centres. Professional collaboration represents an important avenue for informal learning, for instance through knowledge sharing in joint activities and discussions with colleagues.

Results in this volume show that ECEC staff who are more strongly engaged in collaborative professional practices are also more likely to participate in training activities, underscoring the potential interactions between formal and informal channels for developing the skills of the ECEC workforce. Across countries and both among pre-primary staff and staff in centres for children under age 3, stronger engagement in collaboration with colleagues working in the same ECEC centre is positively and consistently associated with staff's individual participation in recent in-service training, as well as with the variety of formats and the number of topics covered in such activities (see Table 2.2). For instance, a one standard deviation increase in the staff scale of collaborative practices is associated with a 60% greater likelihood that pre-primary staff participate in recent in-service training activities in Norway; a 40% increase in Korea; a 30% increase in Chile, Iceland and Japan; and with smaller increases in Germany, Israel and Turkey. Staff in Norway stand out for their strong engagement in collaborative practices, such as feedback exchanges and joint activities across different groups of children, while maintaining high levels of participation in formal training.

Structured training and collaborative practices go hand in hand, creating opportunities for ECEC staff to develop their skills through both formal and informal channels

Staff engagement in collaborative professional practices, an avenue for informal learning, is positively associated with their participation in structured training.

Policy pointers

The findings above support two policy pointers for developing the skills of the ECEC workforce:

> *Adopt high standards for ECEC initial preparation programmes, and build on their comprehensive curricula to design in-service training activities that enable targeted skills upgrading for staff.*

Initial preparation programmes for working in the ECEC sector should embrace ambitious quality standards as a way to equip future staff with strong skills and raise the status of ECEC professionals. Analyses in this volume show that levels of completion of pre-service programmes focused on working with children and of practical modules are generally similar between novice and experienced staff (Table C.2.2). At the same time, results point to the strengths of programmes with broad curricular designs and which include practical modules in workplace settings as a way of exposing career entrants to a wide range of topics. The breadth of initial preparation programmes remains the basis on which to ground subsequent professional development, aligned across career stages. Such alignment should attend to multiple dimensions. It should build on foundational education and training to update and upgrade staff's knowledge and skills in the evolving field of ECEC, keeping up with research developments and changing tools and practices. It should map onto career progression pathways for staff seeking new and greater responsibilities in their ECEC centres and the sector at large. And it should enable staff to develop skills required to better support the specific populations of children that they work with, attending to their diversity across ECEC centres. Achieving better alignment and more effective skills development for ECEC staff in turn calls for a careful assessment of professional development needs at the individual, centre, and regional or national levels, and for measures that support staff in navigating the professional development offer to access the training the most relevant to their needs.

However, professional development that is broad in thematic scope but poor in quality will fall short of delivering these results. ECEC systems should keep a strong focus on the quality of the contents and delivery, aspects on which TALIS Starting Strong can only provide indirect evidence. As noted in Chapter 2, the associations of training indicators with staff sense of self-efficacy and practices with children are most consistent in Israel and Norway, which points to a strong quality dimension of the professional development for ECEC staff in these two countries.

While findings point to the importance of well-aligned professional development, ECEC systems can also maintain different goals for initial preparation programmes and in-service training. Programmes including a greater number of areas may help ECEC staff to develop more flexible ways of thinking and to transfer knowledge and approaches from one area to another, but training with a more specific and in-depth focus may be more important for developing more specialised skills and practices, particularly in connection to the specific challenges encountered in different ECEC centres. Moreover, in-service professional development should not only serve to extend and update contents in foundational areas, but also to introduce staff to new topics and skills not included in their initial preparation. Training for the effective use of digital technologies to support children's learning, development and well-being and for working with a

diversity of children are candidates for this approach, given the relatively low sense of self-efficacy reported for staff in these areas across all the participating countries in TALIS Starting Strong.

Create conditions to promote informal collaborative learning among ECEC professionals and reorient the provision of training towards centre-embedded models.

ECEC systems could support a gradual transition towards more collaborative and centre-based approaches to professional development in the ECEC sector. These approaches acknowledge and promote an active role for staff, both individually and collectively, as reflective professionals, while emphasising context-based processes connected to staff's everyday work and resources and to the needs of the children attending their ECEC centres.

Formal and informal learning can be combined particularly well in centre-embedded professional development. This approach is attracting growing interest in many ECEC systems because of its capacity to tie in with staff's experience and needs and to build on existing resources and trust at the centre level. Coaching and mentoring are often highlighted as two promising models. Analyses in this volume show that centre-embedded approaches for professional development remain less common than traditional, off-site training activities such as courses, seminars or conferences. On average across countries, only 44% of ECEC staff received coaching by an external person; less than 40% engaged in formal peer or self-observation activities or visits to other centres; and only 32% were involved in induction or mentoring activities. Teachers in Israel and, to a lesser extent, Japan and Korea, report the highest levels of participation in centre-embedded professional development. However, across countries, assistants report lower levels of participation than teachers in these activities, and particular efforts may be needed to ensure that collaborative learning benefits staff with different roles within ECEC centres.

While staff can play a critical role in initiating, shaping and providing collaborative learning opportunities to their peers, ECEC systems also need to provide structural supports for knowledge sharing and joint activities among ECEC staff. Examples may include making time available for collaboration in staff schedules, requiring ECEC centres to develop collaboration-focused strategies as part of their professional development plans, and assigning and supporting centre-level personnel with responsibilities to encourage and develop teamwork opportunities.

How do countries perform?

Japan, and to a lesser extent Germany, Korea and Turkey, are countries with strong pre-service education and training for their ECEC staff, most of whom join the profession with high levels of educational attainment (Table 1.2, Indicator A.1), having received training specifically to work with children (Table 1.2, Indicator A.2) and having completed a workplace-based practical module during their initial preparation (Table 1.2, Indicator A.3). Chile and Iceland are countries where stronger requirements for acquiring pre-service practical experience in ECEC settings could help boost the early career skills of ECEC staff.

Initial preparation programmes appear broad in scope in all countries, exposing future staff to most of the thematic areas on which TALIS Starting Strong collected information (Table 1.2, Indicator A.4). A positive sign of development is that, in most countries, the percentage of teachers whose programmes included contents about working with a diversity of children is higher among novice teachers than among experienced teachers (see Table C.2.2), as this suggests changes in curricular design over time. At the pre-primary level, staff pre-service training in this area is the highest in Japan and Turkey (Table 1.2, Indicator A.5). In centres for children under age 3, it is the highest for staff in Norway (Table 1.2, Indicator A.5).

Approaches to in-service professional development vary across countries. At the pre-primary level, participation in recent in-service training activities is virtually universal in Korea and high in Japan, exposing staff to a wide range of contents in both countries. Levels of participation are also high in other countries,

and especially in Norway, where staff tend to cover a smaller number of areas during such training: this is also the case of Germany, Iceland and Turkey (Table 1.2, Indicators A.6 and A.7). In pre-primary settings in Israel, levels of participation and the breadth of in-service training vary notably between teachers and assistants (see Table C.2.4), reflecting marked differences in responsibilities and duties. Consistent with these different models, the percentage of staff covering contents related to key areas such as child development, diversity or pedagogy tends to be higher in Japan and Korea, and lower in Germany, Iceland and Turkey (Table 1.2, Indicators A.12-14). However, besides thematic overlap, other quality aspects influence the alignment of professional development: staff perceptions about the relevance of in-service training offerings are broadly positive in Israel and Turkey, and especially in Norway, but less so in Chile and Korea (Table 1.2, Indicator A.15). Countries can also use staff's own needs assessments to improve the design of their professional development. For instance, in Chile and Japan, a majority of staff report a high level of need for further training for working with a diversity of children (Table 1.2, Indicator A.16).

At the pre-primary level, staff in Israel, Japan and Korea have the highest levels of participation in centre-embedded forms of professional development such as peer observation, coaching and mentoring arrangements, a result that is also observed for Israel in centres for children under age 3 (Table 1.2, Indicators A.8 and A.9). These appear as policy choices for delivery models because centre-embedded activities are less frequent in other countries where overall participation levels in in-service training are similar or higher to Israel, Japan or Korea (Table 1.2, Indicator A.6). In turn, Iceland, Norway and Turkey are countries where pre-primary staff more frequently engage in discussions with colleagues about children's development, well-being and learning and provide feedback to other staff about their practice, as do staff in centres for children under age 3 in Norway. These collaborative practices, channels for informal learning, are relatively less frequent among pre-primary staff in Chile and Korea (Table 1.2, Indicators A.10 and A.11).

Policy area: Staff working conditions and well-being

Staff's working conditions and well-being are key determinants of the capacity of the ECEC sector to attract and retain good candidates in the profession and reduce turnover. With the demand for ECEC expanding in many countries, attracting and retaining skilled staff has become a challenge. TALIS Starting Strong shows that staff absences and shortages hinder the functioning of the sector by creating tensions for both ECEC leaders and staff in many countries. Staff's working conditions such as salaries, opportunities for career progression and contractual status have a direct impact on the capacity to attract new candidates to the sector. Together with other aspects such as the quality of the working environment at ECEC centres, they also matter for staff's well-being and stress at work, which in turn might be a reason for some staff to leave the sector.

Main findings

Working conditions

TALIS Starting Strong includes information on many aspects of the working conditions of ECEC staff: working time, time allocated to different tasks, contractual status, satisfaction with salary and the working environment, such as collaboration with colleagues and support received from leaders. The survey gives a mixed picture of ECEC staff's working conditions with aspects that both encourage and discourage joining and remaining in the profession and large variation in the quality of such conditions across and within countries.

Relatively low salaries together with limited career progression opportunities can act as a barrier to attract and retain staff in the ECEC sector. On average across participating countries for the pre-primary level, 29% of staff "agree" or "strongly agree" that they are satisfied with their salary while this percentage

amounts to 39% on average in OECD countries for teachers at the lower secondary level (see Figure 3.2). When asked about the most likely reason to leave the job, staff indicate retirement, leaving for health-related reasons, attending to family responsibilities and work in a different job not in the ECEC sector, which suggests that ECEC staff envisage limited possibilities for career progression.

Working hours are relatively low in Iceland and Norway and to some extent in Germany and there is little variation within these countries. In contrast, working hours are relatively high in Japan and Korea and to some extent Chile and there is large variation within these countries. The higher working hours and the larger variability in these countries are driven by the number of hours spent without children, which can include work at home. Staff who spend a larger percentage of their time without children express a higher level of stress in areas such as administrative work.

Staff's perceptions of their working environment vary largely within countries and to some extent across countries. For instance, from 24% of staff in Iceland to 71% in Korea report that they need more support from their leader (see Figure 3.9). Collaborative practices can be expanded in scope and extended to all staff as they are more frequent for staff working full time, with a permanent contract and with a higher level of initial education.

Working conditions include both aspects that can discourage and encourage joining and staying in the ECEC workforce

Satisfaction with salary is low, even lower than for lower secondary teachers, especially for staff with a higher level of education.

From 24% of staff in Iceland to 71% in Korea report that they need more support from their leader.

Well-being

Well-being at work includes several dimensions, such as the state of being happy and satisfied at work, but also feeling comfortable with the tasks to perform and recognised by others for the work one does. Overall, staff in all countries show a high level of satisfaction with the profession and their current job with more than 93% of pre-primary staff "agreeing" or "strongly agreeing" that "All in all, I am satisfied with my job" (see Figure 3.12), which is slightly more than on average in OECD countries for lower secondary teachers.

Feeling comfortable and confident in performing the various tasks of the job is an important aspect of well-being. Staff generally express high levels of self-efficacy in supporting children's development, learning and well-being but a lower level of self-efficacy in working with a diversity of children and use of digital technology, two areas where demands on staff are growing given the trends of increasing diversity and digitalisation in ECEC settings. Staff with a high sense of self-efficacy make greater use of practices to adapt to children's interest and needs and report less stress for some areas of their work.

Feeling valued by society also contributes to well-being as it relates to feelings of being recognised for the job and valued by others. From 75% of staff in Israel for pre-primary to 31% in Japan feel valued by society (see Figure 3.14), which is above the OECD average for teachers in lower secondary education (26%). In several countries, staff with a lower educational attainment, less pedagogical responsibilities (assistants versus teachers), and less experience feel more valued by society than other staff. These findings may be

a source of concern for the prospect of retaining staff who have completed higher education and who have worked in the sector for a longer time and in more demanding roles in the sector.

Most staff are overall satisfied with their job, but their sense of self-efficacy varies across work areas

From 79% of pre-primary staff in Korea to 98% in Israel are satisfied with their job and satisfaction is similar for staff working with children under age 3.

On average, staff report a high level of self efficacy in supporting children's development, learning and well-being but a lower level in working with a diversity of children and use of digital technology.

Mitigating stress

Among the various dimensions of well-being, a key one is staff's stress at work, which is linked to engagement with work, risk of burnout and motivation to leave the profession. TALIS Starting Strong asks staff about whether and to what extent various aspects of their work are a source of stress. Among the main categories included in the survey, for all countries at pre-primary level and for staff working with children under age 3, stress related to workload due to insufficient human or financial resources (including, for instance, "too many children in my classroom/playgroup/group") is a major source of stress. Workload stress coming from work outside hours spent with children (including, for instance, "too much administrative work to do") is also an important source of stress in several countries. In contrast, in most countries, smaller percentages of staff report working with children and job-related responsibilities (including, for instance, "being held responsible for children's development, well-being and learning") as a high source of stress.

Feelings of stress are related to the working conditions. For instance, staff with a large number of children in the target group are more likely to report stress from too many children in the classroom/playgroup/group and staff who spend a larger percentage of their working time without children are more likely to report stress from too much administrative work. However, the many aspects of working conditions matter and feelings of stress emerge from imbalances between job demands, resources to address these demands and rewards for effort. This report proposes new analyses on the main drivers of the various sources of stress that look at the imbalances between factors that enhance stress (job demands) and factors that mitigate it (job resources and rewards), following the job demands-resources/rewards models.

Results from these analyses show that in some countries, staff exposed to some sources of stress benefit from some buffers of stress, such as support from leaders, satisfaction with salaries, and sense of self-efficacy. For instance, when both demands and resources are accounted for, in Denmark in centres for children under age 3 (with low response rates) and in Norway for both levels of education, staff who work with a larger target group are not more stressed than others by having too many children in the target group. In Germany and Iceland for pre-primary and in Denmark (with low response rates) and Norway for both levels of education, staff who spend more time on administrative work are not more stressed than others by having too much administrative work, when both demands and resources or rewards are accounted for.

Good working conditions can balance most demanding aspects of the job and help mitigate stress

In all countries, increased workload due to insufficient human or financial resources (e.g. too many children in the group) is a top source for stress.

Policy pointers

The findings above point to the following policy levers for ensuring that working conditions support ECEC staff in their work and contribute to attracting and retaining a high-quality workforce.

> *Ensure that staff benefit from a balanced set of working conditions and that unfavourable working conditions do not accumulate on some ECEC staff.*

Results from TALIS Starting Strong show that there is room to improve ECEC staff's working conditions in many areas. However, as ECEC budgets are limited, improving staff's working conditions involves some trade-offs. Analyses presented in Chapter 3 on the main drivers of four specific sources of stress provide indications on how to mitigate stress by improving some specific work conditions and achieve a better balance between factors that increase stress (job demands) and those that mitigate it (job resources and rewards).

Policies can aim at mitigating stress by considering the various aspects of ECEC staff working conditions and targeting those for which changes are financially feasible and can lead to several benefits. Identifying staff who are particularly exposed to some sources of stress and achieving a better balance between factors that increase and mitigate stress is another important strategy to address the issue of stress in the profession. For instance, countries where having too many children in the group is an important source of stress can ensure that staff with large groups of children receive training on classroom/playgroup/group management, are supported by leaders, can exchange with colleagues and possibly receive higher wages. Countries where satisfaction with salary is particularly low and does not provide a feeling of reward for the effort made can aim to provide flexibility to organise the work and a good alignment between working time and the tasks to be performed.

Analyses in Chapter 3 point to policy areas with multiple benefits. For instance, policies that support ECEC staff's skills development throughout their careers through various means, from formal to informal learning, can boost self-efficacy, which can in turn improve the quality of practices with children and mitigate stress.

> *Raise the status and reward of the profession by ensuring that staff's salaries are aligned with their responsibilities and by better defining pathways for career progression in the ECEC sector.*

Improving salaries and opportunities for career progression can be a long-term objective as a reward for the efforts of ECEC staff, and a way to improve staff retention and the capacity of the ECEC sector to attract good candidates.

As ECEC centres have been closed in many countries as a consequence of the COVID-19 pandemic, the importance and value of ECEC staff have become more evident for policy makers and society in general. Information collected for this report suggests that in some countries there have been losses in terms of salary and jobs in the ECEC sector (see Table 1.1). In this context, some countries have taken steps to support the ECEC workforce on a temporary basis, and the financial package of ECEC staff might be reconsidered on a more long-term basis. Countries where the salaries of ECEC teachers are below those of primary teachers, especially when educational requirements are similar, can aim to align salaries in both

sectors. To contain the cost of this policy, ECEC staff with highly demanding work (e.g. those working with large groups of children or with a large diversity of children or with important administrative responsibilities) can be targeted first for salary increases.

In addition to conditions at the beginning of the ECEC career, salaries and responsibilities need to progress jointly throughout staff's professional life. Opportunities for career progression need to include both horizontal and vertical transitions, for instance through the possibility of diversifying responsibilities (horizontal transition) before changing status, such as moving from assistant to teacher or from teacher to leader (vertical transitions). Policies can support the development of career pathways for the various categories of staff through clear competency frameworks for various roles and the recognition of skills acquired and competencies acquired informally.

Better design regulations around working time to make sure that staff have the time to perform the variety of tasks that are part of their responsibilities.

ECEC staff are expected to engage in a range of activities beyond working directly with children. Results from this report show that staff who spend a higher percentage of their time working without children are more likely to be stressed by work performed without children, such as administrative work. In addition, in countries and centres with greater amounts of time spent without children, which includes work performed at home, overall working time is longer. These findings suggest that staff tend to lack the time needed to perform the work without children and that this leads to work at home and stress. This is particularly the case in some countries, such as Chile, Japan and Korea.

These findings point to the need to ensure that staff can devote sufficient time to individual planning, collaboration with colleagues or parents, documenting children's development, and administrative tasks, for instance by providing protected time for these activities, as it is the case in a number of countries (see Table 3.16). The organisation of the work can also play an important role, for instance by ensuring that leaders have the flexibility to effectively organise working time within their centres and by organising complementarities between staff members, such as teachers working in tandem with assistants.

Set the conditions for a supportive working environment in each ECEC centre.

A supportive working environment at the ECEC centre has multiple benefits that relate not only to the quality of staff's interactions with children or process quality but also to staff's well-being and motivation to stay in the profession.

Instilling a collegial work culture that supports peer learning, exchanging ideas, a good level of autonomy and a set of responsibilities depends on a multiplicity of factors that are not easily regulated by policies and take time to develop. However, when in place, a supportive working environment can help staff cope with the demanding aspects of their work or to some extent mitigate feelings of dissatisfaction due to low salaries or lack of recognition of the profession.

Policies need to act on many fronts to support the quality of the working environment in general and of the interactions between staff members and leaders more specifically. Policies discussed above that create conditions to promote informal learning among ECEC professionals and prioritise centre-embedded approaches for in-service training are key levers. Defining clear roles and responsibilities for leaders and preparing them for these roles and responsibilities, as discussed below, are other important policy areas.

How do countries perform?

Indicators of the data overview on ECEC staff's working conditions and well-being show a lot of consistencies across various indicators for several countries. For instance, ECEC staff in Norway report positively on many aspects of their working conditions and well-being, especially for staff working in

pre-primary education but also to a large extent for staff in centres for children under age 3. This is also to some extent the case in Turkey. In contrast, ECEC staff in Japan and Korea report quite negatively on several aspects of their working conditions and on well-being. Cultural biases in response rates may contribute to these results. These biases could be higher for questions related to working conditions and well-being than for other areas of the TALIS Starting Strong questionnaire. Nonetheless, findings for Korea and Japan warrant policy attention.

Salaries, job security and career progression opportunities (Table 1.2, Indicators B.1, B.2 and B.3) appear generally supportive in Germany, Israel, Norway and Turkey for pre-primary. In contrast, in Iceland, the percentage of staff that are dissatisfied with their salaries and report possibilities to leave the ECEC sector are relatively high. Workload may be high in Japan and Korea and to some extent Chile, where staff report a high number of hours on tasks related to the job at the ECEC centre (Table 1.2, Indicator B.4) and in particular a large number of hours spent without children (Table 1.2, Indicator B.5).

The quality of the working environment in ECEC centres is captured in TALIS Starting Strong through indicators of staff influence over decisions (Table 1.2, Indicator B.6), co-operation with others (Table 1.2, Indicator B.7) and support from leaders (Table 1.2, Indicator B.8). The working environment seems to be of a relatively high quality on average in pre-primary centres in Germany, Iceland, Norway and Turkey. Smaller percentages of staff report having control over decisions (Table 1.2, Indicator B.6), which can help staff deal with multiple demands, in Chile, Japan and Norway (for both levels of education). In Korea and Israel for centres for children under age 3, policies can aim at strengthening leadership to ensure that staff receive sufficient support in their everyday work with children.

Differences in satisfaction with working conditions across countries translate into differences in staff's well-being. In Israel and Norway for both levels of education and in Turkey for pre-primary, a large majority of staff are satisfied with their job and a majority of them feel valued by society (Table 1.2, Indicators B.10 and B.9). When four different sources of stress are considered, less than 20% of staff report high stress for each of these sources of stress only in Chile (Table 1.2, Indicators B.11-B.14). In Germany (for both levels of education), Iceland and Korea, large percentages of staff indicate resolving health-related issues as the most likely reason to leave the profession (Table 1.2, Indicator B.15). In these three countries and in Chile, Japan and Norway, those who are more stressed are more likely to indicate this reason as the most likely reason to leave (Table 1.2, Indicator B.16), which points to the need for policies aiming to mitigate stress for some categories of staff.

Policy area: Leadership and management in ECEC centres

Leadership is key to supporting and sustaining quality in ECEC settings and for creating a stimulating environment for both staff and children. Effective leadership establishes organisational conditions that promote process quality, thereby fostering children's learning, development and well-being. The influence of effective leadership operates mainly through improved working conditions for the staff of ECEC centres, which includes measures to mitigate stress and facilitate engagement in continuous professional development. To ensure that ECEC centre leaders are in a good position to guide the work of staff and shape the centre's organisational culture, ECEC systems should provide leaders with quality working conditions and adequate resources, and invest in new models of leadership development.

Main findings

The functions of ECEC centre leadership

Leadership carries many different meanings, and while formal job profiles and requirements differ across countries, leaders of ECEC centres are typically expected to manage budgets and staff and to promote a

quality learning environment. Centre leaders typically also interact with children themselves and may take part in learning and play. Among these various tasks, research has identified two main broad functions for ECEC leadership: administrative and pedagogical. Other important functions, which partly overlap with these administrative and pedagogical tasks, include engagement with parents and the community.

In almost all participating countries, administrative leadership accounts on average for at least 30% of leaders' time in ECEC centres. Pedagogical leadership makes up at least 25% of leaders' time in Chile, Denmark (with low response rates), Iceland, Japan and Korea at pre-primary level, and in centres for children under age 3 in Israel. Besides the time dedicated to administrative and pedagogical functions, leadership profiles vary notably across countries in other dimensions, too. For instance, interactions with children take up more than 50% of the time of pre-primary leaders in Israel and about 30% of leaders' time in Germany at both the pre-primary level and in centres for children under age 3. By contrast, leaders in Iceland spend 14% of their time interacting with children. In turn, interactions with parents or guardians are particularly important in Turkey, as well as in Israel (both levels), Korea and Japan (see Figure 4.6). Work with the community also seems to be especially important in Korea and Turkey, with relatively high shares of leaders reporting that the centre works with the local neighbourhood "quite a bit" or "a lot" (see Figure 4.10).

This volume shows a positive association between the pedagogical work and support that centre leaders provide for their staff and various indicators of process quality in ECEC centres. With regard to collaborative practices within centres, staff with more positive views on different aspects of pedagogical leadership tend to collaborate to a greater extent with their peers relative to staff with less positive views about their leaders in this particular function (see Figure 4.17).

Pedagogical leadership bears also a positive association with staff attitudes, including their sense of self-efficacy. Analyses show that staff's confidence in their ability to promote child development, learning and well-being is positively and consistently associated with strong pedagogical leadership, as perceived by staff, in all countries participating in the survey. This holds true for the different dimensions of pedagogical leadership on which staff were surveyed, such as leaders setting a clear vision or ensuring that staff feel responsible for children's development (Table C.4.34). At the pre-primary level in Chile, Denmark (with low response rates), Germany, Iceland, Israel, Korea, Norway and Turkey, and in centres for children under age 3 in Germany, Israel and Norway, positive associations are also observed between staff perceptions of pedagogical leadership and staff confidence in their ability to work across a number of specific areas, such as adapting their work to individual child needs (Table C.4.35).

Lastly, leaders' engagement in pedagogical leadership activities appears also positively related to staff's actual reported practices with children at the centre level. For instance, staff who perceive that their centre leaders clearly succeed in ensuring that staff feel responsible for their children's learning and development or in ensuring that staff take responsibility for improving their practices are more likely to report the use of practices for facilitating children's literacy development at the centre level in eight out of nine countries. Similar results are observed for other staff practices such as facilitating prosocial behaviour or emotional development (Table C.4.36).

Leaders' engagement in pedagogical work is associated with staff attitudes and behaviours indicative of process quality in ECEC centre

In centres where staff report that leaders set a clear vision or ensure that staff feel responsible for children's development, staff also report a stronger sense of self-efficacy in all participating countries.

Practices for facilitating children's literacy development, prosocial behaviour and emotional development are more frequent in centres where staff perceive a strong pedagogical leadership.

The structure of ECEC centre leadership

Leadership functions or tasks may be structured in different ways. They can be exercised by a formal centre leader alone in a hierarchical manner or may be distributed among a team or shared with ECEC staff. This is referred to as distributed leadership, in contrast to a hierarchical structure, although there is a continuum of structures between them (Douglass, 2019[5]). While parents and children can also be involved in centre decision making, this volume focuses on the involvement of staff specifically.

Staff are generally positive about the possibility to influence decisions in their ECEC centres, but distributed leadership, as reported by staff in ECEC centres, is not equally widespread in all countries. While more than 90% of staff "agree" or "strongly agree" that leadership is distributed in Israel (at both the pre-primary level and in centres for children under age 3) and Turkey, less than 80% of pre-primary staff do so in Chile, Japan and Norway (see Figure 4.15). Leaders also generally report that their ECEC centre offers opportunities for staff to be involved in decision making and a culture of shared responsibility. However, in Chile, Iceland, Israel (for both levels of education) and Japan, centre leaders also "strongly agree" with the statement that they take the important decisions on their own (Table C.4.26).

Analyses in this volume suggest that pedagogical and distributed leadership often go hand in hand, as leaders who report a distributed approach to leadership also report greater engagement to support their staff in pedagogical tasks (see Figure 4.16). Moreover, staff who perceive leadership as being distributed in their centres tend to collaborate more with their colleagues (see Figure 4.18).

Organisational cultures and structures can also influence the autonomy and independence of staff over their work, which in turn can influence staff satisfaction, motivation and retention. Results from TALIS Starting Strong reveal, in all participating countries, a positive association between distributed leadership structures and different indicators of staff satisfaction. Compared to staff who perceive fewer opportunities for participating in centre decisions, staff who strongly agree that the centre leader encourages all staff to have a say in important decisions are at least twice as likely to report that they enjoy working at their centre, to recommend their centre as a good place to work or to be satisfied with their job overall (see Figure 4.19).

Distributed leadership is associated with staff satisfaction, but there seems to be scope to further distribute leadership in ECEC centres in some countries

The percentage of pre-primary staff who "agree" or "strongly agree" that staff are involved in centre decisions ranges from 95% in Israel to 73% in Japan.

In all participating countries, staff who "strongly agree" that their centre leader encourages all staff to have a say in important decisions are the most likely to report overall satisfaction with their job.

The context of ECEC centre leadership

The characteristics of ECEC centres, such as their size or level of autonomy, as well as the initial preparation and continuous development of leaders shape the conditions for leaders to engage in their different functions. These contextual factors also influence the possibilities for establishing a climate of trust and openness among staff and leaders, thereby influencing leadership and management practices within ECEC centres. Compared to leaders in the smallest centres within countries, leaders in the largest centres tend to spend less time interacting with children in all countries, at both the pre-primary level and in centres for children under age 3 (see Figure 4.7), and more time on administration in Denmark (with low response rates), Iceland and Norway at the pre-primary level, and in Germany at both levels (see Figure 4.8).

In turn, leaders' engagement in pedagogical leadership varies little by their level of qualification or experience, whereas it differs by the focus of training that leaders have completed (see Table 4.1). In Israel and Korea at the pre-primary level, and in Germany in centres for children under age 3, leaders whose training included pedagogical leadership engage more frequently in this type of task than leaders without training in that area. The same holds true regarding general training to prepare leaders to work in early childhood in Japan, Korea and Turkey at the pre-primary level (see Table 4.1). Further, at the pre-primary level in Germany and Israel, leaders who reported that planning for staff professional development was part of their responsibilities also reported more engagement in different pedagogical leadership tasks than those without responsibilities in this area (Table C.4.18).

Leaders' working conditions are another important aspect of the context that influences how effectively they can manage and lead the work of their ECEC centre, by contributing to their job satisfaction and well-being. As analysed in this volume, leaders across countries are highly satisfied with their jobs and highly enjoy working at their current ECEC centres. At the same time, however, they are generally less satisfied with their salaries and terms of employment (see Figure 4.21). Among sources of work-related stress, administrative workload features among the most important issues for leaders (Table C.4.10).

Initial preparation can support ECEC centre leaders in their engagement in pedagogical leadership tasks by providing the relevant knowledge in related areas

Training in early childhood and pedagogical practice is associated with greater engagement in pedagogical leadership on the part of ECEC centre leaders.

Policy pointers

The findings above point to the following policy levers to make the most of the ECEC centre leadership profession and support ECEC centre leaders in shaping the organisational conditions in which staff thrive and children learn and develop.

Set the conditions for ECEC centre leaders to fulfil their multiple functions, and develop a shared understanding of how they can best support process quality in ECEC centres.

The leadership of ECEC centres entails a variety of functions and responsibilities, the balance of which differs across and within countries depending on specific contexts and needs. Regardless of particular job profiles, the ECEC centre leadership role entails the juggling of multiple tasks and the careful management of time and resources. The demanding nature of ECEC centre leadership should be sufficiently reflected in employment conditions, such as remuneration, to help attract staff to leadership roles and encourage them to stay. Adequate support systems may help mitigate work-related stress, such as the one stemming from too much administrative work, and support leaders in balancing their functions.

Supporting ECEC centre leaders in fulfilling their multiple functions also requires attention to aspects such as the size of centres or the extent of the centre's autonomy, and the particular demands they create. Based on the analyses for this volume, centre size, for example, appears to be an important factor influencing the way centre leaders spend their time, be it on interactions with children, administrative tasks or pedagogical leadership. Centres of different sizes may hence require different resources and supports as well as leadership structures.

To support leaders in fulfilling the many demands on their time, different actors in the ECEC sector should have a clear and shared understanding of the nature of the leadership role, and those aspects which best support staff in working with children, while recognising that leaders' engagement in their functions also depends on the centre's specific context, such as the composition of the children in the centre. The different leadership functions, such as centre administration or work with parents and the community, have their respective roles to play in supporting staff and fostering process quality. However, leading the pedagogical work of ECEC centres should make up a significant part of ECEC centre leaders' role in practice, and leaders should have opportunities to develop their competencies in this area. As also suggested by analyses in this volume, the content of leadership preparation may help set expectations to engage in specific functions and to develop the necessary skills to fulfil them.

Support the development of distributed leadership structures in ECEC centres, without creating a burden on staff.

Distributed leadership structures may not only help ECEC centre leaders to fulfil their different functions and strengthen the quality of leadership in ECEC centres overall, but may also help to motivate and retain staff by giving them a sense of ownership over their work and centre. Data from the survey suggest that, from the perspective of staff, distributed leadership structures are not always well established in different countries, and could be further developed.

The further distribution of leadership also depends on organisational cultures and climates in ECEC centres and the opportunities individual ECEC centre leaders create for staff (and others, such as parents) to participate in the centre's decision making. For instance, leaders can establish specific organisational structures and processes that foster leadership, encourage staff to take on responsibilities, and provide feedback to them. Moreover, it depends on staff themselves exercising agency and taking on informal leadership within their centre, for example by mentoring colleagues or engaging with parents.

However, also policy can support a more broadly shared distribution of leadership tasks and responsibilities. For instance, various models for distributing leadership could be part of the preparation of ECEC centre leaders, while staff could also learn about leadership research, theory and practice as part of their initial or continuous training. Policy can furthermore create specific middle leadership positions with differentiated pedagogical or administrative roles, which, combined with related preparation and training, can help establish an effective leadership pipeline. This volume provides some policy examples for such structures in ECEC centres, such as the role of leading teacher in Israel and the distinction between head teachers and pedagogical leaders in Norway.

How do countries perform?

The indicators of the scoreboard on ECEC centre leadership and management illustrate the different leadership profiles across countries in terms of functions and structures, and highlight areas that may be considered to further develop the leadership capacity in ECEC centres in different countries.

Looking at leader responsibilities and centre autonomy, the hiring of staff represents a key process to ensure not only that staff are qualified, but also to shape the organisational climate and culture of an ECEC centre and to create a good match between individuals and the organisation. Pre-primary leaders in Israel and Turkey, in particular, are less likely to report that they have significant responsibility for appointing staff than in other countries, although this is also true for Chile and Japan, albeit to a lesser extent. In Iceland and Norway (for both pre-primary centres and centres for children under age 3), a large share of leaders report having significant responsibilities for hiring staff and low levels of dissatisfaction with their degree of influence (Indicators C.1 and C.2).

In terms of the different leadership functions, Israel, especially for centres for children under age 3 but also for pre-primary centres and to some extent Turkey appear to combine effective pedagogical and administrative leadership. In these countries, a relatively small percentage of leaders report being stressed by administrative work while a relatively large percentage of staff report that performance are managed effectively (Indicators C.3 and C.4). Large percentages of staff in these countries also report that leaders support staff in their practices, which reflects that pedagogical leadership is exercised (Indicators C.5 and C.6). Germany appears as a country where administrative and pedagogical leadership could become more effective.

In Chile and Japan both formal and informal communication with parents is frequent. In Iceland and Norway, for both levels of education, large shares of centres also communicate with parents informally every day, but formal forms of engagement are much less frequent (Indicators C.7 and C.8). Work with the local neighbourhood seems to be particularly important to leaders and centres in Korea and Turkey, and less so in Germany and Norway for both pre-primary leaders and leaders of centres for children under age 3 (Indicator C.9). Communication with staff and/or leaders from other ECEC centres appears to be most frequent at pre-primary level in Israel and Japan, and in Norway in both pre-primary education and centres for children under age 3 (Indicator C.10).

Leadership is particularly strongly shared with staff in ECEC centres in Israel but less so in Chile, Japan and Norway (Indicator C.11).

With regards to leaders' initial training and professional development, a particularly high share of pre-primary leaders report having been trained in pedagogical leadership in Norway, but also in Chile,

Iceland, Japan and Korea (Indicator C.12). Participation in peer and/or self-observation and coaching as part of their continuous professional development during the 12 months prior to the survey is more common in Korea and for pre-primary leaders and leaders of centres for children under age 3 in Israel (Indicator C.13). A lack of available staff to compensate for the leader's absence seems to be a particular barrier in Korea, and to some extent in Japan, at least compared to other countries (Indicator C.14).

Working conditions seem to be especially favourable for leaders in Norway at pre-primary level and in centres for children under age 3, with a comparatively high share of leaders reporting being satisfied with their salary and a low share of leaders reporting requiring more support from their authorities. In Chile and Turkey, leaders are relatively satisfied with their remuneration, but at the same time, a relatively large share of leaders report needing more support from their authorities (Indicators C.15 and C.16).

Policy area: Equity

The provision of high-quality early childhood education and care is increasingly seen as a strategy to level the playing field in social and economic life by giving all children, and especially those from disadvantaged backgrounds, a strong basis for early development and well-being (OECD, 2017[3]). Countries participating in TALIS Starting Strong share the challenge of ensuring a high quality of ECEC across centres serving different populations of children and with varying levels of resources. Promoting equity through and within the ECEC system requires a strategic distribution of the strengths of the ECEC workforce, including in terms of professional development, working conditions and leadership.

TALIS Starting Strong data provide an opportunity to investigate the extent to which staff's education and professional development, staff's working conditions and leadership vary with the characteristics of the children in the ECEC centre and shortages of material and human resources. This analysis allows investigating whether more challenging ECEC centres, either because they serve a more diverse population of children or because they lack material or human resources, are aided by more favourable staff training profiles and working conditions and by stronger leadership.

Main findings

How staff training profiles vary according to the diversity of the children in the ECEC centre

Results in the first volume of TALIS Starting Strong show that, in all participating countries, staff with higher educational qualifications are equally likely to work in ECEC centres where the proportion of children from socio-economically disadvantaged homes is above 10% than in centres where this proportion is smaller (OECD, 2019[1]). Analyses in this volume suggest that ECEC staff training pathways are also broadly similar between centres with higher and lower proportions of children from disadvantaged homes as well as of children whose first language is different from the language used in the ECEC setting that they attend. This holds true for both staff's completion of an initial preparation programme focused on working with children and staff's participation in recent in-service training, and in both pre-primary centres and in centres for children under age 3, again in most participating countries. However, a positive finding is that in Chile, Denmark (with low response rates) and Turkey, at the pre-primary level, and in Germany, for centres for children under age 3, staff levels of participation in in-service training are actually higher in ECEC centres with more diverse populations of children (Table C.2.24).

Staff training trajectories in the area of working with a diversity of children paint a similar picture. For instance, the proportion of staff covering the area of working with a diversity of children in both their pre-service education and recent in-service training is greater in centres with a higher proportion of children from socio-economically disadvantaged homes than in centres with more advantaged children in Chile, Denmark (with low response rates) and Israel at the pre-primary level, and in Denmark (with low response

rates) and in Israel in centres for children under age 3. This percentage is also larger in ECEC centres where more children speak a different language at home than in more linguistically homogeneous centres in Germany, Iceland and Norway at the pre-primary level, and in Germany in centres for children under age 3 (see Figure 2.17).

Overall, evidence from TALIS Starting Strong suggests a generally good alignment between the training profiles of ECEC staff and the socio-economic and cultural/linguistic composition of the populations of children that they work with, in that greater numbers of staff trained specifically to address diversity actually work in the ECEC centres where such skills are arguably needed the most in their respective countries.

ECEC staff training profiles respond to the challenges associated with diverse groups of children in ECEC settings

In Chile, Denmark and Israel at the primary level, and in Israel and Denmark in centres for children under age 3, the share of staff trained for addressing diversity is larger in ECEC centres with a high rather than a low proportion of children from disadvantaged homes, and in no country is this share smaller in the more challenging centres.

How staff working conditions vary according to the characteristics of the ECEC centre

If staff's working conditions and well-being vary across centres according to certain characteristics, like the composition of the children in the centre, then some centres will have difficulties attracting or retaining staff or delivering high-quality ECEC.

Analyses in this volume suggest that there are no systematic differences in staff's working conditions according to the composition of the children in the centre. A couple of cases can be identified where working conditions tend to be less supportive in centres with a larger diversity of children. In Iceland, staff work longer hours and are less satisfied with their salary in centres with a larger diversity of children. In Israel (pre-primary), staff in centres with a larger diversity of children report more need for support from leaders. There are also a limited number of cases where working conditions tend to be more supportive in centres with a larger diversity of children. In Israel in centres for children under age 3 with a larger share of children from socio-economically disadvantaged homes, staff are more satisfied with their salary. In Turkey, staff in centres with a larger share of children from socio-economically disadvantaged homes report less stress from a lack of resources.

Staff's working conditions can also be analysed according to the availability of both material and human resources, but again, no specific patterns emerge. However, staff in centres where leaders report a lack of resources also report being stressed by the lack of resources in Chile, Germany and Israel (both levels of education), Iceland, and Korea, which illustrates how inequity in resources can be linked to staff's well-being.

Overall, these results suggest that differences between centres in terms of the composition of children or the availability of resources are associated only to a limited extent with less favourable working conditions. These results also suggest that staff working in more challenging centres are generally not compensated with higher salaries, shorter working hours or more support from their leaders.

ECEC staff's working conditions do not systematically support staff in challenging centres

There are no systematic differences in staff's working conditions according to the composition of children in the centre.

Staff in centres where leaders report a lack of resources report being stressed by the lack of resources in Chile, Germany and Israel (both levels of education), Iceland, and Korea.

How leadership varies according to the characteristics of the ECEC centre

All ECEC centres should have the leadership required to provide a high-quality environment for children to learn and develop and thus help equalise their opportunities in life. Analyses in this volume explore whether select key leadership functions differ in relation to centres' resources and children's characteristics.

The resources available to centres and centre leaders are in some countries associated to leaders' functions. For instance, in Denmark (with low response rates) and Korea at the pre-primary level, and in Germany and Israel in centres for children under age 3, leaders in centres with low levels of human resources, as perceived by leaders, spend more time on administration than leaders in centres with high levels of resources (Table C.4.44). This may mean that they have less time available to dedicate to other functions, such as their pedagogical leadership role or engagement with families and the community.

Aspects of pedagogical leadership also appear related to shortages in resources, although less consistent relationships emerge across countries than for administrative leadership. Notably, pre-primary staff in Denmark (with low response rates) and Iceland in centres with low levels of human resources are less likely to "strongly agree" with statements such as their centre leader encourages co-operation among staff to develop new ideas in their practices. In Turkey, by contrast, staff in centres with low levels of human resources are more likely to report strong agreement with statements like the centre leader ensures that staff take responsibility for improving their practice (Table C.4.45).

Similarly, engagement with parents, as reported by leaders, differs between centres with different levels of resources, again at least in some countries. In Israel (both levels of education) and Japan, centres with low levels of human resources engage informally with parents to a lesser extent than centres with high levels of human resources. In Germany (in centres for children under age 3) and Iceland, on the other hand, a shortage in material resources is related to higher levels of informal communication with parents (Table C.4.49).

In most countries, leadership functions show little variation according to the socio-economic composition of the ECEC centre. Overall, results suggest that more disadvantaged centres have similar conditions to provide a quality environment for children, at least in terms of leadership (Table C.4.46).

Overall, more challenging ECEC centres appear to have similar leadership conditions to provide a quality environment for children to learn and develop

Staff perceptions of the quality of pedagogical leadership, such as leaders setting a vision for the centre, are overall similar across centres with a different composition of children in the centre.

Leadership functions differ in some respects by the level of available resources. For instance, in Germany, Israel and Korea, leaders in centres with low levels of human resources spend more time on administration.

Policy pointers

Equity considerations are transversal to the three pillars identified in this volume as policy levers for building a high-quality ECEC workforce, which in turn is essential to enable early childhood education and care to act as a levelling force in social and economic life. The findings above point to a common policy pointer across the three pillars:

> *Target enhancements in staff professional development and working conditions and in leadership development in ECEC centres with more vulnerable and diverse populations of children.*

While results from TALIS Starting Strong yield little evidence that staff training profiles, staff working conditions and leadership capacity are systematically less favourable in ECEC centres with a higher share of children from socio-economically disadvantaged homes or whose first language is different from the language used in the centre, strong reasons remain for ECEC systems to make these centres a priority in efforts to attract, develop and retain a high-quality workforce.

The resources of centres and the characteristics of the children that attend them are highly visible to parents and staff. Programmes that explicitly incentivise staff and leaders with strong skills to join and remain in these centres are a way to signal a strong commitment to quality, and thus to reduce the risk that some families avoid these centres based on other considerations, in some cases accentuating segregation patterns.

At the same time, providing professional development opportunities for staff and leaders in line with the specific needs of their centres, and improving their well-being and satisfaction at work, are ways to influence process quality in ECEC settings. The richer the interactions between staff and children, and between staff and parents, the greater the chances that ECEC centres compensate for socio-economic vulnerability or for potential cultural and linguistic difficulties for integrating society.

With this view, ECEC systems may consider staffing and professional development policies that create favourable working conditions for staff and leaders in these centres, ranging from financial incentives, special training entitlements, dedicated mentoring and coaching programmes to reducing the workload so as to help ensure a focus on the children that need it the most. These and similar measures require allocating more material and human resources to ECEC centres with more vulnerable and diverse populations of children. Commitment to work in these centres could also be weighted favourably in career progression tracks.

How do countries perform?

In Germany, both at the pre-primary level and in centres for children under age 3, staff working in centres with more than 10% of the children from socio-economically disadvantaged homes have almost universal levels of completion of initial preparation programmes with a focus on working with children, but coverage of training contents related to diversity in both pre-service and recent in-service training is relatively low, Both types of training could be provided more extensively to pre-primary staff in Iceland and Turkey (Table 1.2, Indicators D.1 and D.2).

In turn, Chile and Norway, at the primary level, and Israel, at both levels of education, are countries where staff training for addressing diversity responds more to the socio-economic composition of the children in the ECEC centres, which suggests attention to equity issues in staffing polices (Table 1.2, Indicator D.3).

In all countries except Norway and Turkey for pre-primary centres and Germany for centres for children under age 3, staff working in centres with more than 10% of the children from socio-economically disadvantaged homes are more likely to report a need for more support from leaders (Table 1.2, Indicator D.4). Staff working in these centres are slightly more likely to be satisfied with their salary only in Germany and Israel for both levels of education (Table 1.2, Indicator D.5). In all countries, but especially in Iceland for pre-primary and Germany for both levels of education, staff in centres with a shortage of material resources are more likely to be stressed by a lack of resources (Table 1.2, Indicator D.6).

In centres with a high concentration of socio-economically vulnerable children, staff perceptions about encouragement from leaders are most positive in Israel, at both the pre-primary level and in centres for children under age 3, while staff in Norway, also at both levels, hold the least favourable views (Table 1.2 Indicator D.7). In turn, levels of informal communication with parents or guardians in centres with the same profile are the highest in Iceland and Norway and relatively low in Korea at the pre-primary level, and in Israel at both levels (Table 1.2, Indicator D.8). Considering formal types of communication with parents or guardians, engagement is most frequent in centres with more than 10% of the children from socio-economically disadvantaged families in Chile and Israel at the pre-primary level. The level of formal communication in centres serving a higher share of socio-economically vulnerable children is particularly low in Norway at the pre-primary level (Table 1.2, Indicator D.9). Few comparisons in equity indicators are possible in Japan and Korea, given the small variation in the socio-economic composition of children in ECEC centres captured by the survey in these countries.

Table 1.2. Data overview: Towards a high-quality ECEC workforce

				Pre-primary education (ISCED 02)									Centres for children under age 3			
				Chile	Germany*	Iceland	Israel	Japan	Korea	Norway	Turkey	Denmark**	Germany*	Israel	Norway	Denmark**
A. Staff education, training and skills development	A.1	Pre-service education and training	Percentage of staff whose highest level of education is above secondary level (ISCED Level 4 or higher)	87	77	52	61	99	96	67	92	75	81	63	68	72
	A.2		Percentage of staff who completed pre-service education or training that prepared them specifically to work with children	74	97	64	77	94	79	77	72	70	95	71	74	64
	A.3		Among staff whose pre-service education or training prepared them specifically to work with children, percentage of staff whose preparation programme included a practical module	45	78	71	74	92	82	74	75	39	80	81	78	32
	A.4		Average number of thematic areas (out of 9) covered by staff in their pre-service education or training that prepared them specifically to work with children	7	7	7	7	8	8	8	8	7	7	7	7	7
	A.5		Percentage of novice teachers whose pre-service education or training that prepared them specifically to work with children included contents related to working with a diversity of children	78	84	83	83	97	85	89	94	85	84	58	98	87
	A.6	In-service training	Percentage of staff having participated in in-service training in the 12 months prior to the survey	83	82	87	79	85	97	94	83	78	83	79	94	79
	A.7		Average number of thematic areas (out of 9) covered by staff in in-service training in the 12 months prior to the survey	5	3	3	5	6	6	4	3	4	3	5	4	4
	A.8		Percentage of staff who participated in peer and/or self-observation and coaching as part of a formal arrangement as part of their in-service training in the 12 months prior to the survey	37	20	27	48	46	63	39	28	45	16	37	40	46
	A.9		Percentage of staff who participated in induction or mentoring activities as part of their in-service training in the 12 months prior to the survey	21	14	32	59	53	62	11	25	11	16	66	9	11
	A.10	Informal learning	Percentage of staff engaging in discussions with colleagues about children's development, well-being and learning on a "weekly" or "daily" basis	43	57	67	41	63	38	82	60	90	60	46	80	91
	A.11		Percentage of staff providing feedback to other staff about their practice on a "weekly" or "daily" basis	41	39	48	46	27	30	70	59	63	40	47	69	61

				Pre-primary education (ISCED 02)									Centres for children under age 3			
				Chile	Germany*	Iceland	Israel	Japan	Korea	Norway	Turkey	Denmark**	Germany*	Israel	Norway	Denmark**
	A.12	Alignment between pre-service and in-service training	Percentage of staff having covered contents related to child development in both their pre-service and recent in-service training	77	59	59	83	83	87	75	50	68	64	85	74	73
	A.13		Percentage of staff having covered contents related to working with a diversity of children in both their pre-service and recent in-service training	61	34	50	49	71	59	50	44	57	35	38	46	51
	A.14		Percentage of staff having covered contents related to pedagogy in both their pre-service and recent in-service training	53	24	39	64	24	59	42	30	52	25	46	44	46
	A.15		Percentage of staff who "agree" or "strongly agree" that there is no relevant professional development offered	53	27	27	23	33	65	14	23	33	28	24	11	33
	A.16	Professional development needs	Percentage of staff reporting a "high" level of need for further professional development for working with a diversity of children	63	39	37	40	82	30	37	25	25	35	43	37	23
B. Staff working conditions and well-being	B.1	Earnings quality and job security	Percentage of staff who "agree" or "strongly agree" with the statement "I am satisfied with the salary I receive for my work"	31	26	10	33	23	37	30	39	36	29	16	30	32
	B.2		Percentage of staff with a permanent contract	66	83	78	80	61	24	88	76	90	82	87	88	91
	B.3	Career progression opportunities	Percentage of staff reporting that "Working in a different job not in the ECEC sector" is the most likely reason to leave the ECEC staff role	9	3	25	6	10	15	19	5	16	4	12	15	13
	B.4	Workload and job content	Average number of weekly hours spent on tasks related to the job at the ECEC centre	44	40	33	34	50	47	35	37	35	40	37	33	37
	B.5		Average number of weekly hours worked without children spent on tasks related to the job at the ECEC centre	13	8	7	10	17	18	8	8	8	8	9	8	8
	B.6	Quality of working environment in ECEC centres	Percentage of staff who "agree" or "strongly agree" that the ECEC centre leader encourages all staff to have a say in important decisions	76	82	85	95	73	82	77	90	86	83	93	81	86
	B.7		Percentage of staff reporting they engage "weekly" or "daily" in working with other ECEC staff to discuss the evaluation of children's development and well-being	46	52	65	34	64	46	72	60	51	53	41	70	54
	B.8		Percentage of staff reporting they "agree" or "strongly agree" that they need more support from their ECEC centre leader	51	32	25	31	41	72	32	45	25	26	48	32	27
	B.9	Staff well-being	Percentage of staff who "agree" or "strongly agree" that ECEC staff are valued in society	40	36	33	75	31	47	52	50	61	37	56	58	55

				Pre-primary education (ISCED 02)									Centres for children under age 3			
				Chile	Germany*	Iceland	Israel	Japan	Korea	Norway	Turkey	Denmark**	Germany*	Israel	Norway	Denmark**
	B.10	Overall job satisfaction	Percentage of staff who "agree" or "strongly agree" with the statement "All in all, I am satisfied with my job"	97	93	96	98	81	79	97	95	96	94	96	97	95
	B.11	Sources of stress	Percentage of staff reporting that "having too many children in their classroom/playgroup/group" is "a lot" a source of stress	18	29	39	34	9	29	31	16	24	22	25	25	31
	B.12		Percentage of staff reporting that "a lack of resources (e.g. financial , material, staff)" is "a lot" a source of stress	18	29	26	22	27	33	26	21	36	21	36	23	37
	B.13		Percentage of staff reporting that "accommodating children with special needs" is "a lot" a source of stress	12	10	10	13	15	12	10	11	16	7	8	5	10
	B.14		Percentage of staff reporting that having "too much administrative work to do" is "a lot" a source of stress	19	16	4	16	21	38	10	15	20	14	1	7	17
	B.15	Motivation to leave or join the sector	Percentage of staff indicating "resolving health-related issues" as the most likely reason to leave the ECEC role	13	25	20	3	15	24	10	11	7	21	4	10	11
	B.16		Difference in the percentage of staff reporting "resolving health-related issues" as the most likely to leave the profession, between high minus low stress from "having too many children in the classroom/playgroup/group" (percentage points)	3	8	14	0	9	3	8	-2	5	5	0	7	8
C. Leadership and management	C.1	Centre autonomy	Percentage of ECEC centre leaders reporting that they and/or other centre staff have significant responsibility for appointing or hiring staff	53	76	100	10	45	77	85	11	92	76	79	77	97
	C.2		Percentage of ECEC centre leaders who "agree" or "strongly agree" that they are dissatisfied with the influence they have over choosing the staff working in their centre	43	28	17	58	14	26	14	51	23	29	22	8	18
	C.3	Administrative leadership	Percentage of ECEC centre leaders who report that having too much administrative work to do is "quite a bit" or " a lot" of stress when thinking about their job at the centre	60	79	38	72	63	56	55	46	50	83	37	44	74
	C.4		Percentage of staff who "agree" or "strongly agree" that their ECEC centre leader ensures that staff performance is managed effectively	87	83	86	98	78	84	90	90	86	87	97	87	86
	C.5	Pedagogical leadership	Percentage of staff who "agree" or "strongly agree" that their ECEC centre leader ensures that staff take responsibility for improving their practices	87	87	90	96	91	91	87	95	90	89	97	86	93
	C.6		Percentage of staff who "agree" or "strongly agree" that their ECEC centre leader encourages co-operation among staff to develop new ideas in their practices	84	85	91	96	86	89	89	91	94	86	96	91	92

			Pre-primary education (ISCED 02)									Centres for children under age 3			
			Chile	Germany*	Iceland	Israel	Japan	Korea	Norway	Turkey	Denmark**	Germany*	Israel	Norway	Denmark**
C.7	Engagement with parents	Percentage of ECEC centre leaders who report that formal communication with parents or guardians takes place at the centre on a "monthly", "weekly" or "daily" basis	90	33	8	50	96	29	13	57	52	23	34	10	44
C.8		Percentage of ECEC centre leaders who report informal communication with parents or guardians takes place at the centre on a "weekly" or "daily" basis	77	73	83	58	83	62	97	56	91	74	67	97	100
C.9	Community and partnerships	Percentage of ECEC centre leaders who report that the centre works with the local neighbourhood "quite a bit" or "a lot"	45	33	49	47	47	67	33	69	50	34	34	34	47
C.10		Percentage of ECEC centre leaders who report that the centre communicates with staff and/or leaders from other ECEC centres on a "monthly", "weekly" or "daily" basis	66	49	60	76	76	57	81	51	77	52	68	81	85
C.11	Distributed leadership	Percentage of staff who "agree" or "strongly agree" that their ECEC centre leader encourages all staff to have a say in important decisions	76	82	85	95	73	82	77	90	86	83	93	81	86
C.12	Professional development for leaders	Percentage of ECEC centre leaders whose initial education or training included pedagogical leadership	84	35	83	75	83	87	96	74	71	43	85	94	77
C.13		Percentage of ECEC centre leaders who participated in peer and/or self-observation and coaching formal arrangements as part of their in-service training in the 12 months prior to the survey	48	36	50	57	42	76	45	34	60	34	47	40	51
C.14		Percentage of ECEC centre leaders who "agree" or "strongly agree" that not having enough staff to compensate for their absence represents a barrier to participation in professional development	48	47	44	49	56	80	39	35	31	53	53	43	29
C.15	Leaders' working conditions	Percentage of ECEC centre leaders who "agree" or "strongly agree" that they are satisfied with the salary they receive for their work	54	36	36	39	34	43	54	51	39	29	35	56	34
C.16		Percentage of ECEC centre leaders who "agree" or "strongly agree" that they need more support from their local, municipality/regional, state or national/federal authorities	74	57	63	69	89	88	21	83	31	55	64	26	33

			Pre-primary education (ISCED 02)									Centres for children under age 3			
			Chile	Germany*	Iceland	Israel	Japan	Korea	Norway	Turkey	Denmark**	Germany*	Israel	Norway	Denmark**
D. Equity	D.1	Equity: Staff skills development	Among staff in ECEC centres with more than 10% of children from socio-economically disadvantaged homes, percentage of staff having completed pre-service education or training that prepared them specifically to work with children	74	97	74	81			79	76	72	94	73	75	
	D.2		Among staff in ECEC centres with more than 10% of children from socio-economically disadvantaged homes, percentage of staff having received training for working with a diversity of children as part of both their pre-service and recent in-service training	41	27	31	40			48	26	40	29	29	33	44
	D.3		Difference in the percentage of staff having received training for working with a diversity of children as part of both their pre-service and recent in-service training between ECEC centres with a high vs. low concentration of children from socio-economically disadvantaged homes (high minus low, percentage points)	11	6	3	12			15	-3	12	6	12	3	21
	D.4	Equity: Staff working conditions	Difference in the percentage of staff who report that they need more support from their centre leader, between ECEC centres with a high vs. low concentration of children from socio-economically disadvantaged homes (high minus low, percentage points)	5	5	4	16			-10	-3	1	-4	4	4	
	D.5		Difference in the percentage of staff who report being satisfied with their salary, between ECEC centres with a high vs. low concentration of children from socio-economically disadvantaged homes (high minus low, percentage points)	-7	2	-6	3			0	0	4	7	1	-5	
	D.6		Difference in the percentage of staff who feel stressed by a lack of resources, between ECEC centres with a high vs. low shortage of material resources (high minus low, percentage points)	17	30	25	14	3	7		0		30	14		

			Pre-primary education (ISCED 02)									Centres for children under age 3			
			Chile	Germany*	Iceland	Israel	Japan	Korea	Norway	Turkey	Denmark**	Germany*	Israel	Norway	Denmark**
D.7	Equity: Leadership and management	Among staff in ECEC centres with more than 10% of children from socio-economically disadvantaged homes, percentage of staff who "strongly agree" that their centre leader encourages co-operation among staff to develop new ideas in their practices	47	48	52	64			40	57	51	55	65	45	
D.8		Among leaders in ECEC centres with more than 10% of children from socio-economically disadvantaged homes, percentage of staff who report that informal communication with parents or guardians takes place on a "weekly" or "daily" basis	77	78	100	48		32	95	56	83	81	54	93	100
D.9		Among leaders in ECEC centres with more than 10% of children from socio-economically disadvantaged homes, percentage who report that formal communication with parents or guardians takes place on a "monthly", "weekly" or "daily" basis	93	32	28	67		19	4	56	51	20	25	22	44

Notes: All indicators are shaded from less positive outcomes in white to more positive outcomes in dark blue for eight countries with data for pre-primary education (ISCED Level 02) and for three countries with data for centres for children under age 3. These shadings were applied without consideration to statistically significant differences between countries or to the specific policy contexts within each country. Missing values are coloured grey. More detailed information on each of these indicators is available throughout this report.

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.

** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.

Information on data for Israel: https://oe.cd/israel-disclaimer

Source: OECD, TALIS Starting Strong 2018 Database

StatLink https://doi.org/10.1787/888934206360

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2 Staff education, training and skills development in early childhood education and care

Building on rich information about initial preparation programmes and recent professional development activities, this chapter investigates the breadth and alignment of the pre-service and in-service training of early childhood education and care (ECEC) staff, as well as their engagement in collaborative practices that provide opportunities for informal learning. Skills developed through these pathways are essential to sustain process quality in ECEC settings, and the chapter also explores the associations between the training trajectories of staff, their sense of self-efficacy and their practices with children. It concludes with a discussion of how staff training profiles vary across centres serving more and less diverse groups of children.

Key messages

- Options for developing the skills of early childhood education and care (ECEC) staff encompass initial preparation programmes, in-service training and practices that promote informal learning.
- Across countries in TALIS Starting Strong, pre-service education or training focused on working with children is not universal, ranging from 64% of ECEC staff in Iceland to 97% of staff in Germany. Among staff with such initial preparation, about 70% of staff completed a programme that included a practical module, with up to 92% in Japan. Staff whose programmes included a practical component covered more training areas than staff whose programmes did not.
- Across countries in TALIS Starting Strong, fewer assistants than teachers participate in in-service professional development activities, especially in Chile and Israel.
- The content covered by ECEC staff in their initial preparation and recent in-service training largely overlaps. ECEC staff training trajectories suggest that ongoing professional development serves mainly to deepen or update areas already included in pre-service training. While initial preparation is comprehensive in all countries, more differences exist in the number of areas covered by staff in in-service training activities, which is the highest in Korea and the lowest in Germany, Iceland and Turkey.
- Centre-embedded models of professional development remain less common than off-site courses and seminars. On average across countries, only 44% of ECEC staff received coaching by an external person; less than 40% engaged in formal peer or self-observation activities or visits to other centres; and only 32% were involved in induction or mentoring activities. Teachers in Israel and, to a lesser extent, Korea and Japan, report the highest levels of participation in centre-embedded training activities.
- Collaborative professional practices are key avenues for informal learning. ECEC staff who engage more in collaboration in their centres are also more likely to participate in structured training activities, underscoring the positive interplay between formal and informal channels for skills development. Staff in Norway stand out for their strong engagement in feedback exchanges and joint activities with peers and their high levels of participation in training.
- Across countries, ECEC staff are generally most confident about their ability to promote children's socio-emotional development, but less so about working with a diversity of children and, particularly, about using digital technology to support children's learning. Staff who covered a greater number of areas in their training report a stronger sense of self-efficacy for supporting child development, learning and well-being.
- In all countries, pre-primary staff who covered a greater number of thematic areas in both pre-service and recent in-service training adapt their practices to children's needs and interests more than staff who covered less contents, as do staff in centres for children under age 3 in Israel and Norway. Training specifically for working with a diversity of children is also positively related to the use of adaptive practices in all countries. In Israel and Norway, breadth of training is also associated with a greater use of practices for behavioural support.
- Cumulative training in a given area in both pre-service and recent in-service training tends to be more strongly associated than more sporadic training with proxies of process quality, from staff sense of self-efficacy for supporting children to staff adapting to children's needs and interests.
- ECEC staff training profiles respond to the diversity of children in ECEC settings. In most of the participating countries, the share of staff with training for working with children from diverse backgrounds is greater in ECEC centres with a higher proportion of children from socio-economically disadvantaged homes or of dual language learners.

Introduction

Providing opportunities for developing the skills of early childhood education and care (ECEC) professionals is a key pillar to attract, maintain and retain a high-quality ECEC workforce. There are many ways for staff to acquire and develop the knowledge and skills that increase their professional competence and thus their ability to effectively promote children's learning, development and well-being. Pre-service education and training serve to attract and chiefly determine the skills of the younger generation, while it remains the foundation on which experienced staff can build their continuous professional development. In turn, in-service training is key to maintaining a high-quality workforce and retaining it by offering options for skill upgrading and career progression. Informal learning is another engine for skills development, most notably through professional collaborative activities and knowledge sharing among peers.

Education and training policies for the ECEC workforce need to be consistent in ensuring that staff can acquire the necessary skills, which vary according to their role, initial education and experience. This requires policies that provide coherent pathways for skills development across career stages and transitions accessible to all staff. Designing such pathways calls for aligning the content of pre-service and in-service training with the needs of staff with enough granularity as well as creating conditions for combining structured and informal learning opportunities. These issues are crucial to make the profession more attractive to potential candidates, keep staff motivated and engaged, and provide opportunities for career growth.

Policy makers can support ECEC staff in becoming lifelong learners and inquisitive professionals. Adopting a broad vision of initial preparation that comprises both pre-service programmes and support for staff during their first years on the job, and promoting professional learning and collaboration as embedded in the ongoing work of ECEC centres are key policy pointers for helping ECEC staff to continuously learn and grow (OECD, 2019[1]). In turn, ECEC staff and centre leaders have the professional responsibility to seek, identify and engage in available training activities; collaborate with colleagues to find creative solutions to their challenges at work; and integrate new knowledge and skills into their practice.

The Starting Strong Teaching and Learning International Survey 2018 (TALIS Starting Strong) is the first international survey to provide systematised information regarding the format and content of initial preparation programmes and professional development activities in the ECEC sector. This fills an important gap and complements more commonly available data about qualifications requirements for ECEC staff. Teachers, assistants and centre leaders surveyed in TALIS Starting Strong provided information on their initial preparation programmes, their work experience and the types of in-service training they received to become and grow as early childhood professionals. They also had the opportunity to report their needs for further professional development, their engagement in collaborative professional activities, their sense of self-efficacy and their practices with children. By gathering this information, the survey improves the scope and reliability of data on the ECEC workforce across countries, a contribution of particular importance in light of the diversity of training offerings and pathways to working in the sector.

The goals of this chapter are to:

- investigate the alignment between the pre-service and in-service training of ECEC staff, and how it varies depending on the role and experience of staff
- characterise ECEC staff participation in professional activities that promote informal learning
- explore the associations between the education and training trajectories of ECEC staff, their self-efficacy beliefs, and their practices with children
- examine how ECEC staff education and training profiles vary across ECEC centres that serve more and less diverse groups of children
- discuss policy implications in terms of the design and targeting of training opportunities for ECEC staff.

Framework for analysis

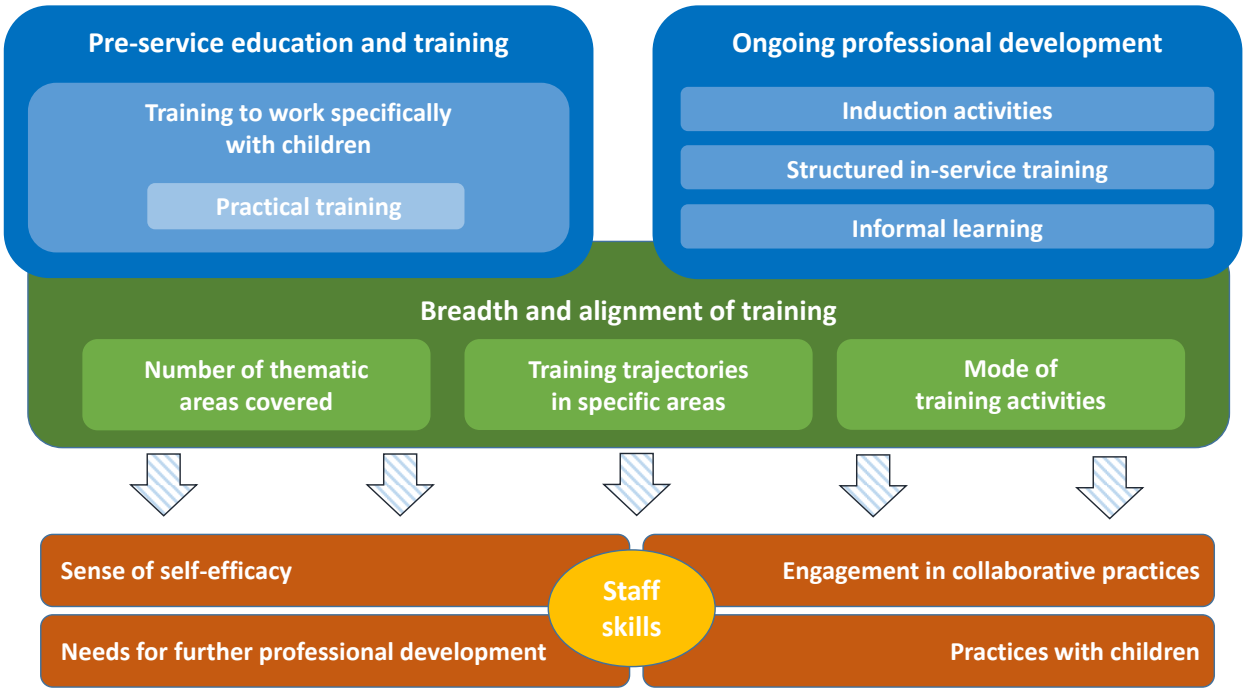
The notion of professionalism in the ECEC sector is evolving to address the increasing quality demands that societies place on early childhood education and care. ECEC staff are considered as professionals not only because they undertake formal training as required by governments, but also because they upgrade their expertise and skills on their own initiative, because they seek to advance and share knowledge through collaboration with peers, and because they own their professional practice and feel engaged to improve the quality of their work.

TALIS Starting Strong sheds new light on multiple aspects of the professionalism of the ECEC workforce. This chapter focuses on skills development pathways for ECEC staff as they derive from their participation in pre-service and in-service education training opportunities and from informal learning at the workplace, as well as on their associations with professional beliefs and practices. The chapter's analytical framework builds on the richness of the data from TALIS Starting Strong to characterise such pathways (Figure 2.1). In the pre-service phase, key indicators of interest are the completion of an education or training programme that prepared staff specifically to work with children, the contents of such programmes, and whether they involved a practical component. This complements the characterisation of the ECEC workforce by level of educational attainment presented in the first volume of TALIS Starting Strong 2018 (OECD, 2019[2]).

Opportunities for skills development beyond initial preparation programmes are examined through both formal and informal on-the-job professional development activities. As part of in-service training, the chapter looks at both induction activities organised by ECEC centres and at professional development activities undertaken by staff in the 12 months prior to the survey, examining their format and contents. The focus is therefore placed on recent training activities, acknowledging that the training record of staff may extend further back in time than this one-year window. In addition, the chapter explores opportunities for informal learning as it may stem from staff engagement in collaborative professional practices. Besides looking at participation, the chapter examines the breadth and alignment of pre-service and in-service training, aiming to shed light on differences across countries in the education and training trajectories of ECEC staff.

The second part of the chapter then explores associations between training indicators and a range of staff-level attitudinal and behavioural outcomes: perceived needs for further professional development, self-efficacy beliefs, collaboration with colleagues and practices with children. When possible, these associations are examined in relation to both the overall scope of training and to training in specific domains.

Figure 2.1. Analytical framework of skills development for early childhood education and care staff and their associations with professional beliefs and practices in TALIS Starting Strong



Throughout this chapter, the training trajectories and outcomes of ECEC staff are compared according to their roles with the target group (i.e. teachers vs. assistants, for countries for which the distinction can be made) and levels of experience (novice vs. experienced). In terms of staff roles, and according to the initial distinction made to determine participation in TALIS Starting Strong (see the Reader's Guide), teachers are those staff with the most responsibility for a group of children, whereas assistants are those staff supporting the teacher with a group of children.[1,2] In terms of experience, staff are considered novice if they have worked for three years or less in the ECEC sector, and experienced if they have worked for more than three years in the sector. This categorisation of novice staff aligns with the empirical literature and developmental models of educators' career stages (Kyndt et al., 2016[3]) and reflects the relatively large proportion of recent entrants into the ECEC profession: with a cut-off point of three years of work experience in ECEC, 27% of staff in TALIS Starting Strong are classified as novice across countries. In order to capture variation in training profiles for staff with different levels of experience and different responsibilities, the chapter combines the two criteria and breaks down results into four categories of staff: "experienced teachers", "novice teachers", "experienced assistants" and "novice assistants".[3] This yields a granular portrayal of the training trajectories and needs of different ECEC professionals. In the final section of the chapter, as a way of bringing an equity perspective to the distribution of staff according to their education and training profiles, analyses compare centres with varying proportions of children from socio-economically disadvantaged homes and whose first language is different from the language used in their ECEC centre.

The chapter distinguishes nine broad thematic areas of training for ECEC staff, based on the list of training topics included in the TALIS Starting Strong 2018 questionnaires (Table 2.1). These areas reflect major themes of ECEC education and professional development programmes as identified in the research literature and the conceptual framework of TALIS Starting Strong (OECD, 2018[4]; Sim et al., 2019[5]). In three cases, the classification involves clustering multiple topics into a single thematic area, based on theoretical reasoning and exploratory factor analysis revealing a common underlying structure for each set of topics.[4] The area "Playful learning" groups questionnaire items related to facilitating play, creativity and

problem solving. The area "Diversity" groups items about staff responding to the needs of diverse groups of children. The area "Pedagogy" groups items related to learning principles as well as to facilitating learning in specific subject matter areas. Staff are considered to have covered an area when they report that the corresponding topic was included in their training. For areas aggregating multiple topics, it is assumed that staff covered an area if they report training on at least some of the grouped topics, based on the premise of shared contents and approaches in these clusters.[5]

Table 2.1. Thematic areas of staff training and professional development in TALIS Starting Strong

Thematic area	Number of items	Topics – Item(s) wording
Child development	1	Content related to child development (e.g. socio-emotional, motor, cognitive or self-regulation)
Child health	1	Content related to child health or personal care (e.g. hygiene)
Classroom management	1	Classroom/playgroup/group management
Families	1	Working with parents or guardians/families
Monitoring	1	Monitoring/documenting child development, well-being and learning
Transitions	1	Facilitating children's transitions between stages of early childhood and primary education
Playful learning	2	Facilitating play
		Facilitating creativity and problem solving
Diversity	3	Working with children from diverse backgrounds (e.g. multicultural, economically disadvantaged, religious)
		Working with dual/second language learners
		Working with children with special needs
Pedagogy	5	Learning theories (e.g. socio-cultural, behavioural, cognitive, constructivist)
		Facilitating learning in literacy and oral language
		Facilitating learning in mathematics/numeracy
		Facilitating learning in science and technology
		Facilitating learning in arts

Notes: Staff are considered to have covered a thematic area when they report that the corresponding topic(s) was included in their training. For areas aggregating multiple topics, coverage of "Playful learning" and "Diversity" is assumed if staff report that at least one of the corresponding topics was included in their training; coverage of "Pedagogy" is assumed if staff report at least two of the corresponding items in their training. For staff in pre-primary centres, the item about facilitating transitions related to the transition from ISCED Level 0 to ISCED Level 1; for staff in centres for children under age 3, the item related to the transition from ISCED Level 01 to ISCED Level 02.

While the information collected by TALIS Starting Strong does not capture the full complexity of training offerings and pathways to working in ECEC, the survey makes an important contribution given the dearth of systematic information for comparative analysis and the great heterogeneity in the characteristics and contents of ECEC training programmes within and across countries (Bertram and Pascal, 2016[6]; Pardo and Adlerstein, 2016[7]). More specifically, the use of a consistent reference list of topics for describing the contents of pre-service and in-service training, as well as their perceived needs for further professional development, makes it possible to analyse the alignment of the training undertaken and sought by ECEC staff across different stages of their career. This chapter introduces a set of new indicators about participation in and alignment between pre-service and in-service training (Box 2.1) that are used in the analyses presented in the following sections. Further analyses may combine these indicators with information about other quality dimensions of professional development not collected by TALIS Starting Strong 2018, such as the duration of training or the qualifications and experience of trainers.

Box 2.1. Measuring participation, breadth and training trajectories in TALIS Starting Strong

Participation in training

Participation indicators are based on staff reports about their participation in training activities at different points in time:

- completion of a pre-service education or training programme that prepares them to work with children
- participation, during the 12 months prior to the survey, in any of the professional development activities listed in the questionnaire (10 options).

These two indicators serve as filters for questions about specific training contents. Staff who report not having participated in training skipped follow-up questions about the topics covered.

Breadth of training

Breadth indicators generally relate to the thematic breadth of training; that is, the variety of topics included (or sought) in training activities. Thematic breadth is measured as the number of areas that staff report having covered at different points in time, ranging from zero to nine areas (see Table 2.1). Additionally, breadth of format relates to the variety of types of in-service training activities (e.g. in-person courses, peer observation), ranging from zero to ten activities. By definition, analyses of breadth of training exclude staff that report not having participated in training. The indicators are:

- number of thematic areas covered by staff in their pre-service training programme
- number of thematic areas covered by staff in their recent in-service training activities
- number of thematic areas covered by staff both in pre-service and in recent in-service training
- number of thematic areas in which staff report a high level of need for professional development
- number of in-service training activities in which staff participated during the last 12 months.

Training trajectories

Trajectories indicators relate to staff's training records within a specific thematic area. Trajectories aim to capture staff's exposure to specific training topics (i.e. whether staff covered a given area in their training, and how many times). Given the focus on exposure to contents, analysis of trajectories generally includes all staff, not just those having participated in training. Within each area, four possible and mutually exclusive trajectories are distinguished:

- staff never covered the area (neither in pre-service nor in recent in-service training)
- staff covered the area in pre-service training but not in recent in-service training
- staff covered the area in recent in-service training but not in pre-service training
- staff covered the area in both pre-service training and recent in-service training.

Lack of training in the area is the reference category for comparisons between trajectories.

Skills development options for the early childhood education and care workforce

Pathways for skills development result from a combination of learning opportunities prior to and during service. Staff can acquire valuable skills and knowledge for their work through both structured education and training activities and through informal channels, in particular from collaborating and exchanging with colleagues. Pathways across career stages can vary in terms of the format and content of training activities, as well as on the relative degree of alignment across these stages. Based on their prior training and actual experience and challenges in working with children, ECEC staff can identify areas for further professional development and seek new training opportunities.

Pre-service training

Evidence regarding the impact of ECEC pre-service education and training on process quality and child development, well-being and learning is inconclusive, partly due to the great variety of features of initial preparation programmes (OECD, 2018[4]). Nonetheless, the literature documents improvements in the competencies that ECEC staff develop linked to increases in qualification requirements for ECEC staff beyond secondary education (Lin and Magnuson, 2018[8]) and to specialised training with an explicit focus on working with children (Fukkink and Lont, 2007[9]). Evidence from the Programme for International Student Assessment (PISA) indicates that, across countries, 15-year-olds who attended ECEC programmes staffed by trained supervisors scored 15-20 achievement points higher than peers who were supervised by untrained staff (Balladares and Kankaraš, 2020[10]). While the lack of systematic information on the pedagogical approaches, contents and delivery modes of initial preparation programmes for the ECEC workforce poses a major difficulty for determining its effectiveness (Sim et al., 2019[5]), there is little doubt about the importance of aligning these programmes with the effective learning and developmental principles that inform effective ECEC programmes (Phillips et al., 2017[11]).

As shown in the first volume of TALIS Starting Strong, about three in four staff across countries report having at least some post-secondary education (ISCED Level 4 or above) and having completed an education or training programme that prepared them to work with children. Training specifically to work with children is, however, not universal, ranging from 64% of staff in Iceland to 97% of staff in Germany. The association between staff levels of educational attainment and training specifically for working with children is not uniform across countries and often linked to country-specific pathways to a career in ECEC. Similarly, training focused on working with children is more common among teachers than assistants in some countries, but equally prevalent in others (OECD, 2019, pp. 104-105[2]). As for leaders, the completion of training programmes focused on early childhood and on pedagogical leadership is also common across countries, but not universal (OECD, 2019, p. 127[2]).

Differences in initial preparation may exist between experienced and novice staff as a result of changes over time in the requirements for entering the profession. However, such gaps may gradually disappear as some staff actually complete their training specifically for working with children during their first years in the profession rather than in pre-service programmes strictly speaking. Across countries participating in TALIS Starting Strong, the percentage of teachers and assistants having completed an education or training programme focused on working with children as part of their initial preparation is higher among teachers and assistants with more than three years of experience than among novice teachers and assistants, but differences within countries tend to be small in magnitude (see Table C.2.1).

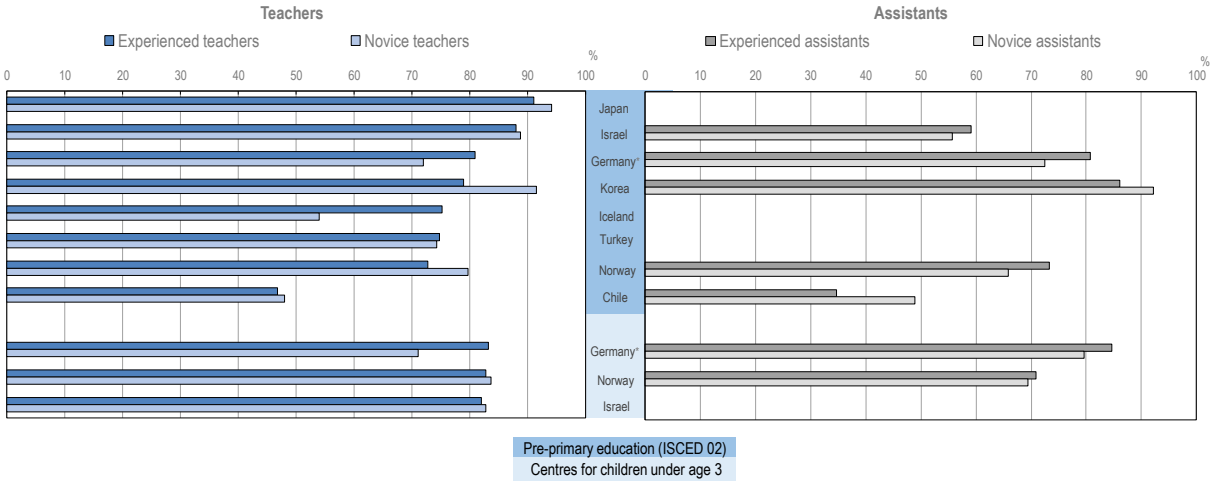
For ECEC staff, the opportunity to gain practical experience can bring additional benefits to their initial preparation specifically to work with children. Across countries, teacher training policies increasingly recognise the importance of practical training modules (a “practicum”) designed to ensure that future staff acquire some experience in real settings before they formally start to work in school or ECEC settings. A mandatory and extended period of clinical practice as part of initial teacher education is indeed a common feature of high-performing and equitable education systems in PISA. In these modules, teacher

candidates typically receive extended training to help them bridge theory and practice at the beginning of their career; where the practicum included in initial teacher-preparation programmes is short, novice teachers often benefit from intensive induction or mentoring programmes (OECD, 2018[12]). Research documents a variety of arrangements for workplace-based learning and mentoring practices in ECEC initial preparation programmes across countries, highlighting the need for improving co-operation between schools for educators and ECEC settings, and for setting competence and working conditions standards for mentors (Oberhuemer, 2015[13]).

Among staff whose initial training focused specifically on working with children, on average 70% of pre-primary staff and 68% of staff in centres for children under age 3 across countries completed a preparation programme that included a practical component (see Table C.2.1). At the pre-primary level, the proportion of teachers with preparatory practical training is the highest in Japan and Israel. Among pre-primary assistants, it is the highest in Korea and Germany, where it is also high in centres for children under age 3 (Figure 2.2). Differences in practical training by years of experience are only observed in Germany, in favour of experienced teachers in centres for children under age 3, and in Korea in favour of novice assistants.

Figure 2.2. Practical training as part of staff initial preparation programmes

Percentage of pre-primary staff whose pre-service training specifically to work with children included a practical component, by role and experience



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Estimates for staff whose pre-service education or training included a programme that prepared them specifically to work with children. Teachers are staff with the most responsibility for a group of children. Assistants support teachers with a group of children. Experienced staff have more than three years of work experience in the early childhood education and care (ECEC) sector. Novice staff have three or less years of work experience in the ECEC sector.
Countries are ranked in descending order of the percentage of experienced teachers whose pre-service preparation programme included a practicum.
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database,* http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.1.

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Across countries, the percentage of staff not having completed a pre-service period of workplace-based learning may reflect the diversity of entry pathways into ECEC professions, which include non-standard qualifications and training in related fields. Moreover, the results may not yet capture the impact of recent reforms. Initial analyses of responses to an OECD policy questionnaire indicate that practical placements

have become a common feature of initial preparation programmes for ECEC in all of the countries participating in TALIS Starting Strong. For instance, a period of workplace-based learning is now a requirement for working as a teacher in ECEC settings in all countries but Iceland, where it is, however, common practice (OECD, 2019[15]). For instance, in Denmark, student ECEC teachers must complete the equivalent of more than one year of practical placements under the supervision and guidance of a qualified ECEC teacher, with both receiving financial compensation for their work during this time (OECD, 2019, p. 24[16]).

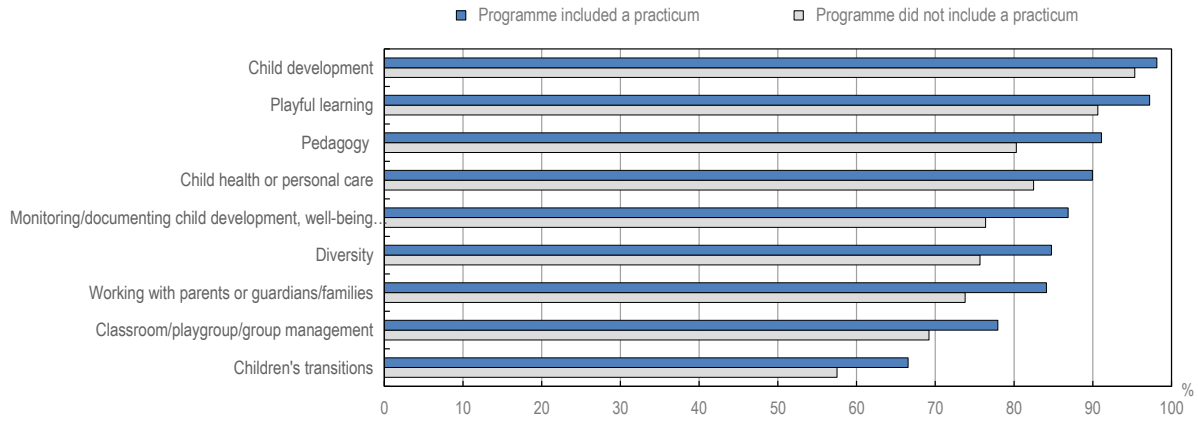
The relevance of workplace-based training as part of initial preparation for ECEC staff is reflected in the number of thematic areas in their pre-service education and training. Rather than limiting the number of areas that staff covered, programmes that included a practical training component lead staff to cover a wider range of contents than programmes with a workplace placement, which may maintain a more theoretical orientation. Across the nine thematic areas considered in the TALIS Starting Strong Survey (see Table 2.1), a greater percentage of pre-primary staff whose initial preparation programmes included a practicum than of staff whose programmes did not covered each of these areas in their pre-service training (Figure 2.3). This is also reflected in the average number of areas covered by pre-primary staff in their pre-service training, which is higher for those with practical training in Iceland, Israel, Japan and Turkey, and in Norway for staff in centres for children under age 3 (see Table C.2.2). By contrast, differences in coverage of the nine thematic areas across staff roles with the target group and levels of experience are less common. Nonetheless, a pattern for less frequent coverage of thematic areas by assistants, relative to teachers, is found in Israel and Norway at pre-primary level, for instance with regard to pedagogy or working with parents and families, whereas in Japan, novice teachers tend to have covered more areas in their pre-service training than experienced teachers, including working with a diversity of children and facilitating children's transition to primary education (see Table C.2.2).

Overall, results suggest that initial preparation programmes that include a practical component tend to be more ambitious in their design than programmes without such an orientation, and that gaining experience in real settings does not come at the expense of covering a narrower curriculum. To the contrary, training programmes that offer future ECEC staff an opportunity to bridge theory and practice through workplace-based learning tend also to expose teachers and assistants to a broader range of training contents. This appears to be more pronounced in thematic areas that are less commonly integrated into pre-service education for ECEC staff, such as working with a diversity of children, working with parents and families, or classroom/playgroup/group management.

Importantly, the opportunities that practical modules may generate for extending the thematic scope of initial preparation programmes do not appear limited to programmes at a specific level of qualifications. Independent of the actual level of educational attainment of ECEC staff, training programmes focused on working with children that included a practicum generally cover a broader range of topics than programmes without this practical dimension. For instance, in Germany, Iceland, Israel, Japan and Turkey, pre-primary staff with educational qualifications at a bachelor's level or higher (ISCED 6 or above) covered a higher number of training areas when their programme required a practical placement than when it did not, and covered the same number of areas in other countries. As noted in the first volume of TALIS Starting Strong, countries like Germany and Iceland encourage practical placements in ECEC centres as part of vocationally oriented bachelor's or master's degree initial preparation programmes (OECD, 2019[2]). However, among staff with qualifications below a bachelor's level, the thematic breadth of programmes with and without a practical module varies less, reflecting perhaps less curricular differentiation across vocational programmes (see Table C.2.3).

Figure 2.3. Thematic areas of pre-service training, by practical component of training programme

Average percentage of pre-primary staff covering each thematic area in their pre-service education or training



Notes: Estimates for staff whose pre-service education or training included a programme that prepared them specifically to work with children. *Areas are ranked in descending order of the percentage of staff whose pre-service programme included a practicum covering the area.*
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.2.

StatLink https://doi.org/10.1787/888934206398

While in all the countries participating in TALIS Starting Strong the majority of staff report having completed a pre-service programme that prepared them specifically to work with children, a priority area for upgrading the skills of the ECEC workforce remains to support staff lacking this type of initial preparation, which in all countries but Germany and Japan still represents at least one in five ECEC staff. Identifying the characteristics and working conditions of this group can help design skills development opportunities that help compensate for the lack of a specific ECEC focus in their pre-service education. Across countries, and at both the pre-primary level and in centres for children under age 3, staff not having completed a pre-service education or training programme focused on working with children are more typically working as assistants than as teachers, and are more often novice rather than experienced staff. They also tend to represent a substantially higher proportion of staff with lower educational qualifications in all countries except Korea and Turkey. Moreover, in several countries, staff without pre-service training specifically to work with children tend to have fixed-term rather than permanent contracts, and are also more likely to work part-time rather than full-time (Table C.2.11). While education and training requirements vary according to staff roles in many countries, the types of contracts and working conditions of some staff may act as a barrier for upskilling to the level of colleagues whose initial preparation programmes focused more strongly on working with children, and may thus require induction and in-service training activities specifically targeted at this group of staff to fill gaps in their pre-service education.

In-service training

The potential of continuous and high-quality training for the professional growth and skills development of educators is now recognised by the inclusion of continuous professional development as an indicator of the United Nations Sustainable Development Goals (United Nations, 2015[17]). Systematic reviews and meta-analyses of quasi-experimental studies support the view that well-designed in-service training programmes can be effective levers of process quality in ECEC settings, although evidence of subsequent improvements in children's developmental and learning outcomes is thinner (Werner et al., 2016[18]; Markussen-Brown et al., 2017[19]; Egert, Fukkink and Eckhardt, 2018[20]; Egert, Dederer and Fukkink, 2020[21]; Joo et al., 2020[22]). Research suggests that comprehensive programmes with individualised

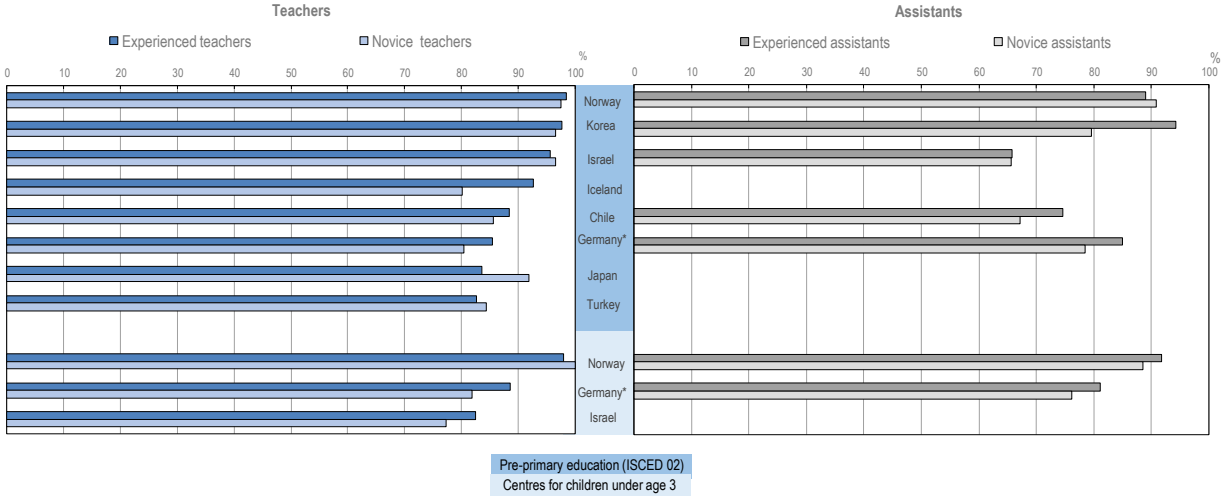
approaches such as coaching are more effective than single and collective-only activities in increasing staff use of more intentional and interactive practices with children, a result attributed to the wider range of learning opportunities that a combination of training formats and personalised feedback can provide for ECEC professionals (Markussen-Brown et al., 2017[19]; Egert, Dederer and Fukkink, 2020[21]).

High-quality ongoing professional development is not only important for staff to stay abreast of the latest advances in teaching and care practices and of changes in curricula, it can also help to retain staff by building a sense of professional identity, increasing job satisfaction and creating opportunities for career development (OECD, 2019[16]). However, in-service training may also increase turnover within the sector by enabling individual staff to leave their workplace and join another ECEC centre that is offering more attractive working conditions. Overall, though, high-quality in-service professional development that promotes sector-specific skills likely creates greater incentives for staff to remain in ECEC professions, boosting commitment and retention rates (Totenhagen et al., 2016[23]; Irvine et al., 2016[24]).

TALIS Starting Strong provides evidence of widespread engagement in ongoing professional development among ECEC staff. As reported in the first volume, more than three-quarters of ECEC staff in any of the participating countries report having taken part in in-service training activities during the 12 months prior to the survey, with levels being the highest among staff with educational attainments at ISCED Level 6 or above in most of the countries (OECD, 2019[2]). Participation differentials also exist by staff role and years of experience (Figure 2.4). Involvement in recent professional development activities is generally higher among teachers than among assistants in all countries where the distinction is relevant at both the pre-primary level and in centres for children under age 3. Generally, however, across countries, gaps in participation in recent in-service training activities between experienced and novice staff are small among both teachers and assistants.

Figure 2.4. Staff participation in professional development activities, by role and experience

Percentage of ECEC staff participating in in-service training activities in the 12 months prior to the survey



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Estimates for all staff. Teachers are staff with the most responsibility for a group of children. Assistants support teachers with a group of children. Experienced staff have more than three years of work experience in the early childhood education and care (ECEC) sector. Novice staff have three or less years of work experience in the ECEC sector.
Countries are ranked in descending order of the percentage of experienced teachers having participated in professional development activities.
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.4.

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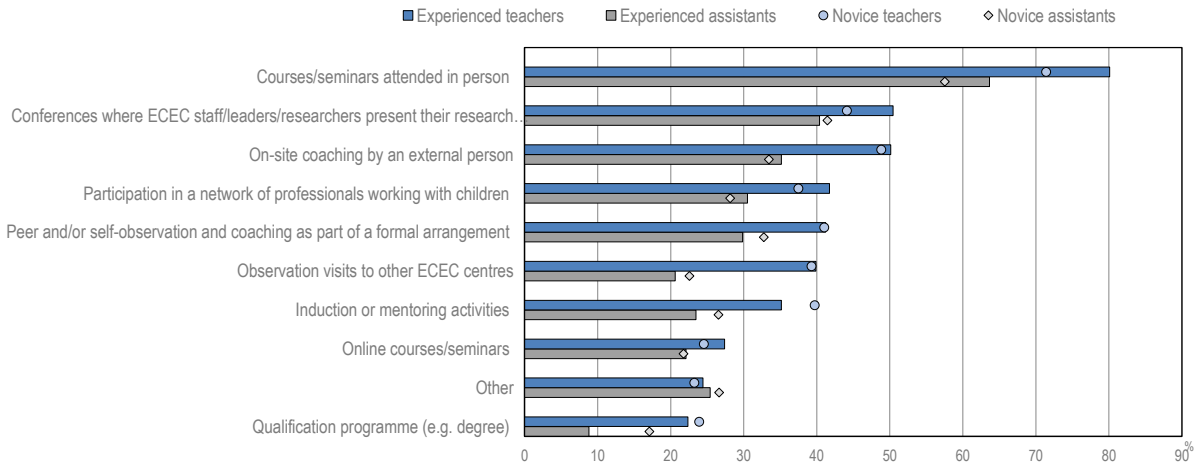
Starting Strong data also indicate that, across participating countries, pre-primary staff in assistant roles tend to participate in a smaller variety of ongoing professional development activities than staff in teacher roles, especially in Denmark (with low response rates), Israel, Korea and Norway, while differences between experienced and novice staff appear minor, both among teachers and assistants (see Table C.2.4). Traditionally, in-service training has taken the form of single or a short series of externally provided learning courses. Across countries, courses and seminars remain the most common type of training activity by a large margin, whereas online activities and activities integrated in qualification programmes are the least common (Figure 2.5). Differences in participation rates between teachers and assistants are the greatest for courses/seminars attended in person, but also substantial for other types of activities, such as on-site coaching, peer and self-observation, participation in professional networks, or observation visits to other ECEC centres. In turn, across countries, novice teachers and assistants appear as likely as more experienced colleagues to participate in most types of activities, with the exception of courses and seminars, which are less often attended by novice staff, and, as expected, of induction and mentoring activities, in which they participate more frequently than staff with more years of experience in the sector.

Beyond participation rates, ECEC research comparing different types and features of training activities has come to highlight the strengths of a centre-embedded (i.e. on-site) approach to professional development. Training activities taking place in workplace settings tend to create better conditions for integrating past experiences, build on staff's and leaders' collegiality, and account for the specific context of the centre (Opfer and Pedder, 2011[25]). Professional development is more likely to shape the actual beliefs and practices of teachers and assistants when training contents can be easily connected to their everyday challenges and their immediate work context. Moreover, centre-embedded professional development is seen as a cost-efficient approach to support staff and leaders because it builds on resources and personal relationships (e.g. trust) that are already in place within ECEC settings (Kraft, Blazar and Hogan, 2018[26]). Recent research identifies coaching and mentoring arrangements, two examples of centre-embedded approaches, as effective models of in-service professional development for ECEC staff (Kraft, Blazar and Hogan, 2018[26]; Elek and Page, 2019[27]).

Centre-embedded models for professional training are attracting growing interest in many ECEC systems. TALIS Starting Strong collects information on four types of such activities: 1) observation visits to other ECEC centres; 2) peer or self-observation and coaching as part of a formal arrangement; 3) on-site coaching by an external coach; and 4) induction or mentoring activities. On average across countries, less than half of ECEC staff at the pre-primary level report having participated in each of these activities in the 12 months prior to the survey: only 44% of staff received coaching by an external person; slightly less than 40% of staff engaged in formal peer or self-observation activities or visits to other centres; and only 32% were involved in induction or mentoring activities. Notably, though, more than half of pre-primary teachers in Israel took part in each of these activities as part of their recent professional development, and so did, to a lesser extent, teachers in Korea and Japan, who also show high levels of involvement in observation visits to other centres and in induction or mentoring arrangements. Levels of participation in these activities are also relatively low for staff in centres for children under age 3, except coaching and mentoring for teachers in Israel. Across countries and all four types of centre-embedded training, moreover, assistants, both novice and experienced, report substantially lower levels of participation than teachers, which may reflect different training entitlements according to staff roles with the target group.

Figure 2.5. Type of professional development activities attended by staff, by role and experience

Average percentage of pre-primary staff participating in each type of in-service training activities in the 12 months prior to the survey



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Estimates for staff who report participation in at least one type of professional development activity in the 12 months prior to the survey. Teachers are staff with the most responsibility for a group of children. Assistants support teachers with a group of children. Experienced staff have more than three years of work experience in the early childhood education and care (ECEC) sector. Novice staff have three or less years of work experience in the ECEC sector.
Activities are ranked in descending order of the percentage of participation by experienced teachers.
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.4.

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Centre leaders provide a complementary perspective into the professional development opportunities available to staff at the time when they join their ECEC centres. Leaders report on the availability of induction activities organised by their centres with the goals of supporting novice staff in their transition to working in the ECEC field and of helping experienced staff to adapt to their new centres. These induction programmes can take the form of either structured or informally arranged activities. Induction programmes serve not only to introduce staff to a new group of colleagues and a new setting, but can also create a positive dynamic for engaging in subsequent continuous professional development.

According to leader reports, virtually all centres in all countries participating in TALIS Starting Strong offer some induction activities to new staff, with programmes typically including at least 6 different activities out of the 11 listed in the survey, at both the pre-primary level and in centres for children under age 3, and with few differences between centres of different size across countries (Table C.2.5). At both levels, most centres provide opportunities for new staff to meet and work together with more senior colleagues, including through supervision schemes, while online activities and reduced workload are the least commonly proposed induction formats (Figure 2.6). This suggests an emphasis on using induction activities to promote interactions with colleagues as they arrive in their new centres.

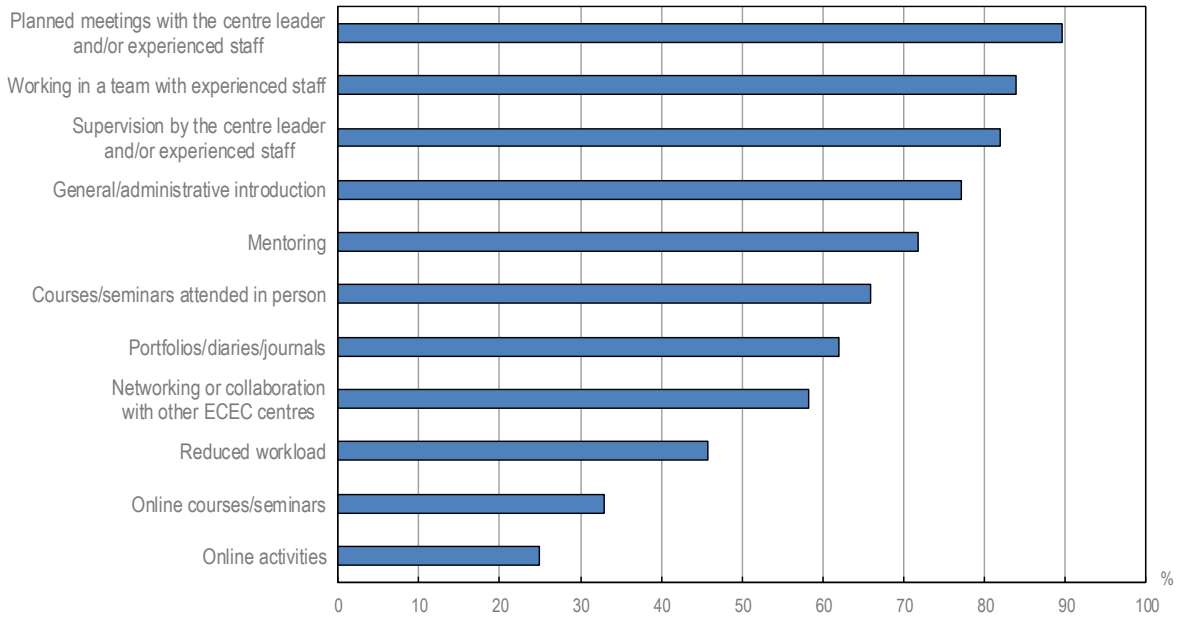
There is great variation across countries in the use of mentoring arrangements as part of induction activities. TALIS Starting Strong defines mentoring as a support structure where more experienced staff support less experienced colleagues, reflecting the nature of this professional development strategy as a socially situated and interactive practice that builds on the capacities of ECEC professionals (Nolan and Molla, 2018[28]). At the pre-primary level, mentoring for novice staff or for staff new to the centre is available in over 85% of ECEC centres in Iceland, Japan, Korea and Turkey, but only in about 60% of centres in

Germany, and in less than 50% of centres in Chile and Denmark (with low response rates). Chile has, however, recently introduced measures to extend this practice in its ECEC and school systems (Box 2.2).

Reducing the workload for new staff is another induction strategy used to very different degrees across countries. About 75% or more leaders in Japan, Korea and Turkey report that their centres offer this possibility as part of their induction arrangements, while 30% or less of leaders report so in Germany, Iceland or Norway. The extent to which countries rely on this practice appears, however, unrelated to the yearly total statutory working time for their ECEC staff as reported in the first volume of TALIS Starting Strong (OECD, 2019[2]).

Figure 2.6. Induction activities for new staff in early childhood education and care centres

Average percentage of pre-primary ECEC centres where the following induction activities are available



Notes: Estimates from centre leaders' reports.
Activities are ranked in descending order of the percentage of centres where they are offered.
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.5.

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Strategies for enhancing the competences and recognition of ECEC staff through ongoing professional development take diverse approaches across countries, often providing a variety of support measures, such as financial incentives for providers or leave entitlements and mentoring schemes for staff (Box 2.2).

Box 2.2. Promoting staff participation in continuous professional development

Chile

In Chile, Law 20.903 of 2016 introduced the Sistema de Desarrollo Profesional Docente (Teacher Professional Development System, TPDS) as part of a broader effort to improve the working conditions and professional competences of teachers at all levels, including early childhood education and care (ECEC). Implementation started in 2017 for all schools (including those with ECEC levels for children aged 4-6), and in 2020 gradually for ECEC centres for children under age 4.1

ECEC staff who enter the TPDS can participate in three different professional development processes. First, free induction and mentoring are made available to all teachers with less than one year of experience, or with two years or less experience and without any past professional mentoring. This seeks to improve teachers' knowledge, pedagogical practices and professional responsibility. Mentoring is provided as a support structure where more experienced teachers (mentors) support less experienced ones. Second, ECEC teachers have free access to courses to continuously develop their practice, with specific support activities available to teachers with four or less years of experience and those placed at a beginner level on a professional evaluation organised by the Chilean Ministry of Education. Further, leaders of ECEC centres participating in the TPDS are expected to design local professional development plans with a focus on encouraging collaborative work and peer feedback exchanges about pedagogical practice. The system also includes a professional development evaluation which mainly considers, among other criteria, teachers' and leaders' knowledge and pedagogical practices. Teachers' pay can be increased based on the results of this evaluation and on work in challenging conditions.

Norway

Norway is implementing an ongoing national strategy (2014-22) for enhancing the professional competence of all ECEC staff. While there is no legal requirement for staff to participate in professional development activities, the strategy establishes financial incentives targeted mainly at ECEC providers to compensate for staff absences while they are in training. ECEC staff can also apply for participation in state-subsidised vocational training as well as in further education for ECEC teachers and centre leaders. For instance, since 2011, centre leaders can apply to participate in an ECEC leader training study programme. The Directorate for Education and Training pays for the participation in the programme, while the ECEC provider/owner pays for their employees' travel and expenses.

The strategy also includes a mentoring scheme for newly employed graduate teachers in ECEC, both at the pre-primary levels and for those working with children under age 3. The objective of the scheme is to ensure a good transition between initial preparation studies and the profession, and help to recruit, develop and retain talented kindergarten teachers and leaders. An evaluation study showed that the newly employed graduates mostly agree that the mentoring arrangement helped them develop relevant skills for their work with children, gave them confidence and self-awareness of their own competence, and reduced "the practice shock" in the workplace.

Turkey

In Turkey, professional development activities at centre level for ECEC staff are planned and implemented in accordance with the Okul Öncesi Eğitim ve İlköğretim Kurumları Yönetmeliği (Regulation for Preschool and Primary Education Institutions). The key objectives of the professional development programmes at centre level organised by the Ministry of National Education are to enhance ECEC teachers' and centre leaders' knowledge and skills for pedagogical and managerial tasks, to discuss effective approaches to problems commonly encountered in ECEC settings, and to develop annual plans reflecting the needs of children and the environment of their ECEC centres. Within this scope, two seminars are held annually, at the beginning and at the end of the school year, for the vocational development of ECEC teachers, and complementary training activities are planned throughout the year. Participation in the professional development seminars is compulsory.

All expenses associated with participation in in-service training activities organised by the Ministry of National Education or its provincial directorates are free for staff working in public ECEC settings. Participants are considered on official leave while training takes place and receive their salaries accordingly. ECEC centre leaders can apply for in-service activities through the ministry's Education Information System. The criteria for selecting applicants vary according to the goal of the activity and the group of staff targeted, but priority is given to leaders and staff without prior training in the area.

1. In Chile, schools with ECEC levels for children aged 4-6 include public preschools and schools (publicly funded and managed by local governments); co-financed preschools and schools (privately managed and at least partly funded by public sources). In turn, ECEC centres for children under age 4 include public kindergartens of local service public education; municipal departments and municipal corporations (publicly funded and managed by local governments); Junta Nacional de Jardines Infantiles (JUNJI) kindergartens (publicly managed and funded) and JUNJI VTF; Integra kindergartens (privately managed but receive public funding) and Integra CAD. See Annex A in (OECD, 2019[2]).

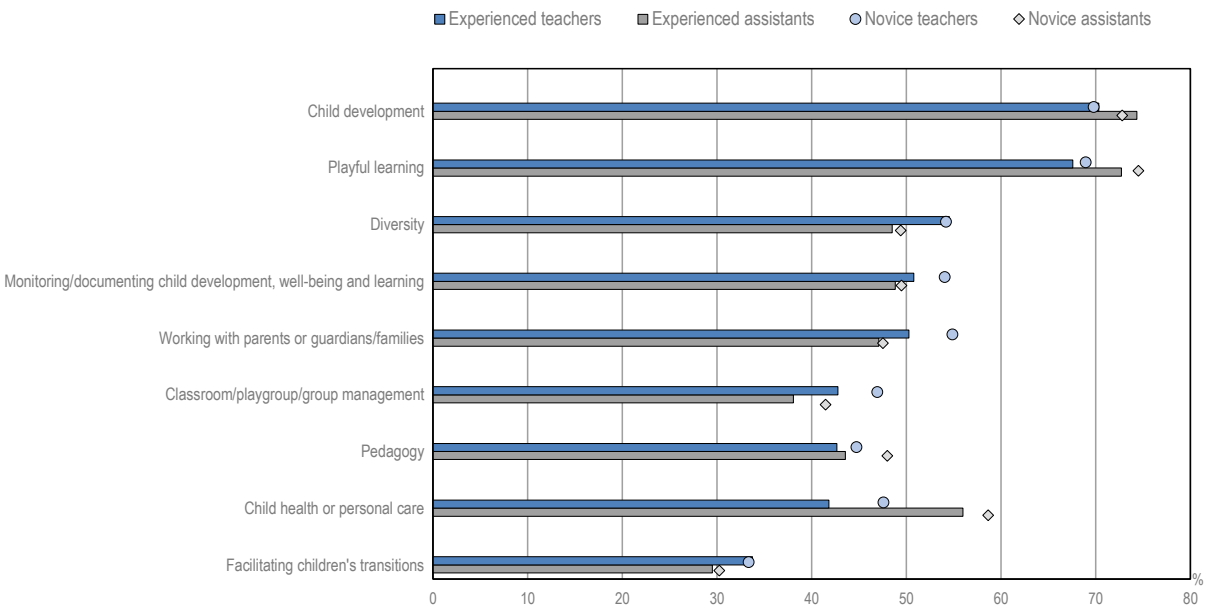
Source: Based on inputs provided by the respective national authorities.

Besides implementing policies to promote staff participation in professional development activities, ECEC systems are increasingly exploring ways to improve the contents and design of in-service training, including through better alignment with initial preparation programmes for ECEC professionals. TALIS Starting Strong provides information on the areas covered by ECEC staff in their recent in-service training, allowing for an analysis of the alignment with both the contents of staff pre-service training and their perceived needs for further professional development.

Across countries, topics related to child development, play and diversity are the most commonly covered areas in in-service training activities for pre-primary staff, whereas facilitating children's transitions and child health and personal care are the least frequently included areas in these programmes (Figure 2.7). TALIS Starting Strong data paint a picture of broad similarity between the thematic areas of pre-service and in-service training programmes. Importantly, however, more pre-primary staff report having covered contents about working with a diversity of children in recent in-service training than in their initial preparation programmes, whereas the coverage of topics related to child health or personal care is much less frequent. Child health and personal care is also an area more frequently covered in training activities for assistants than for teachers, but otherwise differences in areas of in-service training by staff role with the target group are small, as are differences between novice and more experienced staff (Table C.2.6).

Figure 2.7. Thematic areas of in-service training, by role and experience

Average percentage of pre-primary staff covering each area in recent professional development activities



Notes: Estimates for staff who report participation in at least one type of professional development activity in the 12 months prior to the survey. Teachers are staff with the most responsibility for a group of children. Assistants support teachers with a group of children. Experienced staff have more than three years of work experience in the early childhood education and care (ECEC) sector. Novice staff have three or less years of work experience in the ECEC sector.

Areas are ranked in descending order of the percentage of experienced teachers covering the area in their professional development activities.

Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.6.

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Additional information in TALIS Starting Strong helps to contextualise these results. When asked about barriers to participation in professional development, on average across countries, about 33% of pre-primary staff and 24% of staff in centres for children under age 3 agreed or strongly agreed that no relevant professional development was available to them, which may reflect insufficient alignment with needs, but also poor communication about existing offerings. At the pre-primary level, this perception is shared by more than 50% of staff in Chile and Korea, but by less than 15% in Norway. In centres for children under age 3, reports of a lack of relevant training activities range between 33% of staff in Denmark (with low response rates) and 11% in Norway.

Staff also provided their views on whether high-quality professional development should be a spending priority if the budget for the ECEC sector was to increase. On average across countries, 61% of pre-primary staff considered this goal of high importance, with higher percentages in Chile, Israel and Turkey. This potential allocation of the budget is perceived of greater importance than many other alternatives, but less pressing than reducing group sizes and increasing salaries.

As in the case of staff lacking pre-service training focused on working with children, ECEC systems may put in place specific support measures for staff not participating in in-service training activities, who represent around one in six staff across countries at both the pre-primary level and in centres for children under age 3, both less than one in ten in Korea and Norway, at both levels. While TALIS Starting Strong cannot determine whether lack of participation in professional development activities extended beyond the 12 months prior to the survey, identifying some of the characteristics of this group of staff can help design

targeted actions that enable a more sustained commitment to a lifelong professional learning journey. Across countries, lack of participation in recent in-service training activities is more common among assistants than among teachers, while inconsistently related to the number of years of experience in the sector. However, across countries, the share of staff not taking part in recent on-the-job training opportunities tends to be greater among staff with lower rather than higher educational qualifications, on short fixed-term rather than permanent contracts, and working part-time rather than full-time (Table C.2.11). Targeted entitlements or incentives for continuous professional development for ECEC staff with relatively low educational attainment and a more precarious employment situation may thus help to improve staff upskilling and retention in the sector.

Informal learning

For all staff, informal learning through collaborative activities and knowledge sharing within teams can play a key role for developing skills to work with children, but also for making the profession more appealing and retaining staff.

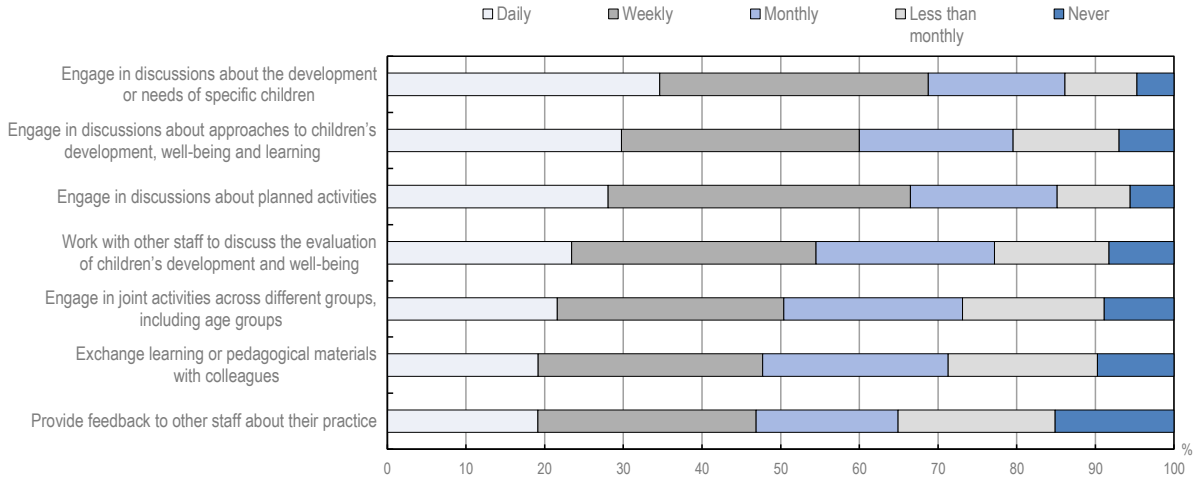
Informal learning is often defined in contrast to formal learning. Activities that promote informal learning are typically less structured in terms of time, space, goals and support; do not follow a curriculum; and are undertaken at staff's own initiative rather than being mandated (Desimone, 2009[29]; Richter et al., 2011[30]). Importantly, though, informal and formal learning should not be understood as being in opposition, but rather as a continuum (Kyndt et al., 2016[3]). For instance, formal activities can translate implicit insights into more systematised and explicit learning while informal activities often provide authentic settings for staff to apply knowledge acquired in more abstract terms. Informal learning is usually embedded in the classroom or centre context, as interaction and sharing with children and colleagues take place primarily at workplace settings in direct connection to everyday tasks and challenges. A systematic review of the literature documents that educators' informal learning activities can promote their subject and pedagogical knowledge and shape their professional beliefs and dispositions (Kyndt et al., 2016[3]). Peer collaboration and feedback are considered core proxies of informal learning activities (Richter et al., 2011[30]; OECD, 2020[31]). Moreover, since lack of time and of staff to compensate for absences remain two important barriers for ECEC staff to participate in professional development, as shown in the first volume (OECD, 2019, p. 114[2]), informal opportunities for skills development are also central for facilitating a lifelong learning approach.

In TALIS Starting Strong, information on collaborative professional practices is a privileged window into the opportunities for informal learning for ECEC staff. Importantly, survey respondents reported about their own personal engagement in collaborative activities rather than about the prevalence of collaboration at the centre level. This level of measurement provides good grounds for exploring associations with individual staff's own participation in training and perceived needs for further professional development.

On average across countries, between one-half and two-thirds of pre-primary staff reported engaging either daily or weekly in discussions with colleagues about various topics, including approaches to children's development, well-being and learning; the development or needs of specific children; planned activities; and approaches to evaluating children. Informal discussions therefore appear to be the most common form of collaborative activity. Engaging in joint activities across different groups of children, exchanging pedagogical materials with peers, and providing feedback to colleagues about their practice are relatively less frequent, but still reported to occur on a daily or weekly basis by four in ten staff across countries (Figure 2.8).

Figure 2.8. Frequency of staff engagement in collaborative professional practices

Average percentage of pre-primary staff engaging in collaborative practices in their ECEC centres



Practices are ranked in descending order of the percentage of staff engaging in the practice daily.
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.7.

StatLink https://doi.org/10.1787/888934206493

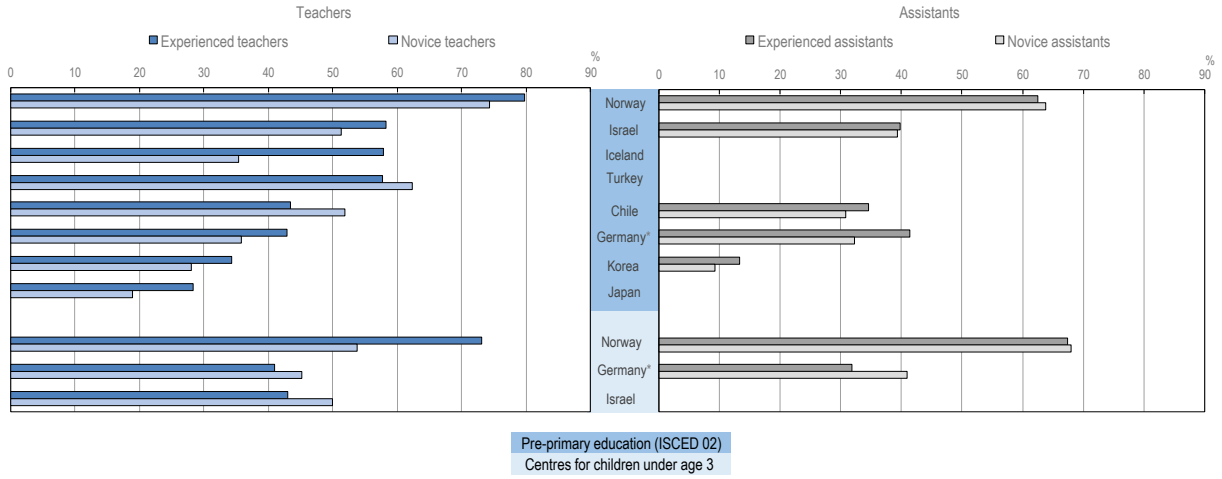
These percentages mask, however, substantial variation between countries. For instance, about two-thirds of pre-primary teachers in Germany engage in joint activities across different groups of children, including age groups, on a daily or weekly basis, whereas only about one-third of teachers do so in Chile or Korea. In turn, more than eight in ten pre-primary teachers in Iceland and Norway report daily or weekly discussions with colleagues on the development or needs of specific children, whereas less than two-thirds do so in Israel, Korea or Turkey. Further, analysis using the scale of staff engagement in collaborative practices (see Annex B) further suggests broadly similar levels of collaboration with colleagues among teachers and assistants, as well as minor differences between novice and experienced staff in each of these roles (Table C.2.8).

A practice of special relevance is the provision of feedback to other staff in the centre about their practice. Peer feedback among educators is an important form of collaboration that involves close and reflective interaction in a context of trust and shared experiences. Much professional knowledge and skills are implicit and learnt on the job, and ideas transmitted in peer discussions may influence staff practice more than relatively detached training events, because they reflect situated and co-constructed knowledge (Lefstein, Vedder-Weiss and Segal, 2020[32]). According to data from TALIS 2018, across countries, 64% of the primary education teachers who received feedback in the year prior to the survey reported that it led to improvements in their pedagogical competencies (OECD, 2020[31]). However, feedback exchanges with other staff are the least common collaborative practice among those listed in the TALIS Starting Strong questionnaire, with around a third of ECEC staff across countries engaging in such exchanges less often than monthly or not at all. Yet again, variation is substantial between countries: whereas in Norway two-thirds or more of both teachers and assistants at the pre-primary level engage in weekly or daily feedback exchanges with colleagues, less than a third do so in Japan or Korea, albeit differences may partly reflect different understandings of this practice across countries (Table C.2.8). Further, providing feedback is a type of collaboration where differences by staff role are pronounced. At the pre-primary level, assistants are less likely than teachers to give feedback to colleagues on a weekly or daily basis in Chile, Israel,

Korea and Norway. In turn, experienced teachers appear to provide feedback more often than novice teachers at the pre-primary level in all countries except Chile and Turkey, while less consistent differences are observed among novice and experienced assistants. In centres for children under age 3, both teachers and assistants in Norway report again the strongest involvement in this practice (Figure 2.9).

Figure 2.9. Feedback exchanges among staff about their practice, by role and experience

Percentage of ECEC staff providing feedback to other staff in their ECEC centre on a weekly or daily basis



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Estimates for all staff. Teachers are staff with the most responsibility for a group of children. Assistants support teachers with a group of children. Experienced staff have more than three years of work experience in the early childhood education and care (ECEC) sector. Novice staff have three or less years of work experience in the ECEC sector.
Countries are ranked in descending order of the percentage of experienced teachers providing feedback to other staff on a weekly basis or more frequently.
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.8.

StatLink https://doi.org/10.1787/888934206512

Alignment between pre-service and in-service training

A central goal of this chapter is to explore the alignment between pre-service and in-service training for ECEC staff (see Box 2.1). This is done, first, by comparing indicators of the thematic breadth (i.e. number of areas covered) of the initial and recent training received by staff actually trained to work with children and having participated in ongoing professional development activities.[6]

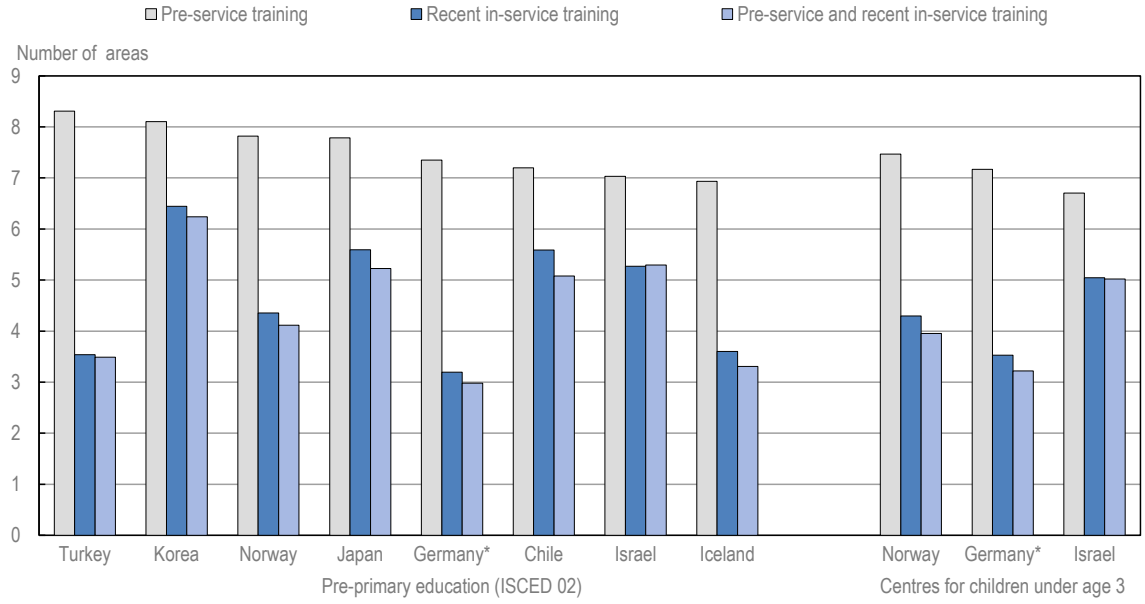
Across all the countries participating in TALIS Starting Strong, ECEC staff covered a greater number of thematic areas in their pre-service education and training (specifically to work with children) than in their recent in-service training activities (Figure 2.10). This is unsurprising given the different goals and length of initial preparation programmes and ongoing professional development. On average, out of the nine thematic areas considered in this chapter (see Table 2.1), ECEC staff at both pre-primary level and working in centres for children under age 3 covered between seven and eight different areas in their pre-service training in all nine participating countries.

More variation exists, however, regarding the breadth of in-service training across countries. For instance, on average, staff in Korea report having covered 6 or 7 thematic areas in their professional development activities during the past 12 months, whereas staff in Germany and Turkey report having covered 3 to 4. This may reflect differences across countries in the curricular design of in-service training offerings, in the

incentives or conditions for covering a greater number of training topics, or in the approaches that staff adopt for finding a balance between variety and focus in their training choices. However, thematic breath by itself is only a limited proxy for the quality of professional development, which encompasses many other dimensions.

Figure 2.10. Thematic breadth of staff pre-service and recent in-service training

Average number of thematic areas covered by ECEC staff in their pre-service education and training and in professional development activities in the 12 months prior to the survey



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Note: Estimates for staff who report both that their pre-service education or training included a programme that prepared them specifically to work with children and participation in at least one type of professional development activity in the 12 months prior to the survey.
Countries are ranked in descending order of the number of areas covered by staff in pre-service training.
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.9.

StatLink https://doi.org/10.1787/888934206531

Variation between countries in the number of thematic areas that staff covered at both stages mirrors variation in the breadth of in-service training. This is another indication that, in all the countries participating in TALIS Starting Strong 2018, ECEC staff generally had some prior exposure to the topics of their recent professional development activities during their initial preparation programmes, rather than encountering these topics for the first time. More fine-grained analysis of the curricular contents of the education and training programmes for ECEC staff are needed to corroborate these findings.

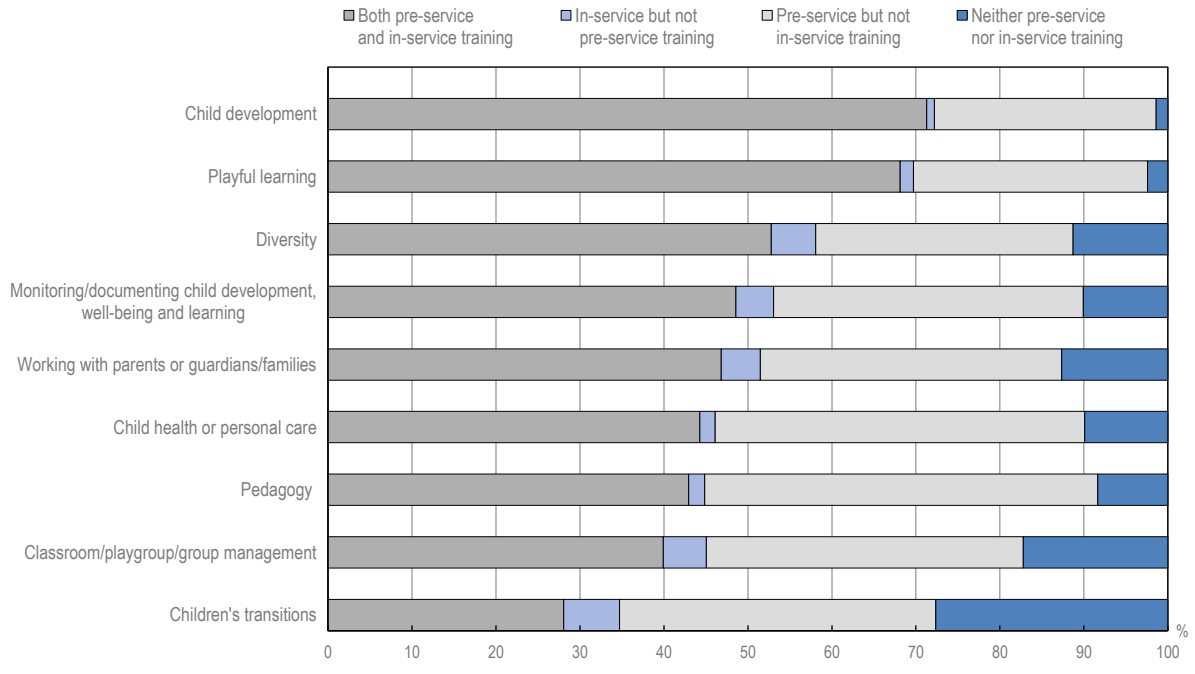
Staff training trajectories in each of the nine thematic areas considered in this chapter provide another perspective into the alignment of initial preparation programmes and in-service training in the ECEC sector. For each area, it is possible to estimate the percentage of: staff who did not cover the area neither in their initial training nor in their recent professional development activities; staff who covered the area in their pre-service training only; staff who covered the area in recent professional development activities only; and staff who covered the area in both their pre-service and recent in-service training (Figure 2.11).

This yields insights into the relative overlap or complementarity of the training received by ECEC staff at different stages of their careers.

Analyses of staff training trajectories in each area indicate again that in-service training activities rarely expose ECEC staff to thematic areas that were not already covered as part of their initial preparation programmes. In other words, for a large majority of staff across countries, the contents of in-service professional development activities tend to overlap thematically with those that were part of their pre-service education and training for working in the sector. This is illustrated by the length of the light blue bars in Figure 2.11, which shows the percentage of pre-primary staff for whom each thematic area covered in recent in-service training was actually "new", and which is below 10% in any given area. Instead, ECEC staff tend to use their in-service training activities as an opportunity to revisit topics already covered in their initial preparation to enter the profession, including for contents that are less frequently part of pre-service training programmes. Overall, these training trajectories suggest a "build-on" training approach by which ongoing professional development serves primarily to deepen or update areas that were included in initial preparation programmes, rather than having a strong differentiation in curricular contents. Alignment in terms of topical coverage between pre-service and in-service training can be beneficial for staff in many respects. Staff may revisit training contents over time to deepen their understanding of key topics on the area or to update their approaches and practices in light of recent developments. This is consistent with a notion of evolving fields of knowledge that change with the emergence of new pedagogical frameworks and new demands and expectations on the roles and competences of ECEC staff.

Figure 2.11. Alignment of staff pre-service and recent in-service training, by thematic area

Average percentage of pre-primary staff in each training trajectory, by thematic area



Notes: Estimates for staff who report both that their pre-service education or training included a programme that prepared them specifically to work with children and participation in at least one type of professional development activity in the 12 months prior to the survey.
Areas are ranked in descending order of the percentage of staff with trained in the area "Both pre-service and in-service training".
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.10.

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The alignment between the thematic areas of pre-service and in-service training programmes varies substantially between countries (Table C.2.10). It appears highest in Korea, where, for instance, the percentage of staff covering contents related to child health and care or to classroom/playgroup/group management at both stages (of 89% and 71%, respectively) is about 20 percentage points higher than in any other country, and also relatively high in other areas. Levels of cumulative training across areas are also high in Chile, Israel and Japan. By contrast, the degree of alignment between pre-service and in-service training is the lowest in Turkey, where the percentage of staff with cumulative training is 30-50% for any of the 9 thematic areas, and to a lesser extent in Germany. In both cases, this appears linked to staff covering a smaller number of topics in their recent in-service training activities than in other countries (see Table C.2.9).

In turn, staff training trajectories of repeated coverage or lack of training may be seen as indicators of the weight that different thematic areas take in ECEC initial preparation and continuous professional development programmes. Across countries, contents related to child development, playful learning and working with a diversity of children are those most often covered by pre-primary staff in both pre-service and recent in-service training, whereas contents related to facilitating children's transitions to school and to classroom/playgroup/group management are those for which a larger share of staff lacks training (see Table C.2.10).

Needs for further professional development

The success of skills development strategies for ECEC staff hinges on both the supply of high-quality professional development and on staff's disposition to upgrade and apply their knowledge and skills. In this regard, it is crucial that opportunities for professional development respond to ECEC staff needs. TALIS Starting Strong asked staff to report the areas where they feel the need for further professional development, as well as their incentives and barriers for participation in training. Staff assessments of priority areas for skills development are an important input for efforts to design more effective professional development programmes.

As shown in the first volume of TALIS Starting Strong, across countries, staff at both the pre-primary level and in centres for children under age 3 reported a high level of need for professional development in all the topics grouped in the area "Diversity" (OECD, 2019, p. 112[2]). Working with children with special needs ranked the highest for staff at both levels of education in all countries but Korea, while working with children from diverse backgrounds and working with dual language learners were also among the top three most pressing needs for pre-primary staff in Chile, Germany, Iceland, and Turkey, and for staff at both levels of education in Denmark (with low response rates) and Norway. Other common priority areas included working with parents or families, general child development, and facilitating creativity and problem solving.

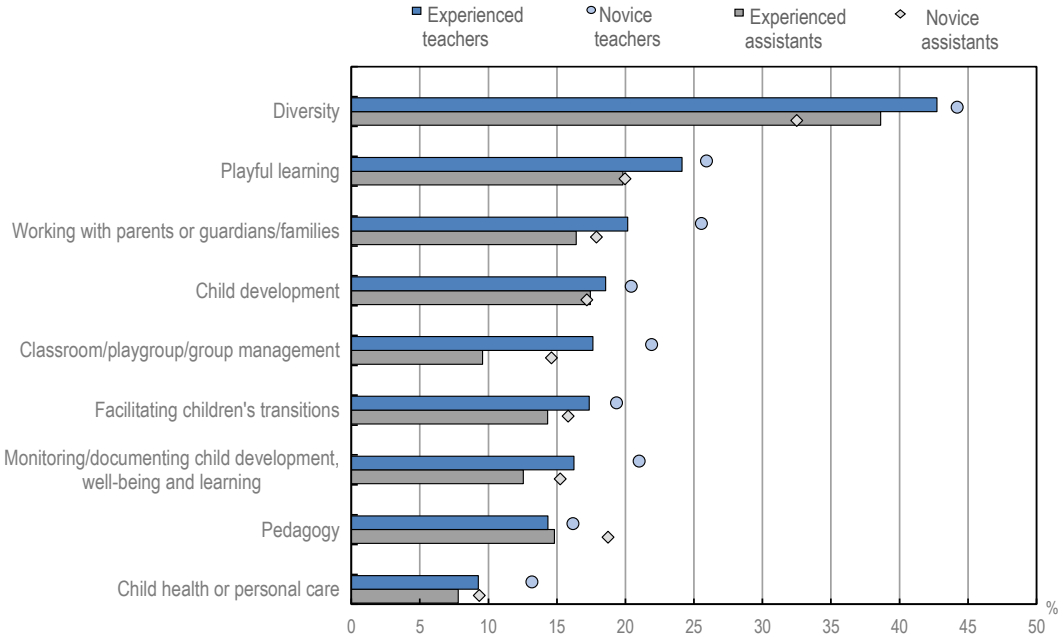
Staff needs for further professional development across the nine thematic areas distinguished in this chapter (see Table 2.1) reveal some differences by staff role and level of experience (Figure 2.12). As expected, across countries, novice teachers and assistants report more often than experienced colleagues a strong need for additional professional development in several areas, and most notably with regard to classroom/playgroup/group management and to working with parents or families. By contrast, the perception of a high level of need for additional training is similar in other areas among novice and experienced staff, for example among pre-primary teachers with regard to working with a diversity of children, an area that in most countries was more frequently included in the initial preparation programmes of novice teachers than in those of teachers with more years of experience (Table C.2.2). Differences by staff role are also pronounced, with teachers generally being more likely than assistants to report a high level of need in all thematic areas except pedagogy (Table C.2.12).

An important question when trying to improve professional development strategies for the ECEC workforce is how to interpret reports of self-perceived training needs. This is because receiving training in a given area may not just mitigate the perception that further professional development in the area is desirable,

but may also stimulate such a belief. Staff reports of high needs for training can indeed reflect multiple scenarios and should not be interpreted solely as a sign of a lack of training in the corresponding area (Cooc, 2018[33]). For instance, staff may want to revisit a topic included in their training because they were dissatisfied with the quality of their original training, but also because the training was indeed effective and triggered further interest and a desire to invest more time on the topic. In addition, staff may have a recurrent need to stay up-to-date with developments in the knowledge base in certain areas.

Figure 2.12. Staff needs for further professional development, by role and experience

Average percentage of pre-primary staff reporting a "high" level of need for further professional development



Notes: Levels of need for further professional development were reported on a scale with four values: "no need at present", "low level of need", "moderate level of need" and "high level of need". Estimates for all staff. Teachers are staff with the most responsibility for a group of children. Assistants support teachers with a group of children. Experienced staff have more than three years of work experience in the early childhood education and care (ECEC) sector. Novice staff have three years or less of work experience in the ECEC sector. *Areas are ranked in descending order of the percentage of experienced teachers reporting a "high" level of need for further professional development*.
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.12.

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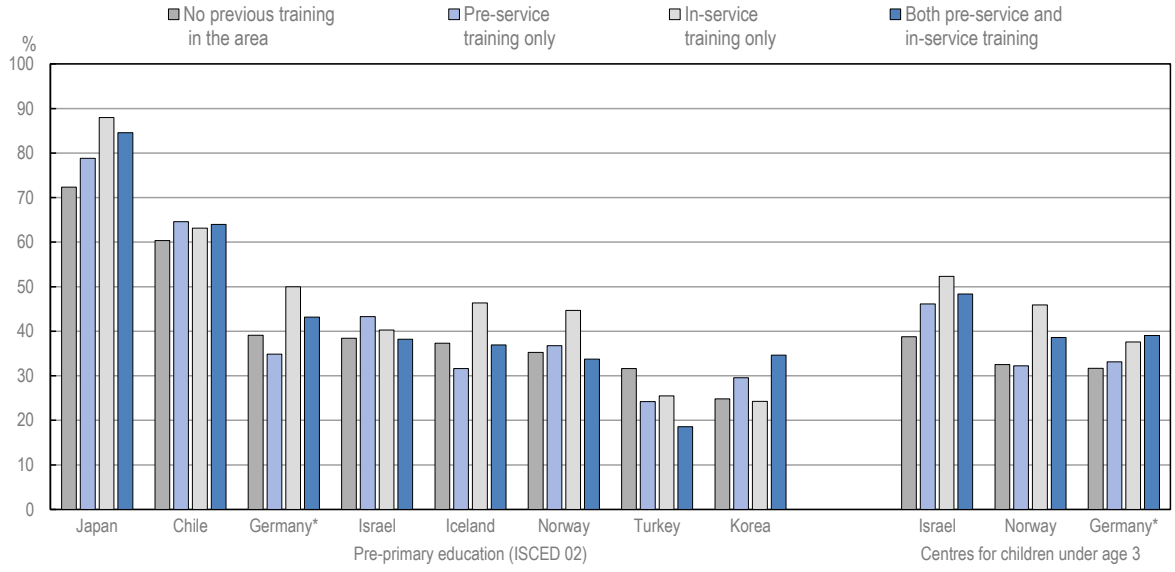
This question can be examined by comparing the percentage of staff that, having varying levels of exposure to a thematic area (i.e. different training trajectories), still report a strong need for additional professional development in that area. Of particular interest are staff needs for further professional development for working with a diversity of children (Figure 2.13), since topics in this area were the top priority needs reported by ECEC staff in most of the countries participating in TALIS Starting Strong. Under the hypothesis that training mitigates the need for further professional development, the percentage of staff reporting a high level of need should, in principle, be greater for staff with no previous training in the area, and lower for staff whose training included relevant topics more recently and in more cases. Under the hypothesis that training in an area stimulates interest in further professional development in that area, the opposite holds.

TALIS Starting Strong data suggest that training for working with a diversity of children generally promotes rather than diminishes additional interest in this area among ECEC staff, as measured by reports of a high need for further professional development in this area (Figure 2.13). At the pre-primary level, a positive association between the percentage of staff reporting a high level of need for working with a diversity of children and the frequency of exposure to such contents as captured by different training trajectories can be observed in Germany, Japan and Korea, whereas for staff in centres for children under age 3, the same association is visible in Germany, Israel and Norway. Turkey is the only country where the mitigation scenario appears to hold, as the percentage of staff reporting a strong need for further professional development is the lowest among staff having covered the area in both pre-service and in-service training, and the highest among those not having received any training in the area. Differences across training trajectories are minor in other countries.

The general pattern of a positive relationship between receiving training and perceived needs for further professional development may be interpreted as reflecting the effectiveness of training in stimulating the interest of staff in improving their knowledge and skills in this area, including by increasing awareness about the complexity of the topics.

Figure 2.13. Staff professional development needs about diversity and previous training in the area

Percentage of staff reporting a "high" level of need for further professional development for working with a diversity of children, by training trajectory in the area



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Estimates for all staff. For contents included in the thematic area "Diversity"; see Table 2.1.
Countries are ranked in descending order of the percentage of staff with no previous training in the area who report a "high" level of need for further professional development.
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.13.

StatLink https://doi.org/10.1787/888934206588

ECEC systems can strengthen their professional development policies by improving ways to assess the professional development needs of teachers, assistants and leaders. In turn, an effective assessment of such needs should inform efforts to improve the alignment between initial preparation programmes and in-service training activities. Countries like Germany and Israel implement measures in this direction (Box 2.3).

Box 2.3. Assessing needs for professional development and guidance on training options for early childhood education and care staff

This box presents examples describing how early childhood education and care (ECEC) systems assess current and future staff needs for professional development, as well as initiatives to improve the alignment and quality of training across career stages.

Germany

In Germany, the field of professional development (Weiterbildung) in ECEC is very diverse, with no common curricula in place and a large spectrum of training providers covering a wide range of topics. After their initial preparation programmes, ECEC staff attend mostly non-formal training activities whose contents are usually designed taking into account external job requirements (e.g. from a scientific perspective), the goals of ECEC providers/settings, the competencies of training instructors and the needs and interests of ECEC staff (Oberhuemer and Schreyer, 2017[34]; Buschle and Gruber, 2018[35]).

In order to provide orientation for both ECEC staff and training providers, an ambitious professional development initiative for ECEC staff (Weiterbildungsinitiative Frühpädagogische Fachkräfte, WiFF) was launched in 2009 by the Federal Ministry for Education and Research and the Robert Bosch Foundation, together with the German Youth Institute. The WiFF initiative is currently in its fourth phase of funding (up to the end of 2022) and its work spans across three main areas, whose underlying objective is to strengthen the ECEC system by creating more consistent and transparent professional development programmes.

First, WiFF funds research studies on the professionalisation of ECEC staff focusing on inclusion, professional development and initial training at vocational school. The biannual Barometer for Early Education Professionals (Fachkräftebarometer Frühe Bildung), with three waves published so far in 2014, 2017 and 2019, provides comprehensive analyses on personnel, the labour market, the employment situation and the qualification of ECEC staff across Germany.

Second, the initiative provides competence-based training materials that link ongoing professional development to initial training and practical experience, enabling ECEC professionals to further develop their knowledge and skills, as well as their personal and social competences. WiFF publishes a series called Guides to Continuing Education (Wegweiser Weiterbildung) to provide guidelines in this area. In addition, the WiFF website includes a searchable database for professional development.

Third, WiFF acts as a professional network for the growing number of stakeholders in the field of ECEC, including vocational schools and academies for initial training, on-the-job training providers, policy makers, and ECEC provider organisations and researchers.

For further information, see: www.weiterbildungsinitiative.de.

Israel

In Israel, within each geographical district of the Ministry of Education, professional development for pre-primary staff is planned by integrating three main kinds of information. First, national policy of the Ministry of Education and particular guidelines at the district level regarding priorities for in-service professional development, such as areas of high importance or modes/types of activities. Second, a mapping of needs of various areas of in-service training for teachers within a given geographical district, which is provided by inspectors responsible for collecting the data from teachers. Third, a mapping of the diverse possibilities of in-service training in the given geographical district. Regional integrators develop the working interfaces as well as a common language among all relevant stakeholders, including policy makers, centres of professional development, instructors and academic institutions at the local, regional and national levels. The integrators also define clear goals and measurable results, and design and propose a training plan in light of teachers' needs and the training resources in the geographical district, also in alignment with regional guidelines and national policy.

In day-care centres for children under age 3, pedagogical trainers map needs for staff professional development and define monthly training plans in co-operation with ECEC leaders. In home-based centres, co-ordinators receive training from a pedagogical trainer.

Sources: Adapted from input provided by the national authorities in Germany and Israel; Flämig, K., A. König and N. Spiekermann (2015[36]), "Potentials, dissonances and reform initiatives in field-based learning and mentoring practices in the early childhood sector in Germany", http://dx.doi.org/10.1080/09575146.2015.1028899; Oberhuemer, P. and I. Schreyer (2017[34]), "Germany – ECEC workforce profile", www.seepro.eu/English/Country_Reports.htm; Buschle, C. and V. Gruber (2018[35]), *Die Bedeutung von Weiterbildung für das Arbeitsfeld Kindertageseinrichtung*, https://www.weiterbildungsinitiative.de/fileadmin/Redaktion/Publikationen/old_uploads/media/WiFF_Studie_30_Buschle_Gruber_WEB.pdf.

Associations between training and staff professional beliefs and practices

Association of training indicators with collaborative professional practices

The relationship between staff engagement in collaborative practices and in more formally structured training activities can shed light on effective ways to develop the skills of the ECEC workforce. TALIS Starting Strong data can be used to analyse how the frequency with which staff collaborate with colleagues is associated with their participation in formal professional development activities and with the variety and thematic breadth of such in-service training, thereby providing insights for ECEC systems as to whether formal and informal learning opportunities complement or substitute each other as avenues for skills development.

Analyses using the scale of staff engagement in collaborative professional practices suggest that, across countries and both among pre-primary staff and staff in centres for children under age 3, a stronger engagement in collaboration with colleagues working in the same ECEC centre is positively and consistently associated with staff's individual participation in recent in-service training, as well as with the variety of formats and the number of topics covered in such activities (Table 2.2). For instance, a one standard deviation increase in the scale of staff collaboration with peers is associated with a 60% greater likelihood that pre-primary staff participate in recent in-service training activities in Norway; a 40% increase in Korea; a 30% increase in Chile, Iceland and Japan; and with smaller increases in Germany, Israel and Turkey. On the contrary, collaboration with peers shows a weak and inconsistent association with the number of thematic areas in which staff report a high level of need for further professional development:

more frequent collaboration is reported by pre-primary staff who perceive fewer needs for further training in Chile and Japan, but also by pre-primary staff reporting more areas of high need in Korea.

Table 2.2. Staff engagement in collaborative practices and in structured training activities

Association between the staff scale of engagement in collaborative professional practices and training indicators

	Association between an increase in the staff scale of engagement in collaborative practices and…			
	… likelihood of staff participation in professional development activities in the 12 months prior to the survey	… number of thematic areas covered by staff in professional development activities in the 12 months prior to the survey	… number of thematic areas in which staff report a "high" need of further professional development	… number of professional development activities in which staff participated in the 12 months prior to the survey
Pre-primary education (ISCED 02)				
Chile	+	+	-	+
Germany*	+	+		+
Iceland	+	+		+
Israel	+	+	-	+
Japan	+	+	+	+
Korea	+	+		+
Norway	+	+		
Turkey	+	+		+
Denmark**				+
Centres for children under age 3				
Germany*	+			+
Israel		+		+
Norway	+	+		+
Denmark**		+	+	

+ Positive association
- Negative association
Association is not significant

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit the comparability of the data.
Notes: Based on logistic and OLS regression models predicting changes in the value of training indicators associated with a one standard deviation increase in the staff scale of engagement in collaborative professional practices. A "high" level of need for professional development is in contrast to reporting "no need at present", a "low" or a "moderate" level of need. Control variables include staff educational attainment; years of experience in early childhood education and care (ECEC); contractual status; working hours; role in the target group; ECEC centre location; ECEC centre type of management; number of children in the ECEC centre; number of staff per child in the ECEC centre; and percentage of children from socio-economically disadvantaged homes in the ECEC centre. See Annex B for more details on the variables in the models.
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.14.

StatLink https://doi.org/10.1787/888934206683

These results must be interpreted with caution, since the relationship between these practices may operate in both directions. Formal training activities may trigger collaboration if they stimulate knowledge sharing and joint work among colleagues, but it is also possible that staff seek to participate in a greater number of training activities and cover more topics after informal collaboration leads to exchanging recommendations or materials with peers. At the same time, certain motivational dispositions or contextual factors may also underlie staff engagement with both types of practices, albeit results are robust to the

inclusion of an extensive set of control variables in the regression models. While TALIS Starting Strong data do not permit to infer causality, these results strongly suggest a positive interplay between the engagement of ECEC staff in workplace-based collaboration and in more structured training activities, and therefore opportunities to develop the knowledge and skills of ECEC professionals through formal and informal channels simultaneously.

Additional analyses suggest that this positive association holds for all the thematic areas of training considered in this chapter. Across countries, staff in the top quarter of the scale of engagement in collaborative practices tend to participate more often in in-service professional development activities in any of the thematic areas than staff in the bottom quarter of the scale, with differences being significant in a large majority of cases. By contrast, fewer differences emerge with regard to reported needs for further professional development. In Israel, staff more strongly engaged in collaborative practices are less likely to report a high need for further training in several areas, whereas in Japan and Korea, more frequent engagement in collaboration tends to appear associated with a stronger perception of needing further training (Table C.2.15).

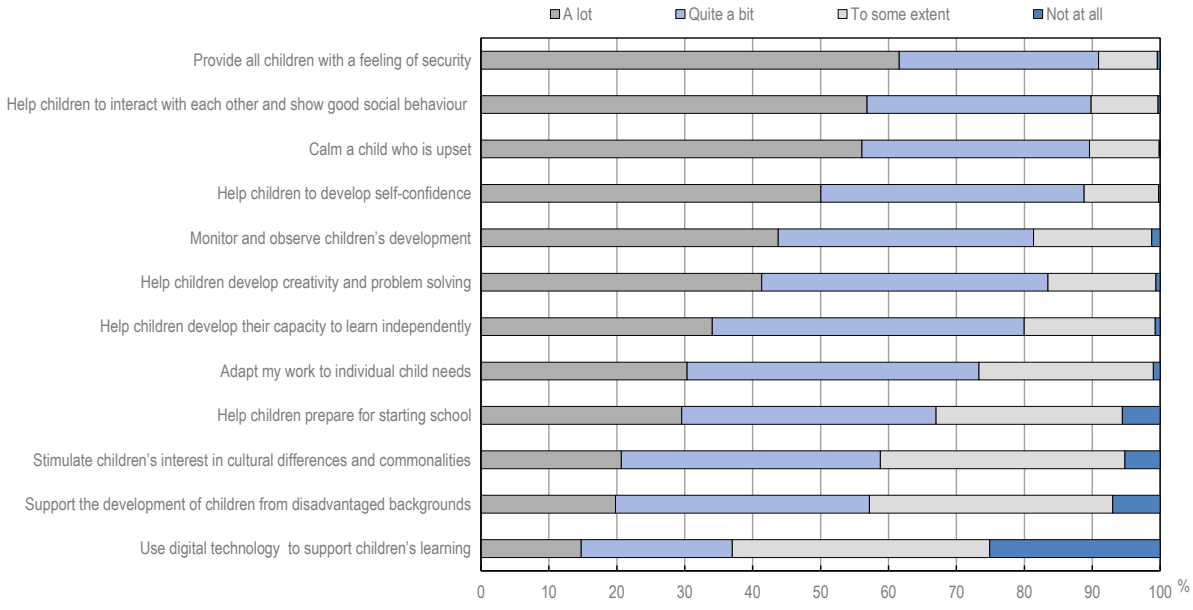
Association of training indicators with self-efficacy beliefs

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 (Bandura, 1997[37]; Tschannen-Moran and Hoy, 2001[38]). The importance of self-efficacy beliefs is predicated on their potential to influence efforts and behaviours to bring about desired goals. Research has documented positive links between educator self-efficacy and a range of outcomes, including self-reported and student-reported use of specific teaching practices (Zee and Koomen, 2016[39]). Several studies adapting self-efficacy scales to the ECEC context find that ECEC staff tend to have strong confidence in their ability to interact with children, but evidence on the links between staff self-efficacy and high-quality practices is inconclusive (Justice et al., 2008[40]; Guo et al., 2011[41]).

TALIS Starting Strong data reveal that ECEC staff tend to have a moderate or strong sense of self-efficacy across the 12 areas listed in the staff questionnaire, with the exception of the use of digital technology to support children's learning (Figure 2.14). The topics for which staff tend to report a stronger sense of self-efficacy relate generally to children's socio-emotional development, including instilling a feeling of security and self-confidence in children, promoting pro-social behaviour in children, and calming children when they are upset. Half or more of staff across countries report feeling that they achieve these tasks with "a lot" or "quite a bit" of ease. By contrast, staff tend to report lower levels of confidence in their ability to work with a diversity of children, be it in adapting their work to individual child needs, stimulating children's interest in cultural differences and commonalities, or supporting children from disadvantaged backgrounds. This applies to between one-quarter and one-half of staff across countries, who report low or no confidence in their ability for this type of work (Table C.2.16). However, as shown in Chapter 3, these averages mask substantial variation across countries with regard to overall and area-specific levels of reported self-confidence, which are known to reflect cross-cultural differences in response styles (van de Vijver and He, 2014[42]).

Figure 2.14. Staff sense of self-efficacy

Average percentage of pre-primary staff reporting that they feel they can do the following in their work with children



Note: Estimates for all staff.
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.16.

StatLink https://doi.org/10.1787/888934206607

By and large, staff role in the target group and years of experience in the sector are not consistently associated to their sense of self-efficacy, with no consistent patterns visible across countries. At the pre-primary level, the capacity to adapt work to an individual child's needs is the area of work where staff with more than three years of work experience more consistently report higher levels of self-efficacy than colleagues with less experience, with large differences found between experienced and novice teachers in Iceland, Norway or Turkey, and between experienced and novice assistants in Chile and Israel. Korea is the country where more experienced teachers report a higher sense of self-efficacy than novice teachers in a greater number of areas (Table C.2.17).

The education and care sectors are often considered to be behind the digitalisation curve. Societal demands are growing for education systems to take advantage of the tools and strengths of new technologies to promote greater quality and equity in learning outcomes, while simultaneously addressing concerns around potential misuse, including cyberbullying and privacy issues. The question of educators' ability to use digital technologies has thus become central to ongoing policy debates. Moreover, education systems have been compelled to explore the potential of technology in helping schools and ECEC settings to support children at a distance and in an asynchronous manner, as required, for instance, in home-based education and care arrangements during centre closures as a consequence of the Covid-19 pandemic. In such situations, digital tools can facilitate access to pedagogical resources or opportunities for interaction between children and staff.

The use of digital technology (e.g. computers, tablets, smart boards) to support children's learning is, by a large margin, the dimension of work with children where staff participating in TALIS Starting Strong express the lowest levels of self-efficacy. For instance, at the pre-primary level, the percentage of teachers who report "a lot" of confidence in their ability to use digital technology for these purposes is below 20% in all

countries except Chile and Turkey, and while it is reasonable to expect that the integration of digital tools into initial preparation programmes has increased in recent years, it is only in Israel that novice teachers are significantly more confident than their more experienced peers in this respect (Table C.2.17). However, as noted above, results need to be interpreted with caution as social desirability bias may influence staff responses in different ways across countries. Moreover, staff self-efficacy for using technology to support children's learning may also be linked to other factors, such as the quality of digital infrastructure in ECEC settings or staff expectations about the extent to which digital tools should be integrated into their work with children. It is also important to note that survey respondents likely considered uses of technology while the children were physically present in the ECEC centres, rather than a virtual or remote learning scenario. Recent reviews and examples of bespoke professional development programmes suggests that the major challenges for integrating digital technology into ECEC work relate less to the availability of effective tools than to the provision to staff of sound pedagogical guidance for a developmentally appropriate use of technology (Belo et al., 2016[43]; Trainin, Friedrich and Deng, 2018[44]).

Another goal of this chapter is to analyse the association between staff sense of self-efficacy and training indicators. This is done by using both the staff scale of self-efficacy for supporting children's development, learning and well-being (see Annex B), and self-efficacy reports in relation to particular areas of work and training. Across the nine countries participating in TALIS Starting Strong, the sense of self-efficacy of ECEC staff is positively and consistently associated with the thematic breadth of their training. This holds true for both the number of areas that staff covered in their pre-service education and training programmes as well as for the number of areas that they covered in both pre-service and in-service training, especially at the pre-primary level (Table 2.3).

By contrast, participation in in-service training is not in itself associated with a stronger sense of self-efficacy for supporting children's development in any of the countries. Associations between staff self-efficacy and perceived needs for professional development are also weak and inconsistent. Only among pre-primary staff in Iceland does a stronger sense of self-efficacy bear a negative association with the number of areas where staff report a high need for further professional development, whereas among pre-primary staff in Germany, Japan and Korea, the association is positive. These results need to be interpreted with care as potential links between the thematic breadth of training and staff sense of self-efficacy for supporting children's development may operate in both directions. Covering a larger number of contents in training activities may boost staff confidence in their ability to work with children, but it is also possible that staff with a strong sense of self-efficacy seek to explore more topics in further training than staff who feel less confident in this respect.

The association between staff training trajectories and their sense of self-efficacy can also be explored more granularly in relation to specific areas of work, given the partial overlap between the training topics and self-efficacy items in the staff questionnaire. A case in hand is staff self-efficacy for helping children to develop creativity and problem solving, which is conceptually aligned with the training contents included in the thematic area "Playful learning". Analyses suggest that, relative to staff with no training in this area, the likelihood that staff report a strong sense of self-efficacy for this task tends to increase most for staff who covered the area in both their pre-service and in-service training than for staff who covered it at one point in time only (Figure 2.15). For instance, pre-primary staff in Chile, Iceland and Israel whose training included contents related to facilitating play or facilitating creativity and problem solving in both initial and on-the-job training are more likely than colleagues with less training in this area to report a strong sense of self-efficacy for children to develop creativity and problem solving. The same holds true in Turkey, albeit differences in likelihood are small.

Table 2.3. Staff sense of self-efficacy for supporting children's development and training indicators

Association between the staff scale of self-efficacy for supporting children's development, learning and well-being, and participation in and thematic breadth of training

	Change in the staff scale of self-efficacy for supporting children's development associated with…			
	… number of thematic areas covered by staff in their pre-service education or training programme focused on working with children	… staff participation in professional development activities in the 12 months prior to the survey	… number of thematic areas covered by staff in both pre-service education and training and in professional development activities in the 12 months prior to the survey	… number of thematic areas in which staff report a "high" need of further professional development
Pre-primary education (ISCED 02)				
Chile	+		+	
Germany*	+		+	+
Iceland	+		+	-
Israel	+		+	
Japan	+		+	+
Korea	+		+	+
Norway	+		+	
Turkey	+		+	
Denmark**	+		+	
Centres for children under age 3				
Germany*	+			
Israel			+	
Norway	+		+	
Denmark**				

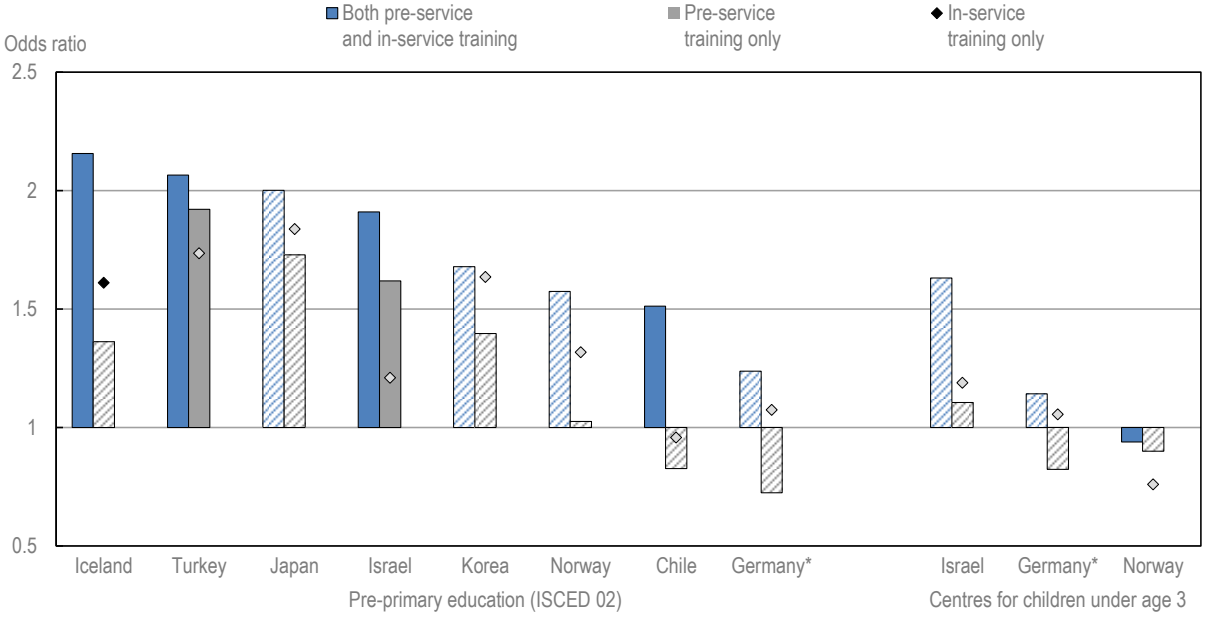
+ Positive association
- Negative association
Association is not significant

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit the comparability of the data.
Notes: Based on OLS regression models predicting changes in the value of the staff scale of self-efficacy for supporting children's development, learning and well-being associated to one-unit increases in the value of training indicators. A "high" level of need for professional development is in contrast to reporting "no need at present", a "low" or a "moderate" level of need. Control variables include staff educational attainment; years of experience in early childhood education and care (ECEC); contractual status; working hours; role in the target group; ECEC centre location; ECEC centre type of management; number of children in the ECEC centre; number of staff per child in the ECEC centre; and percentage of children from socio-economically disadvantaged homes in the ECEC centre. See Annex B for more details on the variables in the models.
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.18.

StatLink https://doi.org/10.1787/888934206702

Figure 2.15. Association between staff sense of self-efficacy for helping children to develop creativity and problem solving, and training in the area

Likelihood of reporting a strong sense of self-efficacy ("a lot"), by training trajectory and relative to staff with no related training



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Estimates from a logistic regression model that predicts the likelihood that staff report a strong sense of self-efficacy ("a lot") for helping children to develop creativity and problem solving based on staff training trajectories in the thematic area "Playful learning" (see Table 2.1), with lack of training as the reference category. Solid bars and markers indicate statistically significant coefficients. Relative to the reference category, odds ratios above 1 indicate a higher likelihood of reporting a strong sense of self-efficacy, whereas odds ratios below 1 indicate a smaller likelihood. Control variables include staff educational attainment; years of experience in early childhood education and care; contractual status; working hours; role in the target group; ECEC centre location; ECEC centre type of management; number of children in the target group; number of staff per child in the target group; and percentage of children from socio-economically disadvantaged homes in the target group. See Annex B for more details on the variables in the model.
Countries are ranked in descending order of the value of odds ratios for the category "Both pre-service and in-service training".
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.19.

StatLink https://doi.org/10.1787/888934206626

While the reference group of staff with no training in the area "Playful learning" is small in all the countries participating in TALIS Starting Strong, it represents a theoretically relevant benchmark for comparisons with other training trajectories. For instance, pre-primary staff in Iceland, Israel and Turkey with repeated training in the area are about twice as likely as staff with no training in the area to report a strong sense of self-efficacy, whereas staff in Israel and Turkey who covered the area in their initial preparation programmes only, as well as staff in Iceland who covered the area in recent in-service training only are about 50% more likely to do so. By contrast, training in the area leads to no or minimal differences in staff sense of self-efficacy among staff in centres for children under age 3.

Importantly, results for other dimensions of staff self-efficacy, namely adapting work to individual child needs, helping children to prepare for starting school, and monitoring and documenting child development, show a similar pattern, with associations reaching statistical significance among pre-primary staff in the majority of countries (Table C.2.19). Overall, results point again towards cumulative training across various

career stages having the strongest effect on staff sense of self-efficacy in various areas of work, relative to lack of training or more occasional training.

Association of training indicators with practices with children

Process quality in ECEC refers to the quality of interactions when staff engage with children and with parents, and when children interact with one another. Without strong process quality, ECEC falls short of promoting children's early learning, development and well-being (OECD, 2018[4]). TALIS Starting Strong provides two indicators of process quality relating to the dimension of individual support and group organisation based on practices used by staff in their work with the target group: 1) adaptive practices, which include various practices to engage children depending on their backgrounds, interests and needs; and 2) behavioural support, which includes practices to ensure children's behaviour is supportive to learning and development. As shown in the first volume of TALIS Starting Strong, ECEC staff participation in education and training is positively associated with process quality, albeit these associations are not uniform either across or within countries. Staff who have training specifically to work with children report adapting their practices to support all children's learning, development and well-being in pre-primary centres more than colleagues without this type of training in Chile, Israel, Japan, Korea and Turkey, as well as in centres for children under age 3 in Israel (OECD, 2019, p. 109[2]). Links to practices for providing behavioural support to children are, however, less consistent. Participation in some types of in-service training is also associated to staff reporting a greater use of adaptive practices and more behavioural support to children in a number of cases (OECD, 2019, p. 123[2]).

Further insights into the relationship between ECEC staff training and their practices with children emerge by looking at how these associations vary according to the breadth of training and to training trajectories in specific areas. The thematic breadth of the training received by ECEC staff shows a largely positive association with indicators of process quality in staff-children interactions, after accounting for a large number of other staff and centre characteristics. The number of thematic areas included in staff initial preparation programmes focused on working with children is positively associated with the use of adaptive practices in all of the participating countries except Germany at the pre-primary level, and in Israel and Norway for staff working in centres for children under age 3. Similarly, staff having covered more areas in their pre-service training engage more frequently in practices for providing behavioural support to children in Israel, Japan and Norway at the pre-primary level, and in Israel and Norway for staff working in centres for children under age 3 (Table 2.4, left panel).

The association between breadth of training and staff practices indicative of process quality is also positive when considering the number of thematic areas that staff covered in both their initial preparation programmes and their ongoing professional development activities. In the case of adaptive practices, a significant and positive relationship is observed in all of the participating countries, including Germany, at both the pre-primary level and among staff working in centres for children under age 3. It is noteworthy that in Germany, the association with adaptive practices is significant for the breadth of in-service training but not of pre-service training, as Germany is the country where staff participate in the lowest average number of in-service training activities and where staff cover the lowest average number of areas in such activities (Tables C.2.4 and C.2.9).

Regarding practices for behavioural support, the association holds true for staff in Norway at centres at both levels, and in Israel for centres for children under age 3 (Table 2.4, right panel). Results thus indicate that the coverage of a larger number of training topics is more consistently associated with staff providing individual support to children through adaptive practices than with the dimension of group organisation through behavioural support.

Table 2.4. Association between staff practices with children and thematic breadth of training

Change in the staff scales of adaptive practices and practices for behavioural support associated with the number of thematic areas covered by staff in pre-service and recent in-service training

	Number of thematic areas covered in pre-service training		Number of thematic areas covered in both pre-service and recent in-service training	
	Adaptive practices	Practices for behavioural support	Adaptive practices	Practices for behavioural support
Pre-primary education (ISCED 02)				
Chile	+		+	
Germany*			+	
Iceland	+		+	
Israel	+	+	+	
Japan	+	+	+	
Korea	+		+	
Norway	+	+	+	+
Turkey	+		+	
Denmark**	+		+	
Centres for children under age 3				
Germany*			+	
Israel	+	+	+	+
Norway	+	+	+	+
Denmark**				

+ Positive association
- Negative association
Association is not significant

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit the comparability of the data.
Notes: Based on OLS regression models predicting changes in the value of the indices of staff practices with children associated to one-unit increases in the value of training indicators. Control variables include staff educational attainment; years of experience in early childhood education and care; contractual status; working hours; role in the target group; ECEC centre location; ECEC centre type of management; number of children in the target group; number of staff per child in the target group; and percentage of children from socio-economically disadvantaged homes in the target group. See Annex B for more details on the variables included in the models.
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Tables C.2.20 and C.2.21.

StatLink https://doi.org/10.1787/888934206721

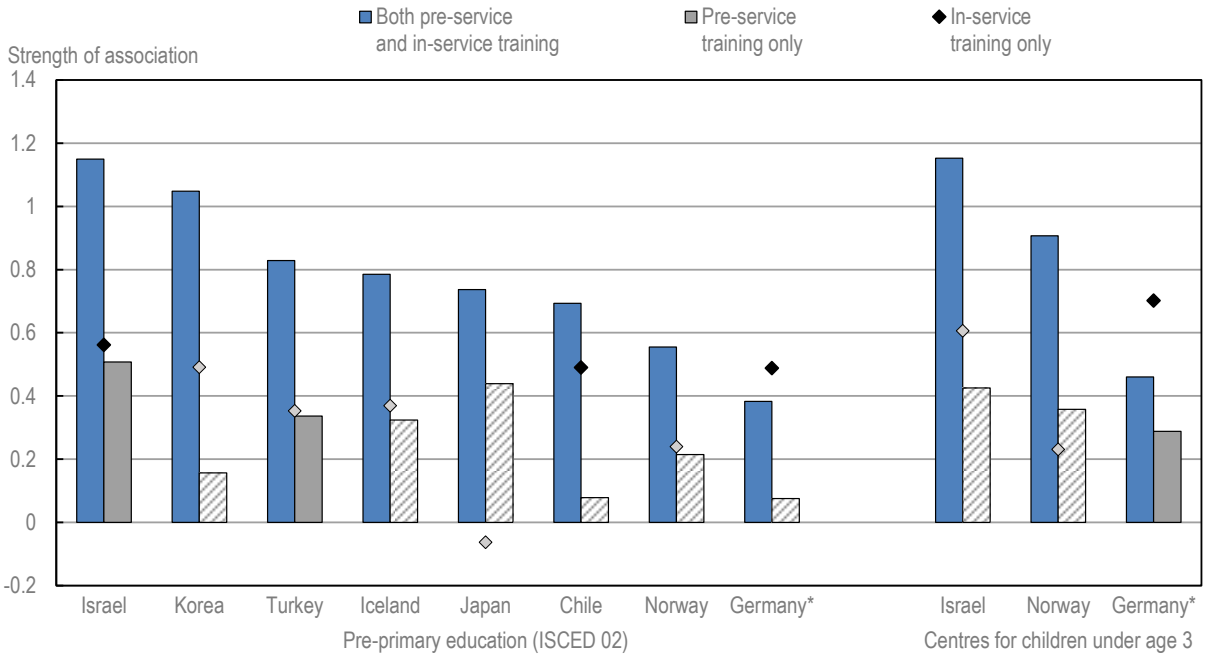
Policy makers and professional development planners in ECEC systems may also legitimately question whether thematic breadth is good in itself, or whether training contents need to be more closely connected to the targeted staff practices. Training programmes including a greater number of thematic areas may help ECEC staff to develop more flexible ways of thinking and to transfer knowledge and approaches from one area to another, but training with a more specific and in-depth focus may be more important for practices that require more specialised skills.

Variation in the use of specific practices between staff with different training trajectories in a related area can bring a more fine-grained perspective to this question. The TALIS Starting Strong staff scale of adaptive practices includes several items that bear a close connection to training contents in the area of working with a diversity of children, such as adapting activities to suit different children's interests, levels of development or cultural backgrounds (see Annex B). This provides an opportunity to look at variation in

the extent to which staff adapt to children's needs and interests in relation to their exposure to these training contents, while accounting for other staff and centre characteristics. This analysis indicates that the use of adaptive practices with children is more frequent among staff who covered contents related to working with a diversity of children in both pre-service and in-service training than among staff with less exposure to these topics, as when covered in initial preparation only, in-service training only or not covered at all (Figure 2.16). The sole exception to this pattern is Germany, where recent in-service training in the area is more strongly associated with individual support practices than cumulative training for staff at both the pre-primary level and in centres for children under age 3. In a remarkably consistent way, though, a strong positive association is observed between training for working with a diversity of children, especially when also provided in-service, and staff use of adaptive practices with children, relative to staff whose training did not include contents in this area (Table C.2.22).

Figure 2.16. Association between staff use of adaptive practices and training for working with a diversity of children

Change in the staff scale of use of adaptive practices associated with staff training trajectories for working with a diversity of children, relative to staff with no related training



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Estimates from an OLS regression model that predicts values of the staff scale of adaptive practices based on staff training trajectories in the thematic area "Diversity" (see Table 2.1), with lack of training as the reference category. Solid bars and markers indicate statistically significant coefficients. Control variables include staff educational attainment; years of experience in early childhood education and care; contractual status; working hours; role in the target group; ECEC centre location; ECEC centre type of management; number of children in the target group; number of staff per child in the target group; and percentage of children from socio-economically disadvantaged homes in the target group. See Annex B for more details on the variables included in the model.
Countries are ranked in descending order of the value of coefficients for the category "Both pre-service and in-service training".
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.22.

StatLink https://doi.org/10.1787/888934206645

The same analysis can be carried out to examine staff use of behavioural support practices in relation to training in the area "Classroom/playgroup/group management" given their conceptual alignment (see

Annex B). In this case, however, staff training trajectories show a weaker and less consistent association with staff's use of such practices. A positive relationship between training in the area and frequency of behavioural support practices is, nonetheless, observed in Israel and Norway at the pre-primary level, being of a similar magnitude for training at different stages (Table C.2.22).

Overall, the absence of negative associations across outcomes and countries suggests that thematic breadth, measured as the number of areas that staff cover in their training, does not seem to translate into a poorer quality of professional development. The consistent direction of these associations suggests that a greater variety and alignment of training topics between in-service and pre-service training can generally promote the use of practices supportive of process quality among ECEC staff. Nonetheless, thematic scope must always be accompanied by a strong focus on the quality of the contents and delivery, and ECEC systems should remain wary of training programmes that are "a mile wide but an inch deep".

Israel and Norway are the two countries where training indicators show a more consistently positive association with staff practices, as well as a positive relationship with staff self-efficacy. This points to a strong quality dimension of the professional development for ECEC staff in these two countries. For instance, for all teachers and assistants in Norway, levels of participation in ongoing professional development activities are the highest among countries participating in TALIS Starting Strong, and also high among pre-primary teachers in Israel (see Figure 2.4). Thematic breadth and alignment between pre-service and in-service training are high in Israel for both teachers and assistants and the pre-primary level, and also for teachers in centres for children under age 3 (Table C.2.9). Moreover, in both countries, levels of staff engagement in regular feedback exchanges with colleagues are also high, and especially in Norway (Table C.2.7). In turn, teachers in Israel, at both the pre-primary level and in centres for children under age 3, report the highest levels of participation in coaching and mentoring activities (Table C.2.4). This suggests that professional development strategies for shaping process quality in ECEC can take different routes, but that these are often characterised by well-aligned training offerings and personalised approaches.

An equity focus on staff education and training trajectories

Many countries have stepped up their financial support for ECEC provision in recent years in response to a growing consensus on the important role that early childhood education and care can play in promoting children's early development and well-being and in helping disadvantaged children to have more equal chances in life (OECD, 2017[45]). Early childhood programmes are increasingly seen as a means of giving children from disadvantaged or immigrant backgrounds a strong start in life, and thus to mitigate the economic and linguistic disadvantages that could otherwise hinder their development and integration in society. Several countries participating in TALIS Starting Strong have a substantial share of ECEC centres with sizable groups of children from socio-economically disadvantaged homes or whose first language is different from the language used in their centre, partly as a result of policy efforts for improving access for minority and disadvantaged children (OECD, 2019, p. 150[2]). This represents an opportunity to support these children in their early development, but requires specials measures to adapt ECEC provision to their specific needs.

Evidence from PISA shows that socio-economic gaps in academic achievement tend to persist by age 15 after taking into account participation and length of exposure to ECEC programmes (Shuey and Kankaraš, 2018[46]). Reasons for the persistence of these gaps arguably include aspects of home learning environments, but also aspects such as the quality of ECEC programmes that children from different backgrounds attend. Numerous studies show indeed that cultural and social barriers continue to hinder access to high-quality ECEC provision for disadvantaged families, and that staff-child interactions tend to be of lower quality in groups with a greater share of children living in poverty or from immigrant backgrounds (OECD, 2018[4]).

At the school level, many countries address structural quality by compensating disadvantaged schools with smaller classes and/or lower student-teacher ratios. However, in more than a third of the countries participating in PISA, teachers in the most disadvantaged schools are less qualified or less experienced than those in the most advantaged schools (OECD, 2018[12]). A potential effect of teacher sorting across schools is to perpetuate or increase differences in the quality of instruction received by children of different backgrounds, therefore affecting the equity of education systems.

TALIS Starting Strong data provide an opportunity to investigate the extent of staff sorting across ECEC settings depending on the characteristics of children and ECEC centres. Two key indicators in this respect are the concentration of children from socio-economically disadvantaged homes or whose first language is different from the language(s) used in their ECEC centre. In both cases, comparisons can be made between centres where the percentage of children in these categories is below or equal to 10%, or higher than 10%.

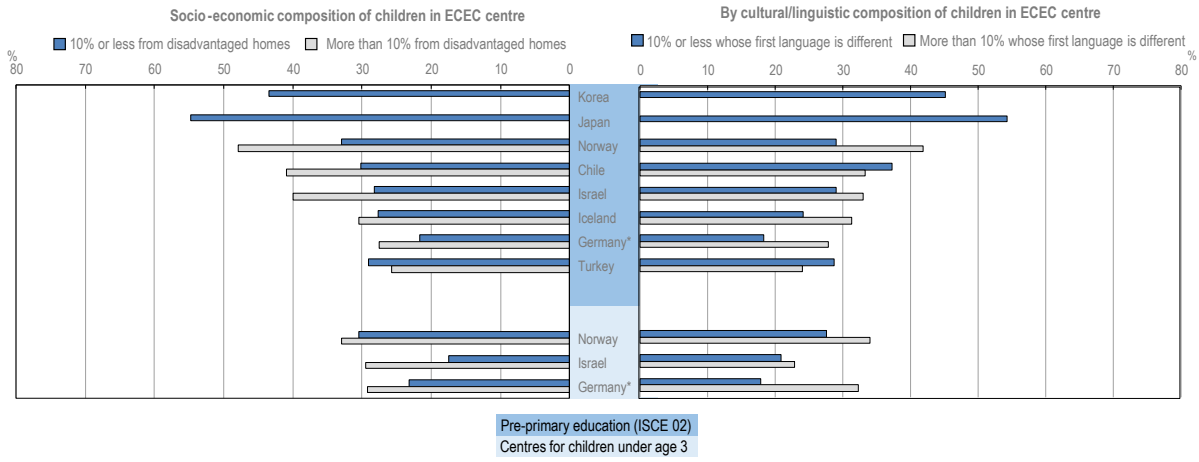
As reported in the first volume TALIS Starting Strong 2018, in all participating countries, the distribution of staff with higher educational attainments (i.e. a bachelor's degree or equivalent or higher) is similar across centres with different rates of children from socio-economically disadvantaged homes (OECD, 2019, p. 160[2]), while in Chile, Denmark (with low response rates) and Turkey at the pre-primary level, as well as in Norway for centres for children under age 3, staff with higher qualifications are more likely to work in target groups with 11% or more children from disadvantaged backgrounds than in groups where this proportion is smaller (see Table D.3.27 in (OECD, 2019[2])).

In this chapter, the equity focus is placed on variation in staff education and training pathways across centres serving children with different backgrounds. Results suggest that staff participation in training, in the form of either completing an initial preparation programme focused on working with children or undertaking recent in-service training, is remarkably similar between centres with higher and lower proportions of children from disadvantaged homes and of children whose first language is different from the language used in the ECEC setting that they attend. This is observed in all the countries participating in TALIS Starting Strong 2018 for which the data can sustain this comparison and in both pre-primary centres and centres for children under age 3. In the few instances that deviate from this pattern, staff levels of participation in training are higher in ECEC centres with a greater percentage of socio-economically disadvantaged or dual language learner children. This is the case in Chile, Denmark (with low response rates) and Turkey, at the pre-primary level, and in Germany, for centres for children under age 3, with regard to staff participation in-service training activities (Table C.2.23).

Analyses of staff training trajectories in the area of working with a diversity of children shed further light on the distribution of staff skills profiles across centres that serve different populations of children. Results indicate that staff working in more diverse ECEC centres more often have covered training contents for working with a diversity of children, therefore suggesting a good alignment between their training and the socio-economic and cultural/linguistic composition of the populations of children that they work with (Figure 2.17). At the pre-primary level, the proportion of staff trained for working with a diversity of children in both their initial preparation programmes and in recent in-service training is 10 or more percentage points greater in centres with a higher proportion of children from disadvantaged homes than in centres with more advantaged children in Chile, Denmark (with low response rates) and Israel, as well as in centres for children under age 3 in Denmark (with low response rates) and Israel (Table C.2.24). In turn, positive differences in the proportion of staff with cumulative training for supporting diverse groups of children between ECEC centres with a higher and smaller proportion of dual language learners are observed in Germany, Iceland and Norway, at the pre-primary level, and in Germany, in centres for children under age 3 (Figure 2.17). While the cross-sectional nature of TALIS Starting Strong data cannot distinguish whether training choices precede or reflect the challenges that staff encounter in the centres where they are employed, the results suggest that training requirements and opportunities for better addressing children's diversity in both initial preparation and continuous professional development programmes effectively shaped staff profiles in more diverse ECEC settings.

Figure 2.17. Staff trained to work with a diversity of children, by characteristics of the children in their early childhood education and care centres

Percentage of staff with training to work with a diversity of children in both pre-service and recent in-service training, by socio-economic and dual language composition of children in the ECEC centre



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Estimates for all staff. For contents included in the thematic area "Diversity"; see Table 2.1.
Countries are ranked in descending order of the percentage of staff trained to work with a diversity of children in centres with more than 10% of children from socio-economically disadvantaged homes.
Source: OECD (2019[14]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.2.24.

StatLink https://doi.org/10.1787/888934206664

Importantly, these results are consistent with findings reported in the first volume of TALIS Starting Strong showing that, in several countries, classroom/playgroup/group practices in support of diversity, such as the use of books and pictures or toys and artefacts featuring or coming from multiple ethnic and cultural groups, tend also to be found in centres that show a greater share of children from socio-economically disadvantaged homes and whose first language is different from the language used in the centre (OECD, 2019, p. 173[2]).

The provision of training opportunities for working with diverse groups of children and actual classroom practices in support of diversity reflect the increasing awareness and efforts of ECEC systems to address challenges related to social inequality and social diversity. Recent initiatives to improve inclusion in ECEC with a focus on increasing the skills of ECEC staff and centre leaders have, for instance, been implemented in the Flemish Community of Belgium and in Luxembourg (Box 2.4). In turn, evidence from TALIS Starting Strong suggests that staff training profiles in the participating countries respond to the challenges associated with increasingly diverse groups of children in ECEC settings, in that greater numbers of staff trained specifically to address children's socio-economic and linguistic diversity work in the ECEC centres where such skills are arguably needed the most. Such a distribution of staff training profiles across ECEC centres appears in line with the ambition that ECEC helps to mitigate social inequalities among children at an early stage of their lives.

Box 2.4. Training the early childhood education and care workforce to engage with diverse groups of children

Flemish Community of Belgium

The project *Kleine Kinderen, Grote Kansen* (Little Children, Big Opportunities) is a collaboration between the Flemish Ministry of Education and Training, the King Baudouin Foundation, and Flemish teacher education programmes aiming to better equip students in teacher training institutes in dealing with poverty, diversity and social equity in pre-primary education. The project brings together lecturers from all Flemish teacher training institutes into a professional learning community to discuss ways to improve initial preparation programmes (at bachelor level) for future pre-primary teachers to promote the skills these early childhood education and care (ECEC) professionals will need in order to provide each child with an equal opportunity. Other participants in the initiative include organisations with expertise in child poverty and equal opportunity policies in early childhood education, and pedagogical counsellors coaching and guiding staff in ECEC centres. The project identifies two main dimensions for training required to promote equity in ECEC: 1) qualitative staff-child interactions, in particular with children in social vulnerability, need compensation and anticipating actions; and 2) alternative conceptual framings for ECEC teachers' values and beliefs about child poverty and vulnerability.

The first round of the project ran from 2015 to 2018, and a follow-up phase took place between 2018 and 2020 with a focus on further implementation of the results from the first round. In addition, the project website offers ECEC educators a repository of resources on fighting deprivation and a lack of opportunities at a young age and on how to deal with diversity.

For further information, see: http://www.grotekansen.be/nl/en/247.

Luxembourg

With the goal to help young children to develop their language skills and be better prepared for its trilingual society and school system, in October 2017 Luxembourg introduced a multilingual ECEC education programme for children ages 1-4. The programme aims to help children develop Luxembourgish and become familiar with French, giving children opportunities to listen to and express themselves in both languages before starting primary school. Children were also encouraged to use their home languages in order to value their diverse (linguistic) backgrounds. ECEC teachers and assistants providing multilingual education receive initial and ongoing training specifically focused on helping young children to acquire language skills. The government finances the additional staffing resources needed by ECEC settings following the adoption of the multilingual education programme, which amount to approximately an additional 10% of staff working hours.

Prior to the introduction of the programme, the research project "Developing Multilingual Pedagogies in Early Childhood" (MuLiPEC) at the University of Luxembourg carried out and evaluated a 15-hour professional development course on multilingual education delivered to 46 ECEC practitioners in Luxembourg. Training contents included evolving perspectives on multilingualism; ways of valuing home languages; language modelling; and methods for developing Luxembourgish, French and German. In addition, the research team observed and coached seven practitioners during one academic year. An evaluation study found that the training positively influenced participants' knowledge of multilingualism and language learning, reinforced their understanding of the importance of interactions and language supporting strategies, and their attitudes towards home languages. The observations in ECEC settings also showed that practitioners reflected on their beliefs and practices, and started engaging in more inclusive multilingual practices (Kirsch et al., 2020[47]).

For further information, see: http://www.men.public.lu/fr/enfance/en/05-multilingual-education; https://wwwen.uni.lu/research/fhse/dhum/research_areas/multilingualism/projects_and_publications/

Sources: Based on input provided by the national authorities in the Flemish Community of Belgium and Luxembourg; Kirsch, C. et al. (2020[47]), "Developing multilingual practices in early childhood education through professional development in Luxembourg", https://doi.org/10.1080/19313152.2020.1730023.

Policy pointers

This chapter presented findings from TALIS Starting Strong about the skills development pathways of ECEC staff, and in particular about the alignment between their initial preparation programmes and in-service training and about their engagement in collaborative professional practices. The chapter also explored associations between training indicators and staff beliefs and practices related to process quality in ECEC settings, as well as variation in staff training trajectories across ECEC centres serving more and less diverse groups of children.

These findings point to several policies for developing the skills of the ECEC workforce, contributing to their professionalisation and ensuring that all children benefit from staff with strong skills:

1. Setting the conditions and raising support for staff participation in professional development, spanning across initial preparation programmes, in-service training and collaborative practices that create opportunities for informal learning.
2. Improving the alignment of professional development across career stages by better assessing staff needs, barriers for participation and the quality of training activities, as well as helping staff to develop specific skills in settings where they are needed most.
3. Raising the status and rewards of the profession to attract more entrants and retain staff as they upgrade their skills through continuous professional development, as well as arranging working time to ensure that staff can devote time to training activities and collaboration with colleagues. Staff working conditions are discussed in Chapter 3.
4. Foster the development of high-quality leadership that guides and supports staff in their professional development plans, including by fostering collegial relationships within ECEC centres to promote collaborative practices. Functions of leadership are discussed in Chapter 4.

The first two policy pointers are discussed below.

Support for high-quality professional development

Training focused on working with young children is essential for promoting process quality and fostering children's learning, development and well-being. With a flexible phasing, countries could mandate, for all staff interacting with children in ECEC settings, pre-service training that prepares staff specifically to work with children, covers a broad curriculum and places an emphasis on workplace-based learning.

The initial preparation of around one in four or more staff in Chile, Iceland and Turkey at the pre-primary level, and of staff in Denmark (with low response rates), Israel and Norway at both the pre-primary level and in centres for children under age 3, did not include training with a specific focus on working with children (Table C.2.1). For working staff, the mandate to undertake this type of training could come with targeted professional development opportunities, financial support and flexible time arrangements. In addition, the curricula of education and training programmes that prepare staff specifically to work with children should adopt an ambitious scope. At the pre-primary level, staff in Korea and Turkey tend to cover the largest number of thematic areas in their pre-service training, whereas in Chile, Iceland and Israel, more than one in five staff lacks pre-service training in areas such as classroom/playgroup/group management, working with parents/families or working with a diversity of children (Table C.2.2). Initial

preparation programmes that require workplace-based placements to bridge theory and practice tend also to cover a larger number of training areas. Countries like Chile could take steps to increase the percentage of staff with such practical training (Table C.2.1).

Besides initial education and training, high-quality in-service professional development can be a key lever of process quality and of staff growth and retention in the ECEC sector. Responses to the OECD *Quality beyond Regulations Survey* suggest wide variation in the intensity of regulation of in-service training among countries participating in TALIS Starting Strong (Table 2.5). A larger number of countries have requirements or incentives to participate in ongoing professional development activities for teachers than for assistants, often relying on requirements for minimum yearly participation and a mix of direct and indirect incentives. In Germany, regulations on participation in continuous professional development vary across the 16 *Länder* and depend on what is defined in the individual contracts. In general, ECEC staff in Germany are not obliged to participate in professional development activities. However, some *Länder* do have a regulation which requires participation, being for example mandatory in Mecklenburg-Pomerania, where staff are required by law to attend five days of training annually, and in Thuringia, which sets the requirement at two days per year. In 14 out of the 16 *Länder*, ECEC staff can also benefit from the cross-sectoral educational leave entitlement (*Bildungsurlaub*), which grants employees the right to take up to five days a year off for paid professional development. Israel provides financial incentives as well as formal accreditation and promotion mechanisms, and more than 95% of pre-primary teachers in the country take part in on-the-job training, with 5 different types of activities, on average. Teachers in Norway have similar participation rates, supported by time entitlements, but also by financial incentives for employers in the sector. Turkey regulates all these aspects, but participation rates for teachers remain more modest, at about 83% (Table C.2.4). Among pre-primary assistants, levels of participation in ongoing training are highest in Norway, at about 90%, and in Germany, at about 80% (Table C.2.4). Both countries apply the same requirements and incentives for teachers as for assistants.

Table 2.5. Requirements and incentives for participation in professional development

	Denmark	Germany	Iceland	Israel	Japan	Norway	Turkey
Teachers							
Minimum yearly participation (hours per year)							
Formal recognition and accreditation							
Time incentive for participation in professional development							
Financial incentive							
Promotion							
Sanction							
Assistants							
Minimum yearly participation (hours per year)							
Formal recognition and accreditation							
Time incentive for participation in professional development							
Financial incentive							
Promotion							
Sanction							

Regulated
Common practice
Not applicable

Notes: Information applies to different settings in each country. Denmark: kindergarten. Germany: early childhood education and care centre for children over 3 to 6/school entry, and response at the federal level. Iceland: preschool. Israel: kindergarten. Japan: kindergarten. Norway: kindergarten. Turkey: independent kindergarten.

Source: OECD (2019[15]), "OECD Network on Early Childhood Education and Care: Quality beyond Regulations survey", *internal document, OECD, Paris.*

Professional development strategies should not only propose structured training, but should also seek to create conditions that foster informal learning among ECEC professionals. These may include setting aside time and tools for staff to share knowledge and experiences in informal ways, but also making staff aware that this is valuable and encouraged. Placing a greater emphasis on informal learning may, however, require organisational changes in professional development programmes, including fighting inertia in established institutional structures and moving away from arrangements that privilege models with sharply differentiated roles for trainers and trainees. The reported frequency of staff discussions with centre colleagues is high in many countries, but especially in Norway, where both teachers and assistants engage in frequent feedback exchanges about each other's practice. In Korea and Japan, on the other hand, staff report relatively low engagement in these exchanges (see Figure 2.9).

Assessment for improving the alignment and quality of professional development

Professional development programmes in ECEC need to provide coherent pathways for skills development for staff with different types of initial preparation, working in different roles and with different levels of experience. Designing such pathways calls for aligning the contents of pre-service and in-service training with the needs of staff, which in turn requires measures to assess such needs and the barriers for participation in training, as well as the impact of such training on staff beliefs and practices.

Responses to the OECD *Quality beyond Regulations Survey* suggest that mechanisms for a systematic and reliable assessment of staff needs for professional development and of the quality of training activities could be strengthened in many of the countries participating in TALIS Starting Strong (Table 2.6). Norway relies on different sources of information for assessing needs and the quality of professional development, and the topic is being addressed as part of an ongoing evaluation of the national strategy. In Israel, at the pre-primary level, the mapping of needs and training offerings is the responsibility of inspectors, whereas assessment of barriers for participation in professional development and of the quality of such activities is the responsibility of the regional integrators. In centres for children under age 3, the tasks falls on pedagogical trainers and centre leaders (see Box 2.3). In Germany, scientific studies have been conducted to assess professional development needs and barriers to participation, but there is no systematic national monitoring and assessments tend to remain provider-specific and contract-specific. And in Japan, local authorities design legally mandated in-service training activities for novice and mid-career pre-primary teachers in public ECEC centres after surveying their professional development needs. Local authorities are also encouraged to gather feedback from participants and evaluate the outcomes of these activities.

Analyses in this chapter point to a number of aspects on which more developed assessment systems could focus. Across countries, most of the thematic areas covered by staff in recent in-service training were already included in their initial preparation programmes (see Figure 2.11 and Table C.2.10). This is especially the case for contents related to child development, play, creativity and problem solving, and to working with a diversity of children. For staff, this may bring opportunities for updating and strengthening skills in those areas. This, however, requires a smart scaffolding of education and training offerings across career stages, to avoid duplication of contents and ensure consistency in approaches.

By contrast, other topics, namely those related to pedagogy, classroom/playgroup/group management and children's transitions to primary school, are much less frequently included in on-the-job professional development activities. For instance, less than a third of pre-primary staff in Germany, Japan and Turkey were exposed to pedagogy-related topics in their recent in-service training (Table C.2.10). Given an evolving knowledge base, countries may evaluate the extent to which more staff would need to be exposed to updated contents and approaches in ongoing training.

Table 2.6. Assessment mechanisms for improving professional development in early childhood education and care

	Denmark	Germany	Iceland	Israel	Japan[1]	Japan[2]	Norway	Turkey
Teachers								
Assessment of professional development needs								
Assessment of barriers for participation in professional development								
Assessment of the quality of professional development activities								
Assistants								
Assessment of professional development needs								
Assessment of barriers for participation in professional development								
Assessment of the quality of professional development activities								

Regulated
Common practice
Not applicable

Notes: Information applies to different settings in each country. Denmark: kindergarten. Germany: early childhood education and care centre for children over 3 to 6/school entry, and response at the federal level. Iceland: preschool. Israel: kindergarten. Japan1: kindergarten; Japan2: day-care centre. Norway: kindergarten. Turkey: independent kindergarten.
Source: OECD (2019[15]), "OECD Network on Early Childhood Education and Care: Quality beyond Regulations survey", *internal document, OECD, Paris.*

When designing strategies for continuous professional development, countries need to keep a strategic vision for workforce needs at a national or regional level, with the explicit goal of retaining skilled staff in the sector (rather than in their actual centres). While in-service training may actually increase turnover across ECEC centres, helping staff to develop strong sector-specific skills will increase retention, especially if salaries and working conditions improve as well (OECD, 2019[16]).

At the same time, policies for promoting equity in ECEC may require targeted professional development or placement schemes to ensure that staff with the adequate training are assigned to ECEC centres where their specific skills are needed most. While many countries grant priority admission and fee waivers to vulnerable children, especially those living in poverty (European Commission/EACEA/Eurydice, 2019[48]), policies aiming to tackle socio-economic or cultural/linguistic disadvantage should also strive to allocate quality staff, not just more staff, to less privileged children, by addressing potential inequities in the sorting of staff across ECEC centres. Providing professional development that helps ECEC staff and leaders to respond to the growing diversity of children in ECEC settings is one of such policies. At the pre-primary level, Germany and Turkey are the countries where a smaller proportion of staff have received training for working with a diversity of children in both their initial preparation programmes and in-service training. In Germany, however, a larger share of staff have such a training trajectory in centres where the proportion of socio-economically disadvantaged children or dual language learners is large rather than small, whereas in Turkey the opposite holds (Table C.2.24). Countries can increase efforts to support more staff in developing skills for better addressing diversity, and in the short run, also explore introducing mandatory or incentivised staff rotation schemes to bring more staff with such skills to centres with more diverse populations of children.

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Notes

1 This bears in mind that the distinction between teachers and assistants is not relevant for all countries. Tables for the chapter first report results for all categories of staff ("All staff": including teachers, assistants, staff for individual children, staff for special tasks and interns). Tables then provide a breakdown of results for teachers and assistants (which together comprised about 92% of staff across countries) and differences between the two groups. However, definitions of teachers' assistants' roles vary across countries. The distinction between teachers and assistants is nonetheless common in most of the participating countries. See the Reader's Guide and the TALIS Starting Strong 2018 Technical Report (OECD, 2019[49]) for more information on staff reports of their own roles in the target group.

2 Comparisons between teachers and assistants are not possible in Iceland because participants were not familiar with the distinction between these roles, see the TALIS Starting Strong 2018 Technical Report (OECD, 2019[49]).

3 Other categories of staff, including staff for individual children, staff for special tasks and interns, are excluded from analyses that combine role and experience breakdowns.

4 Analyses described in the TALIS Starting Strong 2018 Technical Report support this clustering, see Chapter 11 in OECD (2019[49]) .The five items included in the area "Pedagogy" and the three included in the area "Diversity" were used to construct scales about needs for professional development. Further, exploratory factor analyses were carried out to investigate clusters among the 16 training contents items in the staff questionnaire. This was examined for pre-service and for in-service training contents separately, for the pooled sample and country-specific samples separately, and for the pre-primary sample and the sample of centres for children under age 3 separately. Results support the proposed clustering for the three thematic areas concerned and for maintaining other items as areas in their own right.

5 In the case of "Playful learning" and "Diversity", analyses assume that an area has been covered in training if staff report training on at least one of the items that the area aggregates. In the case of "Pedagogy", which groups the highest number of items, it is required that staff report at least two of the items that the area aggregates. This typically means that training included contents about "Learning theories" as well as one of the specific subject matter areas, therefore capturing staff pedagogical knowledge in a more meaningful way than by coverage of a single item.

6 The thematic breadth of training may be calculated for different groups of staff. In this section, breadth is estimated for staff meeting two conditions: 1) being trained to work with children as part of their pre-service education and training; and 2) having participated in training activities during the 12 months prior to the survey. The number of areas covered can differ for staff meeting only one of these two conditions.

3 Working conditions and well-being of early childhood education and care staff

This chapter presents an analytical framework to analyse early childhood education and care staff working conditions and well-being through TALIS Starting Strong. It describes the main components of their working conditions, the various dimensions of well-being included in the survey, and how they vary across and within countries. The chapter also analyses the main determinants of the sources of stress before investigating the relationships between staff's well-being and their practices with children and parents, as well as motivation to stay in the profession.

Key messages

- Overall, staff in all of the participating countries show a high level of satisfaction with the profession and their current job but their views on their working conditions point to both aspects that can discourage and encourage joining and staying in the early childhood education and care (ECEC) workforce. Staff in Japan and Korea report a lower level of satisfaction than staff in other countries.
- In all countries, a majority of ECEC staff indicate low satisfaction with the salary they receive for their work: from 61% of pre-primary staff in Turkey to 90% in Iceland "strongly disagree" or "disagree" that they are satisfied with their salary.
- In most countries, retirement is the most likely reason to leave the role for young and older staff, suggesting that most staff expect to spend their entire career in the ECEC profession. Large percentages of staff indicate leaving for health-related reasons as the most likely reason to leave the role in Germany, Iceland and Korea.
- Staff working hours vary notably across countries, with on average more hours worked in Japan and Korea. Longer working hours are partly driven by the number of hours spent without children. On average, staff spend from 19% in Iceland to 39% in Korea of their total weekly working hours without direct contact with children.
- From 24% of staff in Iceland to 71% in Korea report that they need more support from their ECEC centre leader.
- "A lack of resources", "having too many children in my classroom/playgroup/group", "having too much work related to documenting children's development" and "having too much administrative work to do" are important sources of stress for large percentages of staff in many countries.
- Feelings of stress emerge from imbalances between job demands, resources to address these demands and rewards for effort. Support from leaders and satisfaction with salaries act as buffers of stress in most of the countries, although not consistently for all considered sources of stress in Korea (pre-primary), Germany (centres for children under age 3) or Norway (both levels of education). Training related to the area of the source of stress, collaborative practices and control over decisions are not sufficiently developed or effective to act as important buffers of stress in the participating countries.
- Staff generally express high levels of self-efficacy in supporting children's development, learning and well-being, but a lower level of self-efficacy in working with a diversity of children and use of digital technology.
- Staff shortages create tensions for both staff and leaders in multiple areas, such as workload, possibilities to participate in training, and ability to provide a high-quality learning and development environment for children. This is particularly the case in Germany for both levels of education and in Israel for centres for children under age 3. In contrast, in Denmark (with low response rates) and Norway for both levels of education, and to some extent in Turkey for Pre-primary centres, shortages of staff are less of a problem.
- Differences between centres in terms of the composition of children or availability of resources are associated only to a limited extent with working conditions, which means that staff in more challenging centres are not systematically compensated with better working conditions.

Introduction

Staff's working conditions and well-being are key determinants of the capacity of the early childhood education and care (ECEC) sector to attract and retain good candidates in the profession and reduce turnover. With the demand for ECEC expanding in many countries, attracting and retaining skilled staff has become a challenge. Staff absences and shortages hinder the functioning of the sector in many countries. Results from the Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) presented in the first volume indicate these are important barriers to leaders' effectiveness and to staff's participation in professional development (OECD, 2019[1]). Staff's working conditions have an impact on their well-being, in particular on emotional well-being, as reflected in stress levels and exposure to burnout, which in turn might be a reason for some staff to leave the sector. Staff's well-being also has an effect on their practices with children and their performance at work. Overall, staff working conditions and well-being can be important drivers of process quality.

TALIS Starting Strong includes information on many aspects of the working conditions of ECEC staff: working time, time allocated to different tasks, contractual status, satisfaction with salary, and the working environment, such as collaboration with colleagues and support received from leaders. The survey also includes questions on well-being, such as job satisfaction, and levels and sources of stress. This chapter presents the various components of the working conditions and well-being of staff in the ECEC sector and discusses how they vary across and within countries by characteristics of staff and centres.

Within countries, staff may face different working conditions or have different perceptions of their working conditions. For instance, research shows that less experienced ECEC staff are more prone to leave their jobs due to the working conditions, such as low salary, responsibilities and weak relationships with colleagues at the workplace (Bullough, Hall-Kenyon and MacKay, 2012[2]; Wells, 2015[3]). This chapter distinguishes between novice and experienced staff and considers other characteristics of staff, such as their age and role, to analyse how staff working conditions vary with these characteristics.

A large body of literature has put forward the deep and ongoing relationships between employees' stress, physical health and sense of well-being. Work stress is a predictor of physical health and illnesses that are associated with lower well-being, reduced engagement and productivity at work, and lower participation in the workforce (Quick, Bennett and Blake Hargrove, 2014[4]). However, the literature also shows that positive workplace environments and engagement strategies can help workers to handle stress. This has been shown, in particular, in the context of schools for stress experienced by teachers (Bakker et al., 2007[5]). This chapter takes a specific look at the sources of stress reported by staff to analyse their main determinants, including both factors that generate stress and those that mitigate it. With this aim, this chapter builds on the "job demand and resource" models that have been widely used in the literature on occupational well-being to analyse the drivers of stress. This analysis serves to identify the main potential drivers of staff stress in each country and the policy options to improve staff working conditions and well-being.

This chapter aims to:

- characterise the main aspects of the working conditions and well-being of staff in the ECEC sector and analyse how they vary according to staff and centre characteristics
- analyse the main drivers of the various sources of stress included in TALIS Starting Strong through models that look at the balance between factors that enhance stress (job demands) and factors that mitigate it (job resources or rewards)
- discuss the implications of stress and other dimensions of staff well-being on the motivations of staff to leave the profession and the quality of their practices with children and parents
- discuss policy implications and policy levers to improve working conditions.

Opportunities for staff to develop their skills throughout their careers through high-quality in-service training and informal learning such as learning from peers are important aspects of staff working conditions. They are touched upon in this chapter, but discussed in more detail in Chapter 2. This chapter focuses on staff and leaves discussions on leaders' working conditions and well-being for Chapter 4.

Framework for analysis

TALIS Starting Strong includes questions on staff working conditions and well-being. Several of these questions or items are interrelated and one way to deal with the complexity of the survey on these aspects is to build on the literature on job demands-resources/rewards models (Bakker and Demerouti, 2007[6]; 2016[7]). These models consider that the characteristics of the working environment can be divided into two main categories: job demands and job resources or rewards. Staff may experience challenging demands on the job (e.g. working with large groups of children), but can build on resources or rewards (e.g. support from leaders, adequate salary). The combination of these two forces drives staff stress.

Two types of similar models are generally used to explain job stress. The first, the demand-control model, considers that job stress is the result of a disturbance of the equilibrium between the demands employees are exposed to and the resources they have at their disposal. Job stress is caused by the combination of high job demands and low job control (or little professional autonomy). Employees who can decide themselves how to meet their job demands are less exposed to job stress (Karasek, 1979[8]). Another model, the effort-reward imbalance model, emphasises the reward, rather than the control of work. Job stress is the result of an imbalance between effort (job demands and the motivation to meet these demands) and reward (in terms of salary, esteem reward, and security or career opportunities) (Siegrist, 1996[9]). A lack of reciprocity between effort and reward can lead to stress. Interestingly, these models can help understand why similar job demands translate into different levels of stress across workers depending on other job demands and differences in resources or rewards workers may have to perform the job.

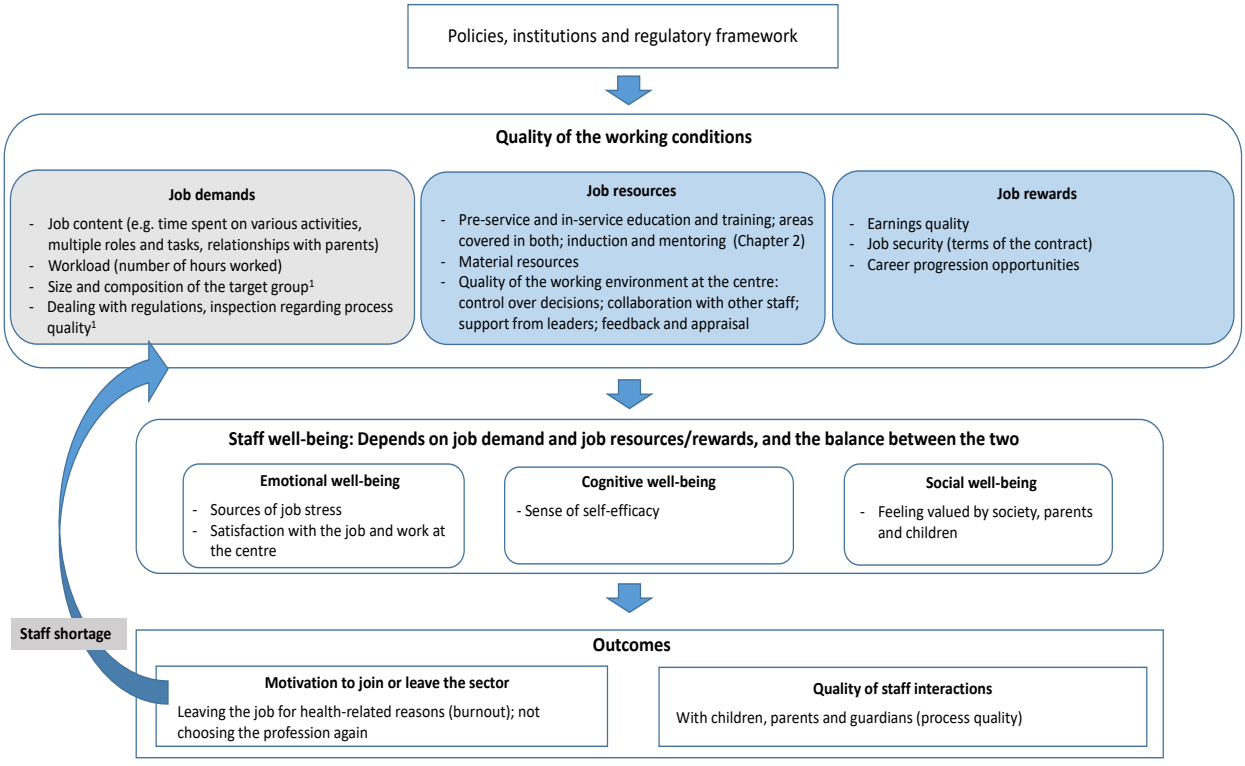
TALIS Starting Strong is well-suited to analyse staff well-being through a combination of the demand-control and the effort-reward models, as it includes information on job demands, resources and rewards as well as on various sources of stress, an important dimension of "emotional well-being". A question captures the possible impact of well-being on staff's health, although physical well-being is not included per se in the survey. However, the survey includes information on other aspects of well-being, such as staff sense of self-efficacy or their judgements of their capabilities to perform the work, which contributes to what can be called "cognitive well-being". Finally, the survey also includes information on "social well-being", such as staff's perception of how their work is valued by others.

This chapter proposes an analytical framework to analyse the major aspects of staff working conditions, well-being and their implications, following the job demands-resources/rewards models (Figure 3.1). It also builds on the teachers' well-being framework proposed for TALIS and the teacher questionnaire in the Programme for International Student Assessment (PISA) (Viac and Fraser, 2020[10]). The various components of the working conditions can be thought of as either generating demands on staff (in grey) or resources and rewards to meet these demands (in blue). Job demands are defined as those physical, psychological, social or organisational aspects of the job that require sustained physical and/or psychological effort and are therefore associated with certain costs for individual staff (Demerouti et al., 2001[11]). Examples are high work pressure and emotionally demanding tasks, for instance those related to managing children's behaviour. Job resources refer to those physical, psychological, social or organisational aspects of the job that enable workers to achieve goals and deal with or face job demands (Bakker and Demerouti, 2007[6]). Examples of job resources are opportunities for training (see Chapter 2), performance feedback and work autonomy. Examples of job rewards are salary, other conditions of the work contract and career progression

Job demands, resources and rewards, and their balance contribute to various dimensions of well-being, and emotional, cognitive and social well-being. Staff well-being influences the capacity of the sector to retain the workforce and therefore possible staff shortages, which in turn through a feedback loop, has an impact on staff working conditions by creating additional workload and barriers to find time for participating in training activities. ECEC staff with a high level of well-being are also more likely to develop high-quality interactions with children and parents or guardians and contribute to high process quality. Staff well-being is therefore an important determinant of the quality of ECEC.

The framework also draws on the literature on job quality, which has developed in parallel to the literature on well-being. Job quality generally refers to the aspects of employment that contribute to well-being. In particular, the OECD Job Quality Framework (Cazes, Hijzen and Saint-Martin, 2015[12]) identifies three objective, measurable dimensions of job quality: 1) earnings quality; 2) labour market security; and 3) the quality of the working environment. Other studies have also highlighted future prospects and career progression as well as job content as important, additional aspects of job quality (Clark, 2015[13]).

Figure 3.1. Analytical framework for staff working conditions, well-being and their implications in TALIS Starting Strong



1. Covered in the first volume of TALIS Starting Strong 2018 (OECD, 2019[1]).

Staff's working conditions

The following sections discuss major aspects of working conditions: earnings, job security and career prospects, workload, and the quality of the working environment at the ECEC centre. These aspects are shaped by the institutions and governance of the sector as well as by a number of factors at the centre level, including characteristics of the centre (e.g. its size and financial and material resources) and leadership. As multiple factors influence working conditions, they vary both across and within countries.

To analyse how working conditions vary within countries, the following characteristics are considered throughout the chapter:

- Staff characteristics: 1) role (assistants or teachers); 2) experience (novice staff with up to three years of experience and experienced staff with more than three years' experience); 3) educational attainment as captured by the ISCED level of the staff's initial education and training; and 4) being in a full-time or part-time job.
- Centre characteristics: 1) size (small centres with 50 children or less versus large centres with 100 children or more); 2) type of management (public or private status of the organisation responsible for the day-to-day management of the centre, regardless of the ownership or funding sources).

Earnings quality and job security

For any occupation, salaries are an important reward of workers' efforts to do their job in the best possible way. The ECEC sector is generally known to propose relatively low salaries compared to other levels of education or jobs requiring a similar level of education and training (OECD, 2019[14]).

In all countries, a majority of staff indicate low satisfaction with the salary they receive for their work: from 61% of pre-primary staff in Turkey to 90% in Iceland answer they "strongly disagree" or "disagree" with being satisfied with their salary (Figure 3.2). Related to this finding, when staff are asked to indicate the priority for the ECEC sector if the budget were to be increased, a large majority of staff in all countries except to some extent in Norway indicate improving salaries as being of "high importance". Among the other priorities considered in the survey, the largest percentages of staff indicating improving salaries as a priority are observed in Iceland, Japan and Korea at pre-primary level and in Israel for centres for children under age 3.

In several countries (Chile, Iceland, Israel, Korea and Norway in pre-primary settings), novice staff show a higher level of satisfaction with their salary than more experienced staff, which may indicate that the entry salary is in line with expectations but is not seen to increase enough with experience or career progression, as for secondary education teachers (OECD, 2020[15]) (Table C.3.1). Satisfaction with salary varies with educational attainment, with more educated staff being less satisfied with their salary in Denmark (with low response rates) for both levels of education, in Israel for centres for children under age 3 and in Turkey at the pre-primary level. However, in Israel for pre-primary staff, more educated staff are more satisfied with salary, which is aligned with the fact that teachers indicate a higher level of satisfaction with their salary than assistants. In contrast, in Denmark (with low response rates) for both levels of education, assistants report a higher level of satisfaction. In some countries, staff show different levels of satisfaction with salary depending on the centre's type of management. In Israel and Japan at pre-primary level and in Norway for centres for children under age 3, staff in privately managed centres are more satisfied with their salary, while in Korea, it is the case for staff in publicly managed centres (Table C.3.1).

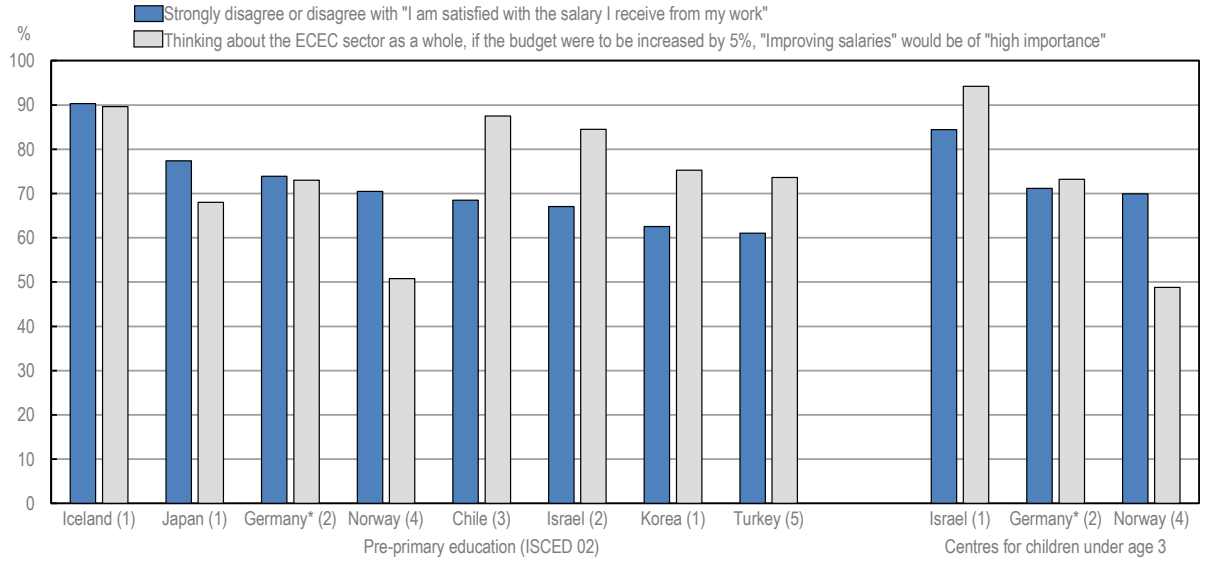
Job security is an important reward for staff's work. According to TALIS Starting Strong, except in Korea, a majority of staff have permanent contracts, which may offer them a feeling of job security (OECD, 2019[1]). However, in all countries except Japan, novice staff are less likely to have a permanent contract than experienced staff (Table C.3.2). In several countries, assistants are more likely than teachers to be on a temporary contract and in many participating countries, part-time staff are also more likely to be on a temporary contract, which suggests that sources of instability and precariousness accumulate on the same staff members.

Job insecurity for some categories of staff and the prevalence of the private sector in some countries (see OECD (2019[1])) mean that groups of ECEC staff could potentially be exposed to risks of unemployment, as ECEC centres were closed as a consequence of the first wave of the COVID-19 pandemic in the first half of 2020. While governments have generally stepped in to avoid wage losses for ECEC staff, the crisis

has also highlighted the fragility of the sector and the exposure of staff to risks of unemployment in such a context (see Chapter 1).

Figure 3.2. Early childhood education and care staff satisfaction with salary

Percentage of staff answering the following to the following items



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Number in parenthesis next to country names indicates the rank of "Improving salaries" among the eight spending priorities included in the survey.
Countries are ranked in descending order of the percentage of staff who "strongly disagree" or "disagree" with "I am satisfied with the salary I receive from my work".
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.1.

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Career progression opportunities

Opportunities for career progression are another important aspect of working conditions, which can affect well-being at work and job satisfaction. Jobs in the ECEC sector offer limited possibilities in this area. Like in the school sector, traditional careers are often "flat", with few opportunities for advancement or diversification (OECD, 2019[17]). In countries where two distinct roles – assistants and teachers – exist, career progression can consist in changing role, but the qualifications requirements can be an obstacle. For teachers, the only possibilities to grow in their careers may be to take up leadership responsibilities in the ECEC sector or become a primary education teacher, as this occupation is often associated with higher wages. However, staff members who do not change role during their careers may have the same set of responsibilities from the first to the last day of their career.

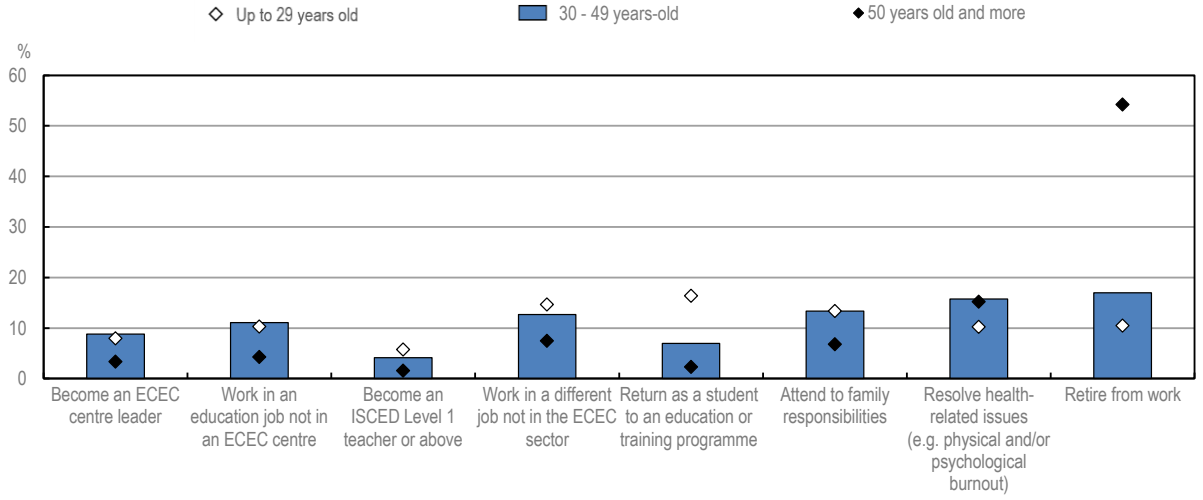
TALIS Starting Strong asks staff about their most likely reason to leave the ECEC staff role, which gives information on the type of vertical or horizontal occupational mobility that staff might consider. Retirement is the most likely reason to leave the role reported by the highest percentages of staff in all countries except Germany (for pre-primary level only), Iceland, Japan and Korea (Table C.3.3). The largest percentages of staff report leaving due to health-related issues in Germany (pre-primary) and Korea, family reasons in Japan, and working in a different job not in the ECEC sector in Iceland. Hence, except in Iceland, most

staff expect to spend their entire career as an ECEC teacher or assistant. On the one hand, this reflects the high level of engagement of staff; on the other, it highlights the limited possibilities for career progression that they envisage.

As expected, the percentage of staff who indicate retirement as the most likely reason to leave the role increases with age (Figure 3.3). This suggests that younger staff in particular look for career progression – either in or outside the ECEC sector. The most likely reason to leave the role on average for pre-primary staff up to 29 years old is to return as a student to an education programme, reflecting that young staff seek further qualifications for career progression. On average for pre-primary education, 13% of the middle-aged staff indicate taking a different job not in the ECEC sector as the most likely reason to leave the role, which is higher than the percentage indicating becoming an ECEC centre leader, working in an education job not in an ECEC centre or becoming a primary education teacher.

Figure 3.3. Most likely reason to leave the early childhood education and care staff role, by age

Percentage of pre-primary education staff reporting the following reasons as the most likely reason to leave the ECEC staff role, by age group, average of participating countries



Notes: The response "other" is excluded from this figure.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.4.

StatLink https://doi.org/10.1787/888934206759

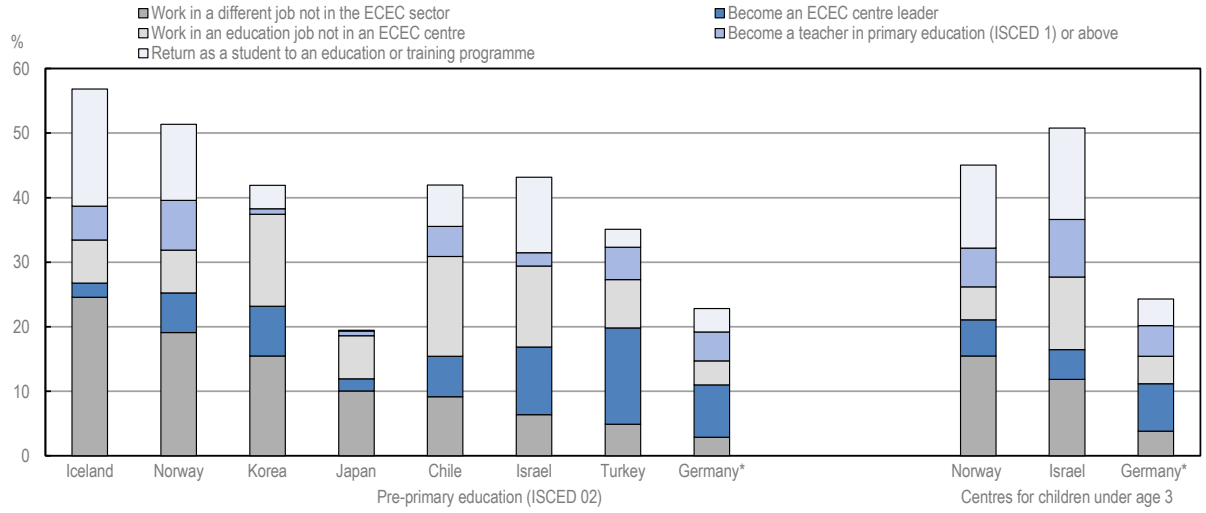
Results from TALIS Starting Strong suggest that in some countries, staff who envisage a career progression look outside the ECEC sector and to a lesser extent in the education sector. When inactivity (retiring or family responsibilities) and health-related issues are excluded, the largest percentage of staff indicates "working in a different job not in the ECEC sector" as the most likely reason to leave the role in several countries (Denmark [with low response rates], Iceland, Japan, Korea, and Norway for both levels of education) (Figure 3.4). In contrast, in Chile and Turkey for pre-primary staff and Germany and Israel for both levels of education, a relatively large percentage of staff envisage a career inside the education sector. Becoming an ECEC centre leader is the most likely reason to leave the current role for less than 2% of staff in Japan, but for up to 15% in Turkey. In Chile, Denmark (for both levels of education, with low response rates), Israel (for both levels of education) and Korea, more than 10% of staff indicate working

in an education job not in an ECEC centre as the most likely reason to leave. In most countries, close to or less than 5% of staff indicate becoming a primary education teacher as the most likely reason to leave the job, but the percentage is higher in Norway for both levels of education and in Israel for centres for children under age 3.

Opportunities for career progression depend on staff characteristics. In most countries, of staff who indicate becoming an ECEC centre leader as the most likely reason to leave the job, a higher share have a higher level of experience, a higher share are teachers than assistants, and more staff have a higher level of education (Table C.3.5). In several countries, teachers are more likely than assistants to indicate "working in an education job not in an ECEC centre" as the most likely reason to leave (Table C.3.6).

Figure 3.4. Most likely reason to leave the early childhood education and care role for other jobs or for education

Percentage of staff reporting that the reason below is the most likely reason to leave the ECEC staff role



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: The reasons to leave the job but remain in the education sector are indicated in blue. The following reasons to leave the job are excluded from this figure: "Attend to family responsibilities", "Retire from work", "Resolve health-related issues" and "Other".
Countries are ranked in descending order of the percentage of staff reporting "work in an education job not in an ECEC centre" as the most likely reason to leave the ECEC staff role.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.3.

StatLink https://doi.org/10.1787/888934206778

Workload and job content

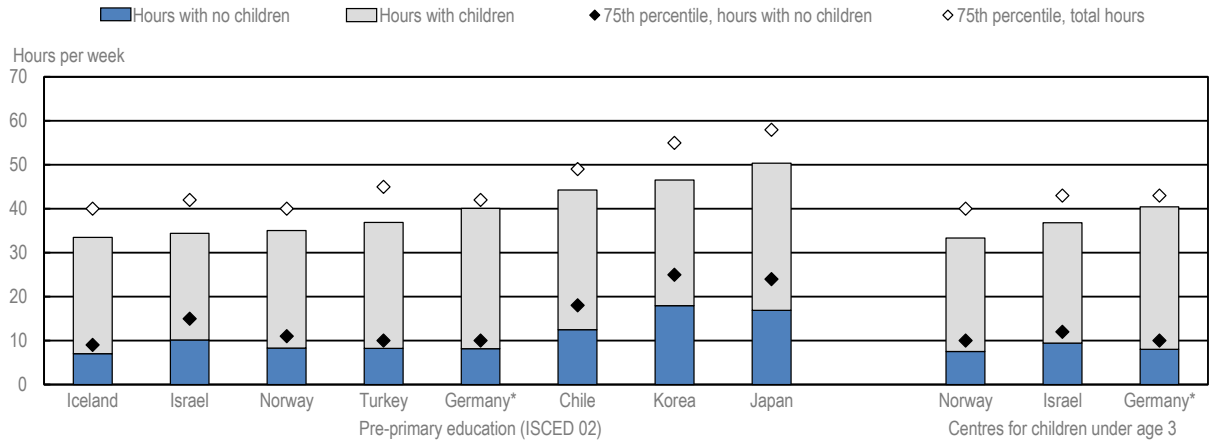
Workload can be an important source of stress in any job. In the ECEC sector, staff report stress related to the time demands of childcare, as well to the many non-teaching tasks, such as administrative work (OECD, 2019[1]; Kelly and Berthelsen, 1995[18]; Moriarty et al., 2001[19]). Some studies suggest that a heavy workload can lead to a lower quality of interactions between ECEC staff and children (de Schipper, Riksen-Walraven and Geurts, 2007[20]).

TALIS Starting Strong does not include a question on overall workload, but several questions provide information on this topic. The survey asks staff about the number of hours spent in total on tasks related to the job at the ECEC centre, including time spent on all tasks, even if they are performed during evenings

and weekends. The number of hours worked at the centre by staff working full time can be an indication of workload. There is variation across countries, with staff working more hours on average in Korea and Japan, which may partly come from differences across countries in working hour regulations (Figure 3.5). The number of hours also varies quite a lot within countries, which indicates that working hour regulations are not the only factor influencing hours worked and that time spent on work outside the centre also contributes. This is particularly the case in Chile, Israel, Japan, Korea and Turkey, where a quarter of staff work substantially longer hours than the average, which may indicate that some staff are exposed to a high workload in these countries. In Japan and to some extent Korea, novice staff work more hours while in Iceland, novice staff work less hours (Table C.3.7).

Figure 3.5. Hours worked by early childhood education and care staff working full time

Average number of weekly hours spent on tasks related to the job at the ECEC centre



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Markers indicate the minimum number of hours for the 25% of staff who work the longest weekly hours. In Israel for pre-primary education, Turkey and for centres under age 3 in Germany, the distribution of the hours without children does not allow the estimation of the 75th percentile. In Iceland and in Norway (pre-primary education and centres for children under age 3), the distribution of the total hours does not allow the estimation of the 75th percentile.
Countries are ranked in ascending order of the total number of hours worked.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Tables C.3.7 and C.3.8.

StatLink https://doi.org/10.1787/888934206797

The allocation of hours on different tasks and in particular on tasks with and without children is an important aspect of the workload of ECEC staff. Multitasking environments can increase workload, especially cognitive workload, as the proportion of a person's cognitive resources used increases with multiple job demands. ECEC staff can have different tasks to perform, perhaps more than in schools where roles are generally well differentiated across categories of staff. Having time both with and without children is important for staff well-being. As working with children is the core of an ECEC job, spending time with children rather than on other types of tasks may bring well-being to staff. However, staff also need to have time without children to prepare their work with children and do some other types of work, such as exchanging with parents and colleagues or documenting children's development and learning.

TALIS Starting Strong gives information about the number of hours staff spend in contact with children and the number of hours without children can be deduced as the difference between the total number of hours and the number of hours spent with children, which can include hours worked outside the ECEC centre.

On average, staff spend from 7 hours in Iceland to 18 hours in Korea per week without children, which represents 19-39% of the total working hours (see Figure 3.5). Staff spend the longest hours with children in Chile, Germany (for both levels of education) and Japan. There are large variations within countries that are partly linked to staff role: in countries where the distinction between teachers and assistants can be made, teachers spend more time without children than assistants (Table C.3.7).

In countries where staff work many hours (Chile, Japan and Korea), this is partly driven by the number of hours spent without children. The survey includes a question to staff on the amount of time they spend on a range of activities performed with no contact with children. Among these activities, the four of them for which the largest percentages of staff report spending at least 30% of their time without children on average across countries at pre-primary level are: 1) documenting children's development, well-being and learning; 2) participating in centre management, staff meetings and general administrative work; 3) laundry, tidying-up, cleaning, shopping or cooking tasks; and 4) individual planning or preparing play and/or learning activities. The first two are mentioned by large shares of staff as being important sources of stress (see OECD (2019[1]) and section below). In Chile and Korea, these activities seem to contribute to significant time spent with no children, which is high in these two countries, as more than 20% of staff spend at least 30% of the time with no children on some of these activities (Figure 3.6). Tasks differ by role, with teachers being less involved than assistants in laundry and cleaning or cooking tasks (Table C.3.9). In most countries, a larger percentage of teachers than of assistants spend large percentages of their time without children on documenting children's development and individual planning, but assistants also devote time to these tasks. In Chile and in Germany (for both levels of education), the allocation of time spent without children across tasks does not seem to differ much between teachers and assistants, while in Israel and Korea at pre-primary level and Norway for both levels of education, roles are more differentiated.

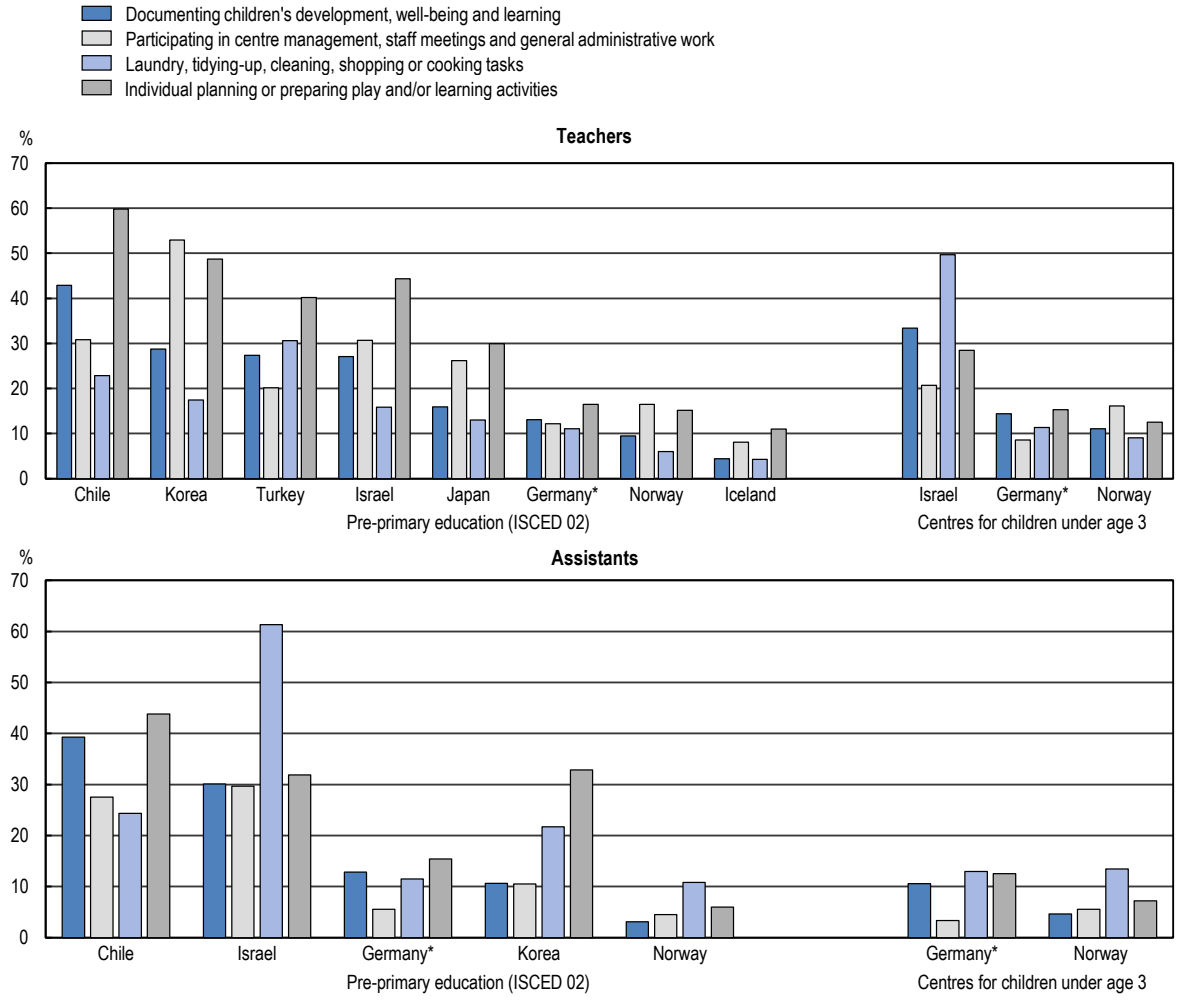
The quality of the working environment at the early childhood education and care centre

The day-to-day working environment that staff experience at the ECEC centre matters for their well-being. In particular, interactions between staff and colleagues and staff and leaders, performance feedback, and the autonomy staff have to organise their work can help them cope with the demands they face. This, in turn, can have implications on their willingness to remain in the profession. There is evidence that these aspects are important resources that can buffer the impact of high job demands on stress and burnout (Bakker and Demerouti, 2007[6]; Demerouti et al., 2001[11]). A study on the Head Start programme in the United States found that newly hired teachers were more likely to quit if they did not have a good relationship with their supervisor or did not like their work environment (Wells, 2015[3]).

The early literature assumed a top-down perspective in which management and the human resources department determine the working environment for their employees by setting targets, describing tasks and providing resources. More recent approaches argue also that employees might proactively change their work tasks in order to make their work more meaningful. Employees can directly affect their working environment. TALIS Starting Strong provides information on the working environment as it is perceived by staff. Staff working with the same centre leader may, for instance, report different levels of autonomy or different feelings about support from their leader.

Figure 3.6. Time spent on a selection of activities with no children by early childhood education and care teachers and assistants

Percentage of staff who spend 30% or more of their time without children on each of the following activities



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Teachers and assistants are distinguished based on the initial identification of staff members who were eligible to participate in TALIS Starting Strong 2018. The results of assistants cannot be reported in Israel in centres for children under 3, Japan and Turkey. See the Reader's Guide for more information. In Iceland, the total value of all staff is reported, as a distinction between roles cannot be made due to technical reasons. As some tasks may overlap, the total per country can exceed 100%.
Countries are ranked in descending order of the percentage of staff who spend 30% or more of their time without children on documenting children's development, well-being and learning.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.9.

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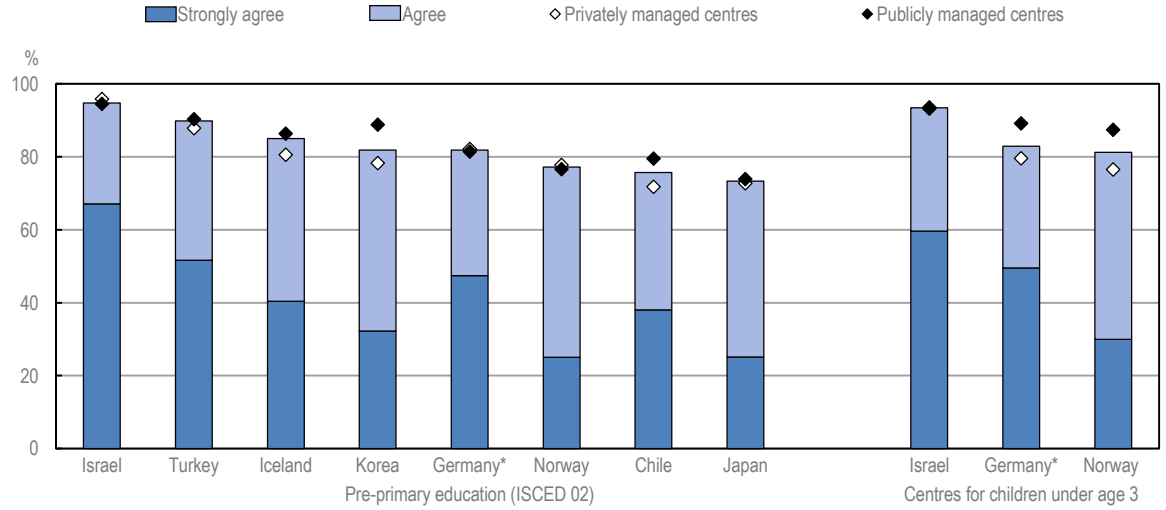
Control over decisions

Having some autonomy at work and control over decisions is important to face demanding situations and a heavy workload. ECEC jobs can entail substantial autonomy, especially for teachers, who have a leading role in the choice of activities, practices and pedagogical approaches with children and groups of children as long as they are aligned with national curriculum frameworks or guidelines. However, staff can also lack room for manoeuvre on many other aspects that are regulated at the centre or country levels. Work in ECEC centres also generally entails important routines that determine the sequencing of staff activities throughout the workday, which can either provide guidance to staff or limit their capacity to optimally manage their work demands.

TALIS Starting Strong asks staff about whether "the ECEC centre leader encourages all staff to have a say on important decisions", which is part of distributed leadership (see Chapter 4). From 73% in Japan to 95% in Israel (for pre-primary) "agree" or "strongly agree" that leaders encourage all staff to have a say in important decisions, with little variation by staff characteristics (Figure 3.7). However, only in Israel (for both levels of education) and Turkey do a majority of staff "strongly agree" that leaders encourage all staff to have a say in important decisions. Except in Chile, where a larger percentage of assistants than teachers report a high level of agreement, there is no significant difference across roles (Table C.3.10). The level of control over decisions varies according to the type of management in the centre: it is higher in publicly managed centres in Chile and Korea at pre-primary level and in Germany and Norway in centres for children under age 3.

Figure 3.7. Early childhood education and care leaders encourage staff to have a say in decisions, according to staff

Percentage of staff who "agree" or "strongly agree" that the ECEC centre leader encourages all staff to have a say in important decisions



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Note: *Countries are ranked in descending order of the percentage of staff who "strongly agree" or "agree".*
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.10.

StatLink https://doi.org/10.1787/888934206835

Collaboration with other staff

Collaborative practices are important to share knowledge among staff, ensure continuity and consistency in approaches within the centre, and support staff in their work. Compared to some other professions outside the education sector, working in an ECEC centre can be seen as offering fewer opportunities to work in teams, but results from TALIS Starting Strong 2018 suggest a different picture. The first volume showed that in all countries, several staff members work with the same group of children on the same day: from five staff members on average in Germany in centres for children under age 3 to ten staff members in Korea (OECD, 2019[1]). Working with the same group of children requires co-operation across staff members. In several countries, teachers also generally work with assistants, which also requires good collaborative practices.

Several studies have identified collaboration as a learning activity, which can lead to learning outcomes that can be more connected to everyday situations in the workplace compared to what is learnt for a more general context (Kyndt et al., 2016[21]). In particular, several studies have found that collaboration and interactions with colleagues can help develop pedagogical skills. This, in turn, can help staff develop their sense of self-efficacy and reduce stress.

TALIS Starting Strong asks staff about their participation in a number of activities involving collaboration with colleagues, such as "providing feedback to other staff about their practices", "engaging in discussions on approaches to children's development" or "planned activities", or "working with others to discuss the evaluation of children" (see Chapter 2). There are large variations across countries and activities in the frequency with which staff engage in collaborative practices (Table C.3.11). On average in participating countries for pre-primary education, exchanging learning or pedagogical materials with colleagues and providing feedback to other ECEC staff about their practices are less frequent than the other activities.

Engagement in collaborative practices also varies within countries. When the various collaborative practices are combined, in several countries they are more frequent for staff working full time, for staff with a permanent contract and for staff with a higher level of initial education. For countries where the distinction between teachers and assistants can be made, teachers report collaborating more frequently than assistants in Israel and Korea for pre-primary education, and Norway for both levels of education. Novice teachers report less frequent involvement in collaborative practices only in Iceland at the pre-primary level and in Denmark (with low response rates) and Norway for centres for children under age 3 (Table C.3.12).

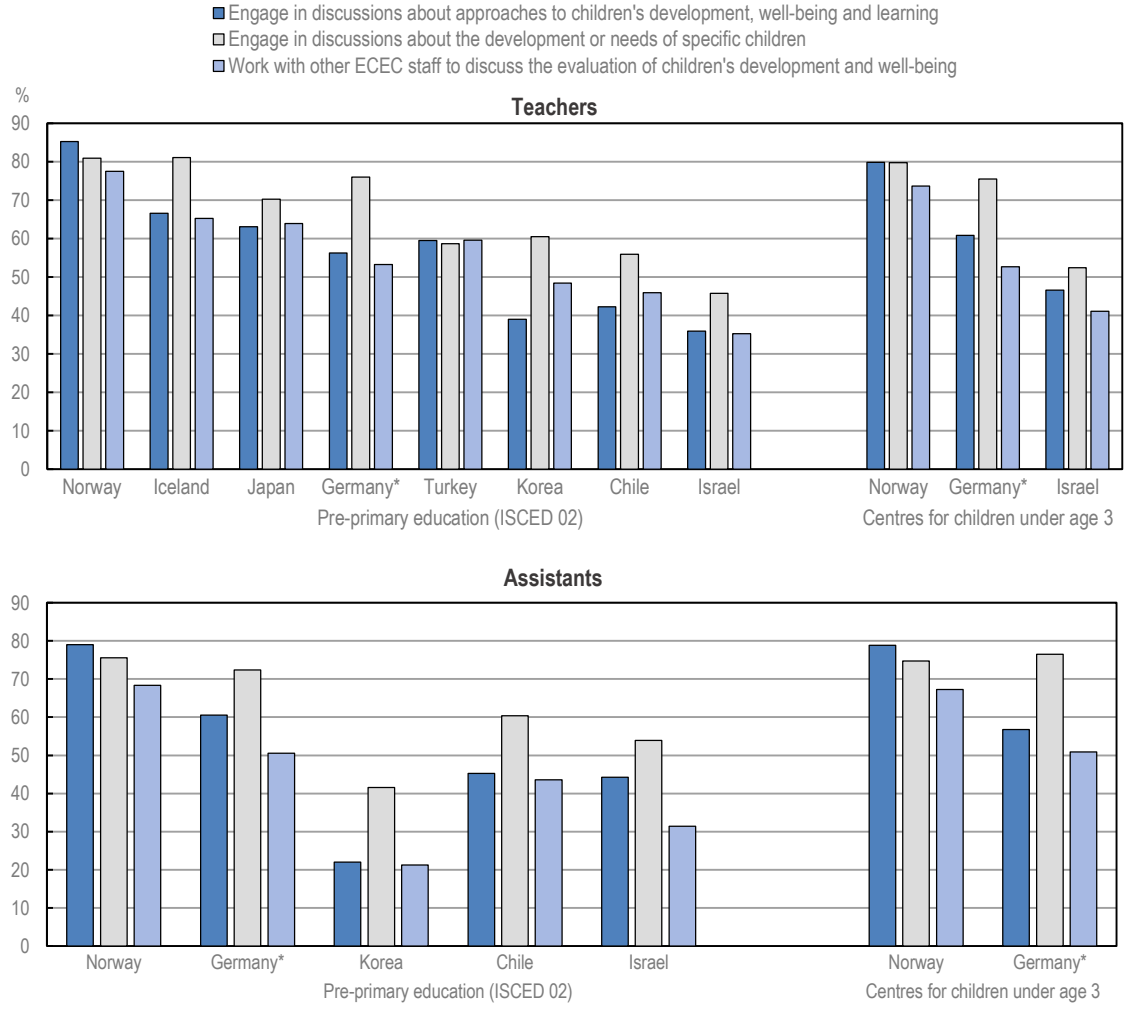
Among the various collaborative practices considered in the survey, three concern practices that relate to specific sources of stress considered in the survey and can act as a resource to mitigate the related source of stress (see the section on "The relationship between sources of stress and working conditions"):

- engaging in discussions about approaches to children's development, well-being and learning for stress coming from being responsible for children's development
- engaging in discussions about the development or needs of specific children for stress coming from accommodating children with special needs
- working with other staff to discuss the evaluation of children's development and well-being for stress coming from having too much work related to documenting children's development.

There are large variations across countries in the frequency of engagement in these collaborative practices, with staff in Iceland, Japan and Norway making frequent use of them (Figure 3.8). In contrast, in Chile, Korea and Turkey, staff report less frequent use of these practices. These practices are also linked to the role of staff, with assistants being less likely than teachers to engage in some of these collaborative practices in most countries (Table C.3.13).

Figure 3.8. Early childhood education and care staff collaborative practices

Percentage of staff reporting they engage in the following “weekly” or “daily”



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Teachers and assistants are distinguished based on the initial identification of staff members who were eligible to participate in TALIS Starting Strong 2018. The results of assistants cannot be reported in Israel in centres for children under age 3, Japan and Turkey. See the Reader’s Guide for more information. In Iceland, the total value of all staff is reported, as a distinction between roles cannot be made due to technical reasons.
Countries are ranked in descending order of the average percentage of teachers engaging “weekly” or “daily” across the three practices.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.13.

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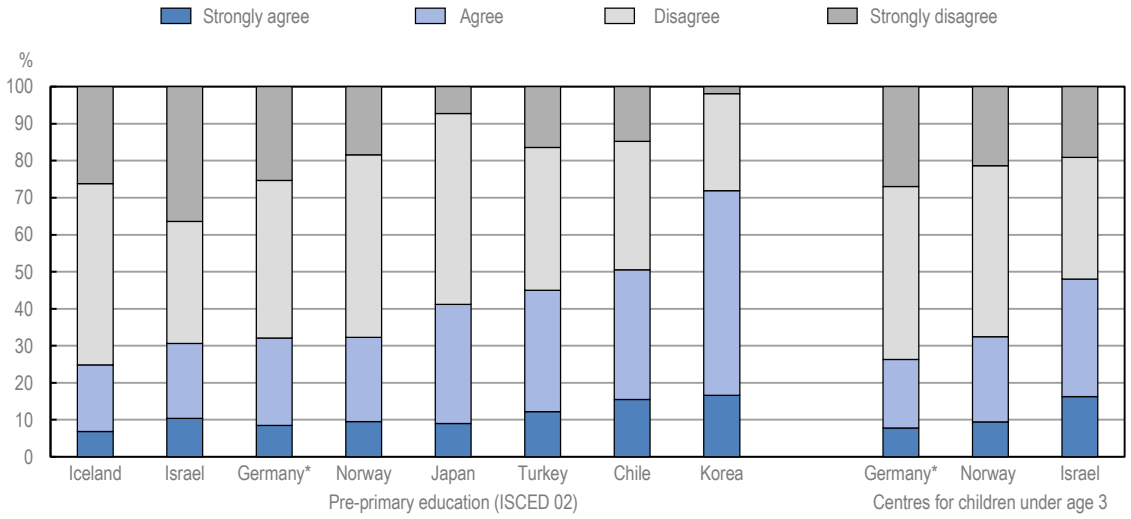
Support from leaders

Leaders play an important role in the day-to-day working environment in the ECEC sector. TALIS Starting Strong asks staff about their overall level of satisfaction with the support they receive from their leaders. There are large variations across countries in the overall feeling of support from leaders (Figure 3.9). From 25% in Iceland to 72% in Korea of staff report that they need more support from their leader.

In all of the participating countries, there are no statistically significant differences between novice and more experienced staff in the need to receive more support from leaders. In Chile and Germany at pre-primary level, assistants are more likely than teachers to report needing more support (Table C.3.14).

Figure 3.9. Early childhood education and care staff need for support from leaders

Percentage of staff reporting the following to "I need more support from my ECEC centre leader"



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Note: *Countries are ranked in ascending order of the percentage of staff who "strongly agree" or "agree".*
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm.

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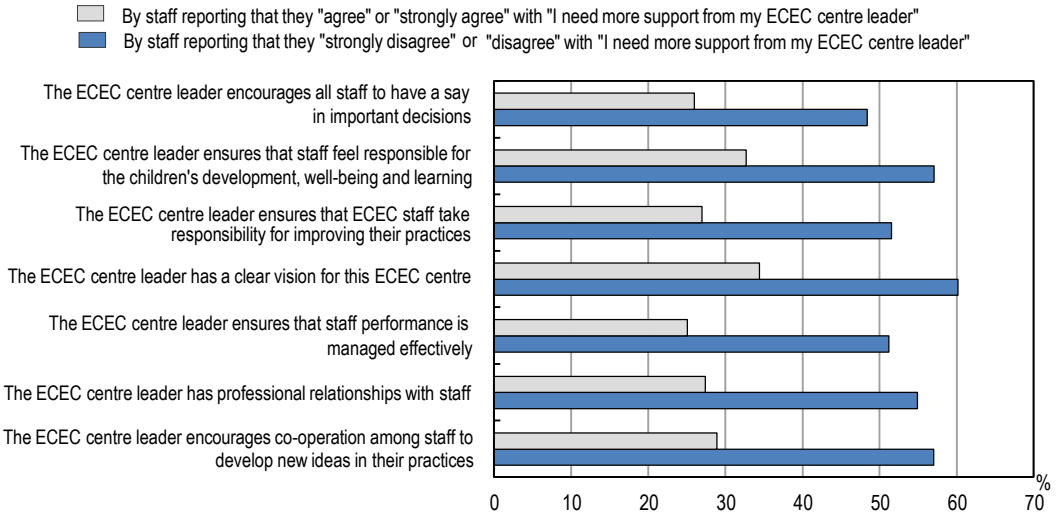
While staff in some countries report a need for more support from their leaders, when asked about their view on specific roles of leaders, the feeling is more positive. In all countries and for both levels of education, a large majority of staff "agree" or "strongly agree" that ECEC leaders, for instance, encourage co-operation among staff to develop new ideas in their practices, ensure that staff take responsibility for improving their practices and ensure that staff performance is managed effectively (see Chapter 4). When comparing perceptions of ECEC centres' leaders on aspects of their work, staff who would like more support from their leaders have a less favourable perception of all aspects of their leader's work than staff who do not report needing more support, including, for instance, of the need for leaders to provide a clear vision, to encourage co-operation or to ensure that ECEC staff's performance is managed effectively (Figure 3.10).

Figure 3.10. Early childhood education and care staff's perceptions of leaders by staff's need for more support from their leaders

Average percentage of pre-primary staff reporting that they "strongly agree" with the following statements, by need for more support from centre leader



Note: *Statements are ranked in ascending order of the gap between the two bars.*
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.15.

StatLink https://doi.org/10.1787/888934206892

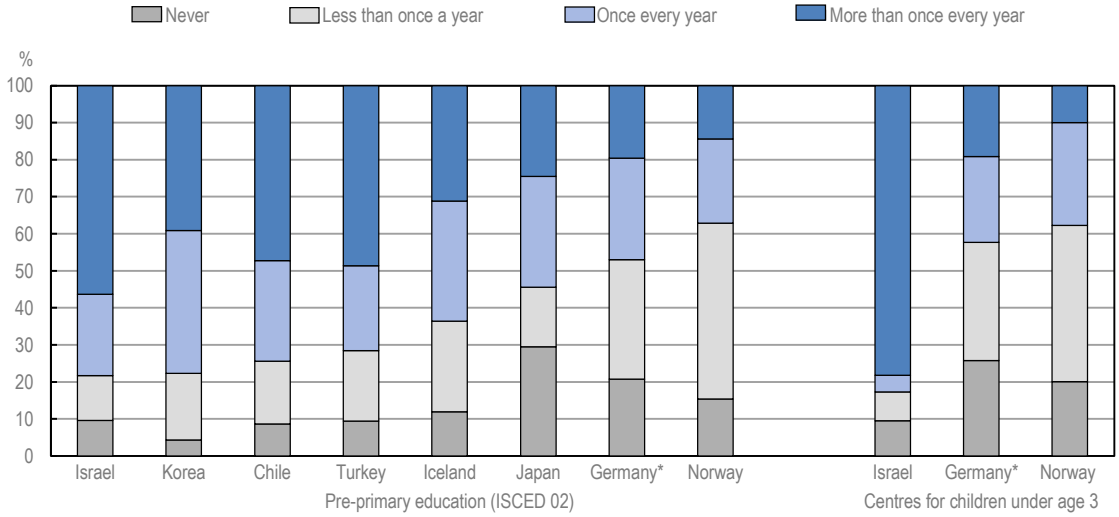
Feedback and appraisal

Receiving feedback from others can also be an important source of learning for staff and a way to address some challenging situations on the job. As mentioned above, providing feedback to other ECEC staff about their practice is not very common, with around a third of staff across countries engaging in it less often than monthly or not at all (see Chapter 2). This result comes from differences in roles: in all countries where the distinction between teachers and assistants can be made except in Germany at pre-primary level, teachers are more likely than assistants to provide feedback (Table C.2.8).

TALIS Starting Strong also gives indication on the frequency of external inspections of process quality, which target staff and their interactions with children. These inspections can help staff improve their practices and increase their self-efficacy if they lead to discussions with staff and recommendations on how to adjust practices, but they can also be a source of stress if they lead to sanctions. The frequency of this type of inspection varies greatly across countries, from around 80% of leaders in Israel at both levels of education and in Korea reporting receiving external inspection on process quality at least once a year to less than 50% in Germany and Norway for both levels of education (Figure 3.11). Even if the centre is inspected, all staff are not necessarily inspected, which means that in some countries, staff receive external feedback on their practices quite rarely.

Figure 3.11. Frequency of external inspection regarding process quality

Percentage of leaders reporting they receive external inspection regarding process quality (e.g. quality of interaction with children, content of activities)



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Note: *Countries are ranked in ascending order of the percentage of staff who report "never" or "less than once a year".*
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm.

StatLink https://doi.org/10.1787/888934206911

Overall, this section has shown that ECEC staff working conditions are uneven, both across and within countries. Staff working conditions can be improved through policies that would involve some cost, such as improving salaries or career progression, but also by policies that are not necessarily associated with direct costs, such as improving the working environment through increased collaboration across staff, more autonomy at work and better feedback on work.

Staff well-being

Well-being at work captures the state of being happy and satisfied at work, feeling comfortable with the tasks to perform, and realising one's potential for the benefit of staff and of the organisation or firm (Fisher, 2014[22]). There is no common definition across fields of research, but the idea that well-being is a multidimensional concept generally prevails. Following the teachers' well-being framework proposed for TALIS and the teacher questionnaire in PISA (Viac and Fraser, 2020[10]), TALIS Starting Strong can be thought to capture well-being through three main areas:

- emotional well-being, which captures, on the positive side, staff satisfaction and enjoyment with the job, and on the negative side, staff stress, anxiety and other mental health problems
- cognitive well-being, or the degree to which staff feel comfortable and confident in performing the various tasks involved in their role
- social well-being, which comes from the quality and depth of working relationships with stakeholders and relates to feelings of being recognised for the job and valued by others.

These dimensions are closely related. This holistic approach to well-being follows a similar framework used by the OECD (Borgonovi and Pál, 2016[23]) and the literature on occupational well-being.

Emotional well-being

Sources of stress

Good mental health is an important aspect of well-being as it can help to prevent exhaustion and health problems due to stress at work (e.g. headaches), but also disengagement with work and willingness to leave the job, or lower performance at work. TALIS Starting Strong does not ask staff about their overall level of stress or symptoms of health problems due to stress. However, the survey asks staff about whether and to what extent various aspects of their work are a source of stress. This information can help countries identify the major sources of stress for staff and their drivers. This, in turn, can help put policies in place that stimulate favourable work environments in which ECEC staff can interact with young children and families in a more positive manner, while reducing turnover rates and improving process quality.

The various sources of stress included in the survey can be categorised into three major areas: 1) stress related to workload outside hours spent with children; 2) stress related to workload coming from insufficient human or financial resources; and 3) stress due to work with children and related responsibilities. For all countries at the pre-primary level (Table 3.1) and for staff working with children under age 3 (Table 3.2), stress related to workload due to insufficient human or financial resources is a major source for stress. Workload stress coming from work outside hours spent with children is an important source of stress in Korea and also, albeit to a lesser extent, in all other countries except Iceland and Norway at pre-primary level and in Israel and Norway for settings for children under age 3.

Working with children and job-related responsibilities is reported as a high source of stress by smaller percentages of staff in all countries except Israel for both levels of education, particularly for managing the classroom/playgroup/group, and for Korea concerning keeping up with changing requirements from authorities and addressing parent or guardian concerns. This contrasts with the findings from TALIS for lower secondary teachers, who broadly indicate that “being held responsible for students’ achievement” is a top source of stress (OECD, 2020[15]).

Within these broad categories, “A lack of resources”, “Having too many children in my classroom/playgroup/group”, “Having too much work related to documenting children’s development” and “Having too much administrative work to do” are important sources of stress for large percentages of staff in many countries and are studied in further detail in this chapter.

Table 3.1. Sources of stress for pre-primary early childhood education and care staff

Percentage of staff who report that the following is "a lot" a source of stress

	Pre-primary education (ISCED 02)								
	Chile	Germany*	Iceland	Israel	Japan	Korea	Norway	Turkey	Denmark**
Workload stress coming from work outside hours spent with children									
Too much preparation work for children's activities	13	2	19	11	10	12	6	10	7
Too much work related to documenting children's development	16	23	5	16	13	27	5	16	20
Too much administrative work to do	19	16	4	16	21	38	10	15	20
Average	**16**	**14**	**9**	**14**	**15**	**25**	**7**	**14**	**15**
Workload stress coming from insufficient human or financial resources									
Extra duties due to absent staff	13	33	15	10	7	10	22	6	22
Too many additional duties (e.g. cleaning)	8	20	15	16	11	27	15	12	8
A lack of resources (e.g. financial , material, staff)	18	29	26	22	27	33	26	21	36
Too many children in my classroom/playgroup	18	29	39	34	9	29	31	16	24
Average	**14**	**28**	**24**	**21**	**14**	**25**	**24**	**14**	**23**
Stress due to work with children and job-related responsibilities									
Being held responsible for children's development, well-being and learning	15	8	5	17	15	11	4	13	6
Managing classroom/playgroup/group behaviour	16	7	13	24	11	15	9	11	10
Keeping up with changing requirements from authorities	10	11	10	19	8	24	9	10	10
Addressing parent or guardian concerns	11	6	6	12	14	28	4	17	4
Accommodating children with special needs	12	10	10	13	15	12	10	11	16
Average	**13**	**8**	**9**	**17**	**13**	**18**	**7**	**13**	**9**

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.
Notes: Within each country, areas of stress reported by the largest percentages of staff as an important source of stress are indicated in white and those reported by the smallest percentages of staff as an important source of stress are indicated in dark blue, with intermediary colours used for areas of stress indicated by intermediate percentages of staff as important.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.16.

StatLink https://doi.org/10.1787/888934207120

These patterns are even clearer for staff working with children under age 3. In Denmark (with low response rates), Germany and Norway, less than 10% of staff consider that activities related to being responsible of children is an important source of stress. A lack of resources and too many children in the group is a high source of stress for more than 20% of staff in all four of the participating countries in centres for children under age 3 (Table 3.2).

Table 3.2. Sources of stress for early childhood education and care staff in centres for children under age 3

Percentage of staff who report that the following is "a lot" a source of stress

	Centres for children under age 3			
	Germany*	Israel	Norway	Denmark**
Workload stress coming from work outside hours spent with children				
Too much preparation work for children's activities	4	4	5	5
Too much work related to documenting children's development	18	4	6	12
Too much administrative work to do	14	1	7	17
Average	**12**	**3**	**6**	**12**
Workload stress coming from insufficient human or financial resources				
Extra duties due to absent staff	27	15	23	21
Too many additional duties (e.g. cleaning)	18	25	16	9
A lack of resources (e.g. financial , material, staff)	21	36	23	37
Too many children in my classroom/playgroup	22	25	25	31
Average	**22**	**25**	**22**	**24**
Stress due to work with children and job-related responsibilities				
Being held responsible for children's development, well-being and learning	6	16	3	6
Managing classroom/playgroup/group behaviour	5	23	4	8
Keeping up with changing requirements from authorities	9	11	8	8
Addressing parent or guardian concerns	6	14	2	2
Accommodating children with special needs	7	8	5	10
Average	**6**	**14**	**4**	**7**

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.
Notes: Within each country, areas of stress reported by the largest percentages of staff as an important source of stress are indicated in white and those reported by the smallest percentages of staff as an important source of stress are indicated in dark blue, with intermediary colours used for areas of stress indicated by intermediate percentages of staff as important.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.16.

StatLink https://doi.org/10.1787/888934207139

In all countries, staff working with a larger group of children are more likely to report this as a source of stress (the difference is not statistically significant for Norway at pre-primary level or for Denmark for centres for children under age 3, with low response rates) (Table C.3.17). In several countries, novice staff and assistants are less likely to report this from working with a large group of children as being important. Centre characteristics also play an important role in the likelihood of reporting this source of stress. In several countries, staff in large centres are more likely to report high levels of stress from having too many children in the group. In some countries, it is also more the case in publicly managed centres.

A lack of resources, including financial support, material resources as well as ECEC staff also appears to be an important source of stress for large percentages of staff. This source of stress is linked to centre characteristics (Table C.3.18). In several countries (Chile; Iceland; Israel for pre-primary; Japan; Norway for both levels of education; and Denmark, with low response rates, for pre-primary) staff in publicly managed centres more often report this as a high source of stress than those working in privately managed

centres. In some countries, it is also the case for staff with more than three years of experience compared to novice staff.

Too much work related to documenting children's development is also an important source of stress for large percentages of staff. In several countries, staff with more than three years of experience report this more frequently, as do teachers compared to assistants, and staff working more hours, and particularly staff spending more hours of work without children (Table C.3.19). Similar patterns hold for staff who are stressed by having too much administrative work to do (Table C.3.20). These results suggest that work done outside of time with children and not linked to the preparation of work with children tends to increase the overall amount of time without children and become a source of stress.

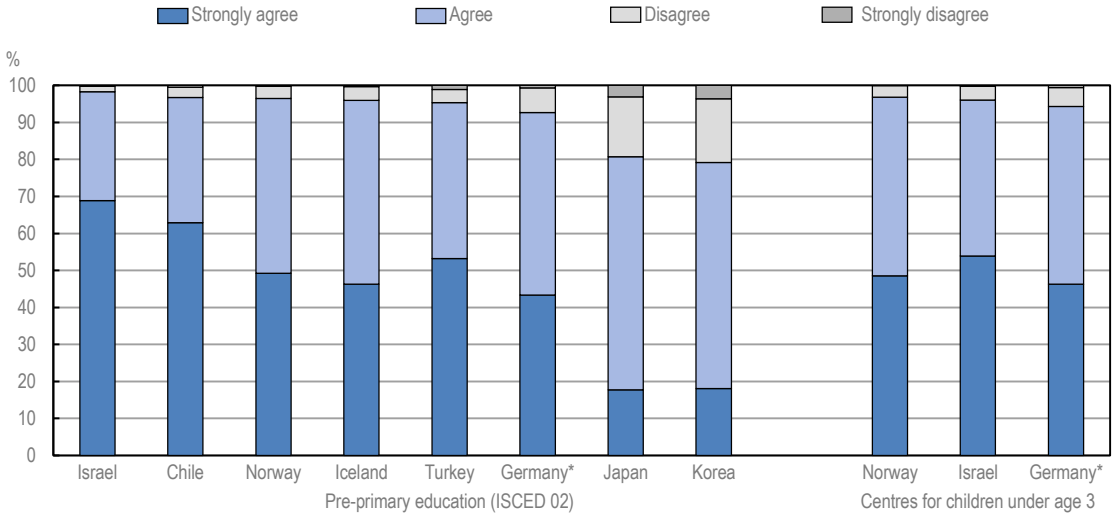
Job satisfaction

Overall satisfaction of staff with their job is another important indicator of staff emotional well-being. TALIS Starting Strong asks staff about their general level of satisfaction with the profession through their level of agreement with the statement "All in all, I am satisfied with my job". Staff are also asked about their satisfaction with the current work environment through their level of agreement with "I enjoy working at this ECEC centre".

Overall, staff in all countries show a high level of satisfaction with the profession and their current job (Figure 3.12 and Figure 3.13). In all countries, a minority of staff "strongly disagree" or "disagree" with the two statements. Staff in Japan and Korea report a lower level of satisfaction than in other countries. There are large variations across countries in the percentages of staff who "strongly agree" that they are satisfied with their job, from 18% in Japan and Korea to 69% in Israel for pre-primary education. Strong agreement with satisfaction with the work at the current ECEC centre is slightly higher.

Figure 3.12. Early childhood education and care staff satisfaction with the job

Percentage of staff answering the following to the statement "All in all, I am satisfied with my job"

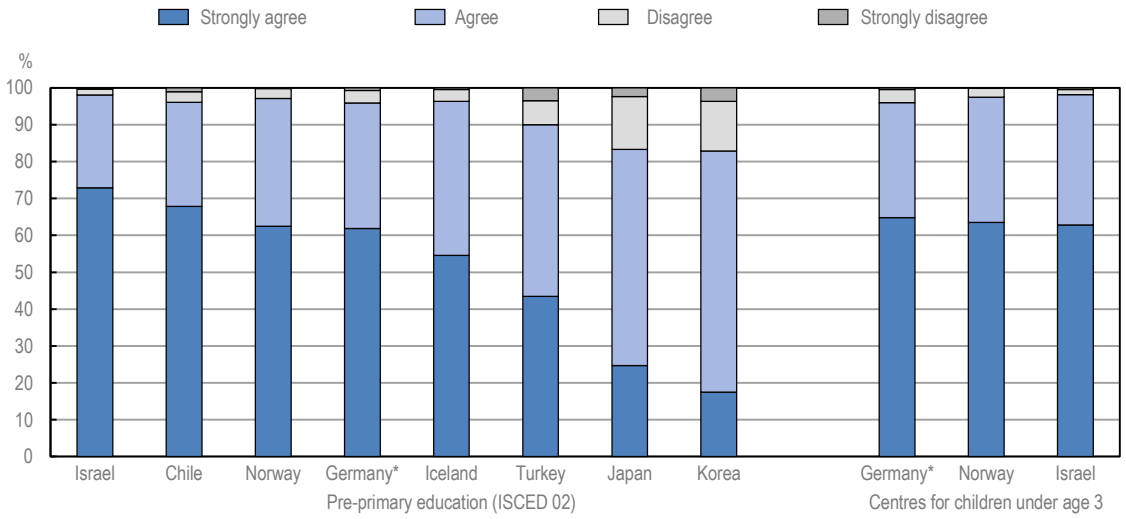


* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Note: *Countries are ranked in ascending order of the percentage of staff who "strongly agree" or "agree".*
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.21.

StatLink https://doi.org/10.1787/888934206930

Figure 3.13. Early childhood education and care staff satisfaction with the current workplace

Percentage of staff answering the following to the statement "I enjoy working at this ECEC centre"



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Note: *Countries are ranked in ascending order of the percentage of staff who "strongly agree" or "agree".*
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.23.

StatLink https://doi.org/10.1787/888934206949

Overall job satisfaction ("All in all, I am satisfied with my job") does not vary much according to staff characteristics and remains high for most staff (Table C.3.22). However, the number of years of experience makes a difference in some countries. Experienced staff report a higher level of job satisfaction than novice ones in Iceland and Japan, while the opposite is true for Korea and in Norway for staff working with children under age 3. In Korea, assistants are more likely than teachers to be satisfied with their job.

Cognitive well-being

Cognitive well-being generally refers to the degree to which people are able to take up new information and to concentrate on their work (Van Horn et al., 2004[24]). TALIS Starting Strong asks staff about their sense of self-efficacy, or their own judgement on their capacity to do the work, through questions on the extent to which they feel they can help and support children in a number of ways. This is one aspect of cognitive well-being. Staff with higher self-efficacy feel more confident in their work, which can reduce their stress and help achieve better outcomes (Dicke et al., 2018[25]).

Self-efficacy is considered in the occupational health psychology literature as a personal resource, which can have a direct positive effect on work engagement. In addition, self-efficacy can buffer the undesirable impact of job demands on stress. Further research discusses the fact that personal resources positively influence work engagement, and that work engagement has a positive impact on future job resources. Individuals who are motivated and engaged create their own resources (e.g. autonomy, feedback, support) over time (Hobfoll, 2001[26]). Overall, the direction of causality remains an open question: self-efficacy may act as a personal resource that adds to other job resources and mitigates stress, but it is also possible that self-efficacy simply mediates the positive influence of motivation on other job resources.

Staff levels of self-efficacy vary across areas and countries (see Chapter 2). On average across countries in pre-primary education, staff show high levels of self-efficacy in supporting children's development, learning and well-being, including helping children to interact with each other, providing all children with a

feeling of security or calming children who are upset for both levels of education (Table 3.3. and Table 3.4). Staff show a lower level of self-efficacy in working with a diversity of children, like supporting the development of children from a disadvantaged background and adapting their work to individual child needs. In all countries, they report the lowest level of self-efficacy for the use of digital technology. As ECEC settings increasingly accommodate a diversity of children and are being exposed to digital technologies, these results point to the need to develop policies to raise the skills and confidence of staff in these areas.

Differences across countries mostly reflect differences in the way staff answer these questions due to a cultural bias, with staff in Japan and to some extent Korea reporting a low level of self-efficacy for all aspects of their work, while staff in Turkey and to some extent Chile tend to report a higher level of self-efficacy. When areas of self-efficacy are ranked within countries (as indicated by colours in Table 3.3 and Table 3.4), only small differences emerge.

Table 3.3. Self-efficacy of early childhood education and care staff, pre-primary education

Percentage of staff who feel that that they can do the following "a lot" in their work with children

	Chile	Germany*	Iceland	Israel	Japan	Korea	Norway	Turkey	Denmark**	Average
Self-efficacy in working with a diversity of children										
Support the development of children from disadvantaged backgrounds	36	9	20	33	2	6	17	34	20	20
Adapt your work to individual child needs	41	20	36	47	4	19	23	49	34	30
Stimulate children's interest in cultural differences and commonalities	34	10	18	28	1	12	19	43	19	21
Self-efficacy in supporting children's development, learning and well-being										
Help children to interact with each other and show good social behaviour	71	60	62	65	6	43	55	75	74	57
Calm a child who is upset	61	54	67	64	10	39	59	67	83	56
Provide all children with a feeling of security	66	61	70	74	15	40	73	78	77	62
Help children to develop self-confidence	70	42	49	56	10	42	42	76	63	50
Help children develop creativity and problem solving	61	31	39	53	5	33	32	71	45	41
Help children develop their capacity to learn independently	47	32	32	45	4	23	24	55	44	34
Monitor and observe children's development	61	24	44	49	8	33	44	73	58	44
Other aspects of self-efficacy										
Help children prepare for starting school	46	26	26	36	4	18	21	60	29	30
Use digital technology to support children's learning	26	1	12	22	0	15	9	39	8	15

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.
Note: Within each country, areas for which the largest percentages of staff report high levels of self-efficacy are indicated in dark blue and those for which the smallest percentages of staff report high levels of self-efficacy are indicated in white with intermediary colours used to indicate intermediate percentages.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.24.

StatLink https://doi.org/10.1787/888934207158

Table 3.4. Self-efficacy of early childhood education and care staff, centres for children under age 3

Percentage of staff who feel that that they can do the following "a lot" in their work with children

	Germany*	Israel	Norway	Denmark**
Self-efficacy in working with a diversity of children				
Support the development of children from disadvantaged backgrounds	9	37	14	18
Adapt your work to individual child needs	22	46	21	36
Stimulate children's interest in cultural differences and commonalities	9	26	12	17
Self-efficacy in supporting children's development, learning and well-being				
Help children to interact with each other and show good social behaviour	60	55	51	76
Calm a child who is upset	61	64	57	84
Provide all children with a feeling of security	67	72	71	78
Help children to develop self-confidence	44	51	40	59
Help children develop creativity and problem solving	32	42	28	39
Help children develop their capacity to learn independently	36	46	23	44
Monitor and observe children's development	22	56	42	57
Other aspect of self-efficacy				
Use digital technology to support children's learning	2	12	9	11

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.
Note: Within each country, areas for which the largest percentages of staff report high levels of self-efficacy are indicated in dark blue and those for which the smallest percentages of staff report high levels of self-efficacy are indicated in white with intermediary colours used to indicate intermediate percentages.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.24.

StatLink https://doi.org/10.1787/888934207177

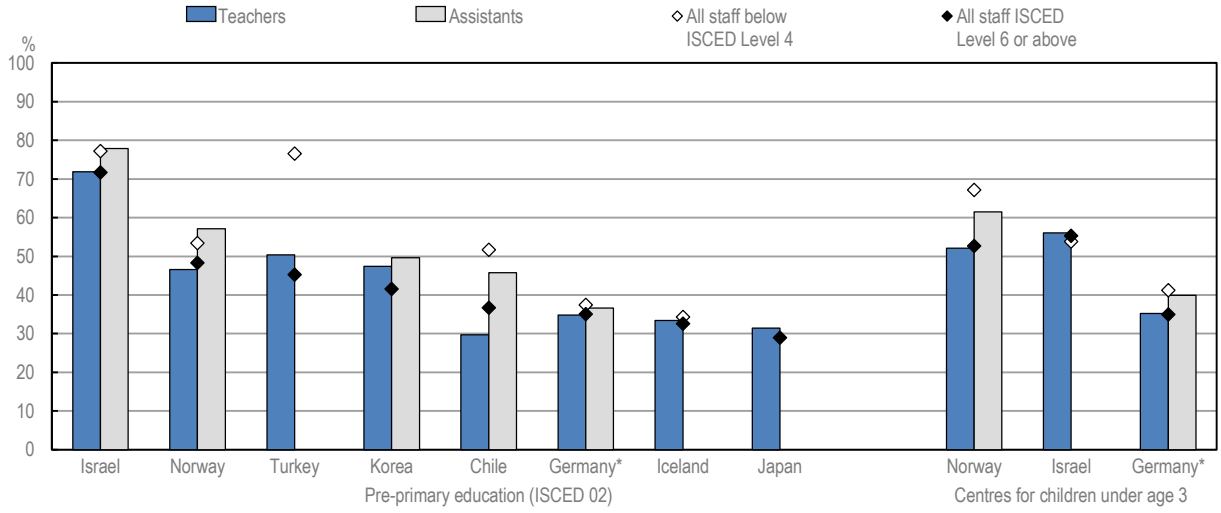
Social well-being

Social well-being involves positive relationships with others, feeling of social contribution and social integration (Fisher, 2014[22]). In the ECEC sector, the way staff feel valued by others, such as by parents and guardians, children, and society are important aspects of their well-being.

From 75% of staff in Israel for pre-primary to 31% in Japan feel valued by society (Table C.3.25). Staff with a lower educational attainment agree more than staff with a higher educational attainment that ECEC staff are valued by society in Chile, Israel and Turkey for pre-primary, Norway for centres for children under age 3, and Denmark (with low response rates) for both levels of education (Figure 3.14). This finding suggests that staff who have invested in higher education feel that the additional resources and efforts related to this investment are not acknowledged by society. Related to this, assistants are more likely than teachers to report that ECEC staff are valued by society in Chile, and in Denmark (with low response rates) and Norway for both levels of education. Years of experience makes a difference in many countries: in Iceland, Israel, Japan and Korea at pre-primary level, and in Denmark (with low response rates) and Norway for staff working with children under age 3, a significantly lower percentage of experienced staff report that they feel valued by society compared to novice staff (Table C.3.25). These results to some extent mirror those found for satisfaction with salary and suggest that salary and social status go hand in hand.

Figure 3.14. Early childhood education and care staff feeling valued by society, by educational attainment and role

Percentage of staff who "strongly agree" with "I think that ECEC staff are valued in society"



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: In Japan and Korea, the sample size of staff with an educational attainment below ISCED Level 4 is too small to report the results. Teachers and assistants are distinguished based on the initial identification of staff members who were eligible to participate in TALIS Starting Strong 2018. The results of assistants cannot be reported in Israel in centres for children under age 3, Japan and Turkey. See the Reader's Guide for more information. In Iceland, the total value of all staff is reported, as a distinction between roles cannot be made due to technical reasons. *Countries are ranked in descending order of the percentage of staff (all staff) who "strongly agree" with "I think that ECEC staff are valued in society".*
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.25.

StatLink https://doi.org/10.1787/888934206968

Feeling valued by parents or guardians can be another important driver of staff well-being, as staff often have regular interactions with parents. In all countries, most staff consider they are highly valued by parents, from 63% in Japan to 99% in both educational levels in Norway (OECD, 2019[1]). Feeling valued by parents varies with staff characteristics. In Germany for staff working with children under age 3 and in Japan, a smaller number of novice staff report that they feel valued by parents compared to staff with more years of experience. A smaller share of assistants report they feel valued by parents than teachers in Israel and Denmark (with low response rates) for pre-primary centres and in Norway for centres under age 3 (Table C.3.26).

The main contributors to staff stress at work

Among the various dimensions of well-being, a key one is staff's stress at work, which is linked to engagement with work, risk of burnout and motivation to leave the profession. This section investigates the main drivers of stress for ECEC staff with the view to inform policies. As the ECEC sector faces specific problems in attracting candidates and retaining staff while the sector is expanding in many countries, putting in place policies to mitigate the various sources of stress can be an important objective for government.

Job demand and resources/rewards models explaining job stress

Many studies over the past three decades have shown that job characteristics and working conditions can have a profound impact on stress at work. The literature generally considers job demands such as a high work pressure, emotional demands and role ambiguity, that may lead to sleeping problems, exhaustion and other health problems (Halbesleben and Buckley, 2004[27]). In contrast, job resources and rewards such as social support, performance feedback and autonomy can help staff cope with high demand, motivate them to learn more and remain engaged in their work (Demerouti et al., 2001[11]; Taris and Feij, 2004[28]). Job stress comes from the disturbance of the equilibrium between the demands staff are exposed to and the resources and rewards they have at their disposal.

Staff in ECEC engage in a lot of cognitive and emotional work. They face high accountability and important pressure to complete daily routines, administrative and documentation work, engage with others (parents, guardians and children), while constantly being required to suppress a number of feelings such as sadness, anger, anxiety, frustration and irritation. Job demands are not necessarily negative, but they may turn into sources of stress when meeting those demands requires a lot of effort and resources to meet these demands are not available. The sections above have shown that not all staff are satisfied by the support they receive from their leaders and that collaborative practices, which can bring support from colleagues, are not always widespread. At the same time, staff consistently report a lack of financial and material resources.

Questions from TALIS Starting Strong on the sources of stress reveals the aspects of staff work that can be the most challenging to them. They include working with large groups of children; working with children with special needs; having extra work to do aside from working with children, such as documenting children's development and doing administrative work. TALIS Starting Strong includes information on both the demands faced by staff and the resources and rewards they get to perform the work (see Figure 3.1).

Sources of stress could be limited by reducing group size, relieving staff from administrative work and from documenting children's development, or by providing more resources to centres and staff. However, many countries face important budget and recruitment constraints and alleviating these sources of stress cannot be easily addressed. Some aspects of the work, such as documenting children's development, may create stress for staff, but are needed for the quality of ECEC. The sources of stress that are considered as important by the largest percentages of staff gives a first indication to countries where to place their priorities. In addition, the analysis below attempts to explain major sources of stress by a combination of job demands and job resources or rewards to highlight the major factors that are linked to stress in each country and for several sources of stress.

The analysis considers job demands and resources or rewards specific to each source of stress as well as those that are common to many tasks on the job (Table 3.5). Each source of stress is related through regression analyses to job demands, resources and rewards, as well as to control variables of staff and centre characteristics together in the same model. Hence, all associations between reporting stress in a particular area and, for instance, a job demand, takes into account all other job demands and job resources as well as staff characteristics. As pointed out for similar studies, since estimates are based on self-reported measures of job demands and resources as well as self-reported outcomes, the statistical relationships between constructs may be inflated. Therefore, results need to be considered with care.

Table 3.5. Models of job demands, resources and rewards considered to explain the main sources of stress for early childhood education and care staff

Indicators included in regressions to explain each of the four sources of stress

	Sources of stress			
	Too many children in the classroom/playgroup/group	**Accommodating children with special needs**	**Too much administrative work**	**Too much work related to documenting children's development**
Job demands				
Specific to each source of stress	Number of children in the target group.[1,2]	Percentage of children with special needs in the target group.[3]	Percentage of time spent, excluding time spent with children, on participating in the centre's management, staff meetings and general administrative work.[4]	Percentage of time spent, excluding time spent with children, on documenting children's development, well-being and learning.[4]
Common to all sources of stress	Number of children in the target group.[1,2] Percentages of children from socio-economically disadvantaged homes.[3] Percentage of the working hours spent without children.[2]			
Job resources				
Specific to each source of stress	Classroom/playgroup/group management was included in the formal education or training programme and/or in a professional development activity over the last 12 months.[5]	Working with children with special needs was included in the formal education or training programme and/or in a professional development activity over the last 12 months.[5 7 8]	Collaboration among staff.[9]	Monitoring/documenting child development was included in the formal education or training programme and/or in a professional development activity over the last 12 months.[5]
	Self-efficacy in adapting the work to individual child needs.[7]	Self-efficacy in adapting the work to individual child needs		Self-efficacy in monitoring and observing children's development.[7]
	Collaboration among staff.[9]	Collaboration in the form of engaging in discussions about the development or needs of specific children		Collaboration in the form of working with other staff to discuss the evaluation of children's development.8
Common to all sources of stress	Educational attainment.[10] Novice versus experienced staff.[12] I need more support from my leaders.[11] The centre leader encourages all staff to have a say in important decisions.[6]			
Job rewards				
Common to all sources of stress	I am satisfied with the salary I receive for my work.[7] Having a permanent versus a temporary contract.[13]			

1. For this model, this item is considered as a job demand specific to the source of stress considered, not as a general job demand. Explanatory variables are included as dummy variables in the logistic regression with the following reference categories:
2. bottom quarter compared to top quarter
3. less than or equal to 10% diversity of children in the target group compared to 11% or more
4. less than or equal to 30% of time spent – excluding time spent with children – on other tasks compared to 31% or more
5. specific skill not included compared to included
6. "strongly disagree, disagree or agree" with the statement compared to "strongly agree"
7. "strongly disagree or disagree" with the statement compared to "agree or strongly agree"
8. "never, less than monthly or monthly" compared to "weekly or daily"
9. bottom quarter compared to top quarter of collaboration scale
10. ISCED Level 3 or below compared to ISCED Level 6 or more
11. "agree or strongly agree" compared to "strongly disagree or disagree"
12. more than three years of experience compared to less than or equal to three years' experience
13. temporary compared to a permanent contract.

Notes: Binary logistic regression analysis enables the estimation of the relationship between explanatory variables (job demands, resources and rewards) and the outcome variable (each source of stress). The outcome variable for each source of stress has two categories corresponding to "not stressed" (reporting "not at all" or "to some extent" to the item on stress) or "stressed" (reporting "quite a bit" or "a lot" to the item on stress). For each explanatory variable, the odds ratio is estimated, which measures the relative likelihood of staff reporting stress in relation to such specific demand, other general demand, resources and rewards. Relative to the reference category, odds ratios above 1 indicate a higher likelihood of reporting stress, whereas odds ratios below 1 indicate a lower likelihood.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm.

The relationship between sources of stress and working conditions

The goal of this analysis is to assess the main factors, job demands, and job resources or rewards that drive the various sources of stress. It identifies cross-country patterns, as well as for each country the factors that play important roles and can therefore be targeted by policies. This section discusses the drivers of four sources of stress: 1) having too many children in the classroom/playgroup/group; 2) accommodating children with special needs; 3) having too much administrative work to do; and 4) having too much work related to documenting children's development.

Having too many children in the classroom/playgroup/group is reported as an important source of stress by the largest percentages of staff in all countries except Japan, which is, however, a country where staff work with large groups of children. The number of children in the target group is unsurprisingly a major driver of this source of stress in all countries except in Norway for pre-primary staff and in Denmark (with low response rates) for centres for children under age 3 (Table 3.6). This means that, in most countries, after accounting for resources and rewards that staff can benefit from, as well as other job demands that may add to the burden, staff working with larger target groups are still more likely to report being stressed by having too many children in the target group. In contrast, in Norway (for pre-primary) and in Denmark (with low response rates, for centres for children under age 3), the set of job resources and rewards included in the analysis appears to buffer the effect of working with larger groups of children on stress.

In terms of job demands, in Chile, Israel (both levels of education) and Japan, working with a high share of children from socio-economically disadvantaged homes also contributes to this source of stress, in addition to the demand related to the size of the group. In terms of the resources that can mitigate this source of stress, self-efficacy in adapting work to child needs mitigates stress in several countries. Satisfaction with salary acts as a job reward in several countries and makes stress due to working with many children around 50% less likely in most countries. Receiving support from leaders also seems to be an important resource for staff in helping them work with large groups. Having received training in classroom/playgroup/group management, either as part of pre- or in-service training, buffers stress from working with large groups of children only in Korea (Table C.3.27). In Japan, where staff generally work with large groups of children, those who work with a number of children in the target group in the top quarter compared to the bottom quarter are ten times more likely to report stress from this source. However, receiving support from leaders and satisfaction with salary mitigate this stress. In Iceland and Israel for pre-primary education, where too many children in the group is the number one ranked source of stress, self-efficacy does not appear to buffer the effect of working with many children, suggesting that policies to support self-efficacy such as through training and informal learning (see Chapter 2) could help. In Norway, where staff who work with a larger group of children are not more likely to report stress from the size of the group, self-efficacy, support from the leader and satisfaction with salary all act as stress buffers.

Table 3.6. Sources and buffers of stress coming from the size of the classroom/playgroup/group

Associations between reporting "too many children in the group" as an important source of stress and job demands, resources and rewards

	Job demand (specific)	Job demand (general)	Job resource (specific)			Job resource (general)		Job reward		
	Number of children in the target group	Children from socio-economically disadvantaged homes	Self-efficacy in adapting work to child needs	Group management was included in pre- and/or in-service training	Collaboration among staff	Support from leaders	Having a say in important decisions	Satisfaction with salary	Percentage of staff answering this is "a lot" a source of stress	Rank among other sources of stress
Pre-primary education (ISCED 02)										
Chile	+	+	-			-			18	3
Germany*	+		-					-	29	2
Iceland	+					-		-	39	1
Israel	+	+				-		-	34	1
Japan	+	+				-	+	-	9	10
Korea	+		+	+					29	3
Norway			-			-		-	31	1
Turkey	+					-		-	16	3
Denmark**	+		-						24	2
Centres for children under age 3										
Germany*	+		-						22	2
Israel	+	+						-	25	2
Norway	+					-		-	25	1
Denmark**								-	31	2

- Decrease in the source of stress (odds ratio lower than one)
+ Increase in the source of stress (odds ratio higher than one)
Association is not significant

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.

Notes: Based on odds ratios from binary logistic regressions of reporting stress ("agree or strongly agree") versus no stress ("disagree or strongly disagree") to the statement "Having too many children in the classroom/playgroup/group" on the list of job demands, resources and rewards presented in Table 3.5. All predictors are entered as dummy variables, with the reference categories presented in Table 3.5. Control variables in the regression include staff-level characteristics (working full time/part time; role in the target group). Results are shown for a selection of variables only.

Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.27.

StatLink https://doi.org/10.1787/888934207196

Accommodating children with special needs is a major source of stress for around 10% or more of pre-primary staff. It is also an area for which staff indicate that they need training. In most countries, staff who work with a larger share of children with special needs in the target group are more likely to report this as an important source of stress (Table 3.7. This suggests that the set of job resources included in the analysis are insufficient to buffer the effect of working with children with special needs on stress. In Japan and Turkey, a large number in the target group adds to the stress coming from having children with special needs in the target group. In most countries, staff who are satisfied by the support they receive from the ECEC centre leader are around 50% less likely to report this source of stress. Training to work with children with special needs increases the likelihood of stress to work with children with special needs in Germany (centres for children under age 3) and Korea. These findings suggest that the training that staff have received is not fully effective in buffering the stress coming from working with children with special needs, although training may also raise staff awareness of the difficulties involved in supporting these children. Likewise, satisfaction with salary acts as a buffer only in Iceland and in Israel for staff in centres for children under age 3. In contrast, self-efficacy in adapting work to child needs mitigates this source of stress in a number of countries.

Having too much work related to documenting children's development is an important source of stress for large percentages of staff in Chile, Denmark (for pre-primary, with low response rates), Germany (for both levels of education), Israel (for pre-primary), Korea and Turkey (Table 3.8). In several countries, staff who, as part of their activities outside of work with children, spend a large percentage of their work time on documenting children's development report more of this type of stress. Time spent without children, which includes time spent on documenting children's development, but also on other activities, also add to this source of stress. Job resources or rewards that act as a buffer are similar to those for other sources of stress, such as support from leaders and satisfaction with salary. In contrast, self-efficacy in monitoring and observing children's development and the inclusion of monitoring children's development in pre- and/or in-service training do not mitigate this source of stress, except in Germany for pre-primary staff and Denmark for staff in centres for children under age 3 (with low response rates). These results could point to lack of efficiency of this type of training or the fact that having the time to perform these tasks prevails.

Having too much administrative work to do is one of the main sources of stress in Chile, Japan and Korea and concerns more than 10% of staff in all countries except in Iceland (for pre-primary), and Israel and Norway for centres for children under age 3 (Table 3.9. In several countries, staff who spend more time on centre management, staff meetings and general administrative tasks are more likely to report this as a source of stress, which suggests that they do not have enough resources to buffer the effect of this aspect of their work on stress. Having a lot children in the group also seems to contribute to this source of stress, as working with children and on administrative tasks cannot be done at the same time. For the same reason, a larger percentage of time without children tends to increase this source of stress. Staff would, in fact, need more time without children to buffer this source of stress. In Chile, where this source of stress is important for large percentages of staff, having only a small percentage of time without children adds to this source of stress. In Japan and Korea, where this source of stress also ranks high, satisfaction with salary mitigates this source of stress. In Iceland, where only 4% of staff report this as an important source of stress, support from leaders makes this source of stress half as likely, and novice teachers are also less likely to report this source of stress, even after accounting for the fact that novice staff spend less time without children than experienced staff (Table C.3.30). These findings could suggest that administrative work is attributed to experienced staff or that novice staff are more efficient in using technology for administrative tasks.

Table 3.7. Sources and buffers of stress coming from accommodating children with special needs

Strengths of the associations between reporting "accommodating children with special needs" as an important source of stress and job demands, resources and rewards

	Job demand (specific)	Job demand (general)	Job resource (specific)			Job resource (general)		Job reward		
	Percentage of children with special needs in the target group	Number of children in the target group	Self-efficacy in adapting work to child needs	Working with children with special needs in the pre- and/or in-service training	Collaboration among staff in form of engaging in discussions about the development or needs of specific children	Support from leaders	Having a say in important decisions	Satisfaction with salary	Percentage of staff answering this is "a lot" a source of stress	Rank among other sources of stress
Pre-primary education (ISCED 02)										
Chile									12	9
Germany*	+	+	-						10	8
Iceland			-			-		-	10	7
Israel	+					-			13	9
Japan	+	+				-			15	3
Korea	+			+		-			12	9
Norway	+								10	5
Turkey						-			11	8
Denmark**			-			-			16	6
Centres for children under age 3										
Germany*	+		-	+	+	-			7	8
Israel						-	+	-	8	9
Norway	+					-			5	8
Denmark**						-			10	6

- Decrease in the source of stress (odds ratio lower than one)
+ Increase in the source of stress (odds ratio higher than one)
Association is not significant

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.

Notes: Based on odds ratios from binary logistic regressions of reporting stress ("agree or strongly agree") versus no stress ("disagree or strongly disagree") to the statement "accommodating children with special needs" on the list of job demands, resources and rewards presented in Table 3.5. All predictors are entered as dummy variables, with the reference categories presented in Table 3.5. Control variables in the regression include staff-level characteristics (working full time/part time; role in the target group). Results are shown for a selection of variables only.

Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.28.

StatLink https://doi.org/10.1787/888934207215

Table 3.8. Sources and buffers of stress coming from work related to documenting children's development

Strengths of the associations between reporting "having too much work related to documenting children's development" as an important source of stress and job demands, resources and rewards

	Job demand (specific)	Job demand (general)	Job resource (specific)			Job resource (general)		Job reward	Percentage of staff answering this is "a lot" a source of stress	Rank among other sources of stress
	Time spent on documenting children's development, well-being and learning	Time spent without children	Self-efficacy in monitoring and observing children's development	Monitoring/ documenting child development was included in pre-and/or in-service training	Collaboration in form of working with other staff to discuss the evaluation of children's development	Support from leaders	Having a say in important decisions	Satisfaction with salary		
Pre-primary education (ISCED 02)										
Chile	+	+				-		-	16	4
Germany*	+		-			-		-	23	4
Iceland						-		-	5	11
Israel				+		-			16	8
Japan	+					-		-	13	6
Korea								-	27	6
Norway		+							5	10
Turkey						-		-	16	4
Denmark**		+						-	20	4
Centres for children under age 3										
Germany*		+							18	4
Israel						-	+		4	11
Norway	+	+				-		-	6	7
Denmark**			-	-				-	12	5

- Decrease in the source of stress (odds ratio lower than one)
+ Increase in the source of stress (odds ratio higher than one)
Association is not significant

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.

Notes: Based on odds ratios from binary logistic regressions of reporting stress ("agree or strongly agree") versus no stress ("disagree or strongly disagree") to the statement "having too much work related to documenting children's development" on the list of job demands, resources and rewards presented in Table 3.5. All predictors are entered as dummy variables, with the reference categories presented in Table 3.5. Control variables in the regression include staff-level characteristics (working full time/part time; role in the target group). Results are shown for a selection of variables only.

Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.29.

StatLink https://doi.org/10.1787/888934207234

Table 3.9. Sources and buffers of stress coming from administrative work

Strengths of the associations between reporting "having too much administrative work to do" as an important source of stress and job demands, resources and rewards

	Job demand (specific)	Job demand (general)		Job resource (specific)	Job resource (general)		Job reward	Percentage of staff answering this is "a lot" a source of stress	Rank among other sources of stress
	Time spent on participating in the centre's management, staff meetings and general administrative work	Number of children in the target group	Time spent without children	Collaboration among staff	Support from leaders	Having a say in important decisions	Satisfaction with salary		
Pre-primary education (ISCED 02)									
Chile	+		+		-			19	1
Germany*		+	+		-		-	16	6
Iceland					-		-	4	12
Israel	+	+			-			16	7
Japan	+				-		-	21	2
Korea	+						-	38	1
Norway			+					10	6
Turkey	+		+		-	-	-	15	5
Denmark**			+					20	5
Centres for children under age 3									
Germany*	+	+					-	14	6
Israel	+		+		-	+		1	12
Norway			+		-		-	7	6
Denmark**								17	4

- Decrease in the source of stress (odds ratio lower than one)
+ Increase in the source of stress (odds ratio higher than one)
Association is not significant

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.
Notes: Based on odds ratios from binary logistic regressions of reporting stress ("agree or strongly agree") versus no stress ("disagree or strongly disagree") to the statement "having too much administrative work to do" on the list of job demands, resources and rewards presented in Table 3.5. All predictors are entered as dummy variables, with the reference categories presented in Table 3.5. Control variables in the regression include staff-level characteristics (working full time/part time; role in the target group). Results are shown for a selection of variables only.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.30.

StatLink https://doi.org/10.1787/888934207253

This analysis points to important factors that can buffer sources of stress: self-efficacy, support from leaders and salaries. Some resources considered in the analysis have not been found to act as an important buffer across a large number of countries. This is the case of training related to the area of the source of stress, collaborative practices and having a say in decisions. Having a say in decisions is positively related to stress coming from too many children in the classroom/playgroup/group in Japan and to the three other sources of stress considered in this section in Israel for centres for children under age 3.

These results are not aligned with the literature, which suggests that these aspects of working conditions are important job resources to help workers perform their work and face sources of stress. There could be two main reasons for this. First, the survey may imperfectly capture these job resources, partly due to the self-reported nature of the information. The formulation of the question may also only partly capture the related job resource. For instance, "having a say in important decisions" is only one aspect of job autonomy. Second, training, collaborative practices and job autonomy may not be sufficiently developed or targeted to act as a buffer of stress. It could be, for instance, that staff who are trained or exchange with colleagues on an area of work are more aware of the challenges related to this area of work. Having a say in important decisions may lead to additional responsibilities and working time, and therefore can add to stress rather than giving staff more flexibility in their work.

The implications of staff well-being

With staff being at the centre of the quality of ECEC, their well-being has multiple implications. Of particular interest is the relationship between staff well-being and the extent to which staff are willing to stay in the profession, the capacity of the sector to attract new candidates and staff's practices with children.

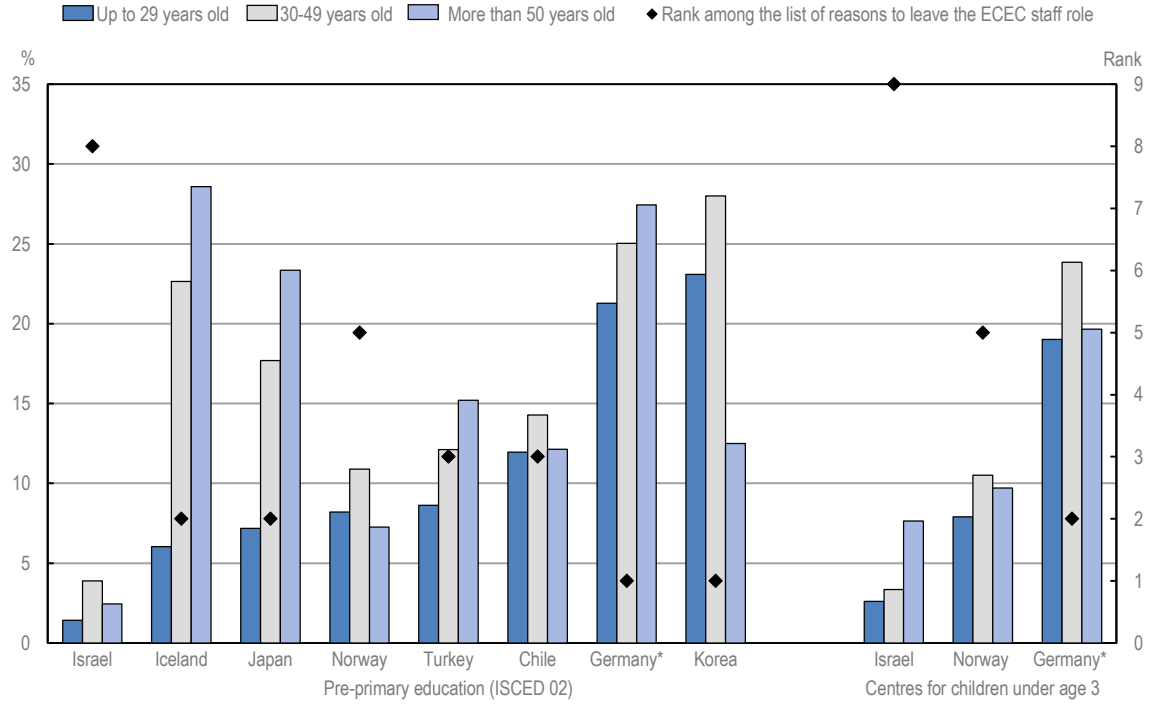
Motivation to join or leave the sector

Thinking of leaving the job for health-related issues, rather than for any other reasons discussed in the beginning of the chapter, indicates that staff do not envisage a change or progression in their careers. This may be the consequence of poor well-being and could indicate possible risk of burnout. From 3% of pre-primary education staff in Israel to 25% of pre-primary education staff in Germany indicate "resolving health-related issues (e.g. physical and/or psychological burnout)" as the most likely reason to leave the ECEC staff role (Table C.3.3). This is the most likely reason in Germany and Korea to leave the role.

Countries differ in the age pattern of reporting health-related issues as the most likely reason to leave the job, pointing to different policy challenges (Figure 3.15). In Denmark (with low response rates), Germany, Iceland, Japan and Turkey in pre-primary education and in Israel in centres for children under 3, the percentage of staff reporting to leave due to health-related issues increases with age. In Chile, Germany (centres for children under 3), Israel (pre-primary education), Korea and Norway (both levels of education), middle-aged workers are more likely to report health-related issues as the most likely reason to leave than other age groups. Findings for these countries point to the need for policies to improve working conditions and job quality alongside career growth prospects. In Korea and to some extent Chile, percentages of young staff mentioning this reason to leave are relatively high compared to older age groups. Policies aiming to raise the quality of initial training programmes and facilitate the integration of young staff in ECEC centres can help address difficulties faced by young staff.

Figure 3.15. Resolving health-related issues as the most likely reason to leave the early childhood education and care profession, by age of staff

Percentage of staff reporting that resolving health-related issues is the most likely reason to leave the ECEC staff role and rank of this reason among the full list of reasons to leave the ECEC staff role

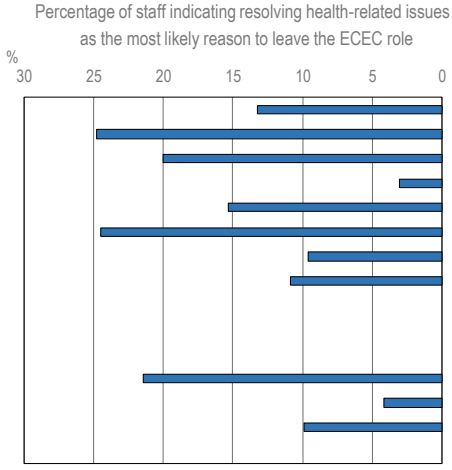


* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.
Notes: Countries *are ranked in ascending order of the percentage of staff up to 29 years old who indicate resolving health-related issues as the most likely reason to leave the ECEC role.*
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.4.

StatLink https://doi.org/10.1787/888934206987

Comparing the percentage of staff who indicate resolving health-related issues as the most likely reason to leave the job to those who declare different levels of stress can give an indication of the role of stress for the capacity of the sector to retain staff. This can be done for the various sources of stress (Figure 3.16). In Iceland, where a large share of staff indicate resolving health-related issues as the most likely reason to leave the profession, and in Japan, this seems to be related to various sources of stress. In Germany for pre-primary education, large percentages of staff also indicate health as an important reason to leave the job. This is related to stress from having too much work from documenting children's development and having too many children in classroom/playgroup/group. The latter source of stress is also associated with the percentage of staff reporting health as a likely reason to leave the job in Iceland, Japan and Norway for both levels of education.

Figure 3.16. Difference in the percentage of staff reporting "resolving health-related issues" as the most likely reason to leave the profession, by level and source of stress



	Difference in the percentage of staff reporting that resolving health-related issues is the most likely reason to leave the ECEC staff role by…				
	… stressed for having too much work related to documenting children's	… stressed for having too much administrative work to do	… stressed for having extra duties due to absent ECEC staff	… stressed for accomodating children with special needs	…stressed by too many children in the classroom/ playgroup
Pre-primary education (ISCED 02)					
Chile					
Germany*	+				+
Iceland	+	+	+		+
Israel					
Japan		+	+	+	+
Korea					
Norway					+
Turkey				-	
Denmark**				+	
Centres for children under age 3					
Germany*	+				
Israel					
Norway			+		+
Denmark**					

+ Positive difference
- Negative difference
Difference is not significant
Missing values

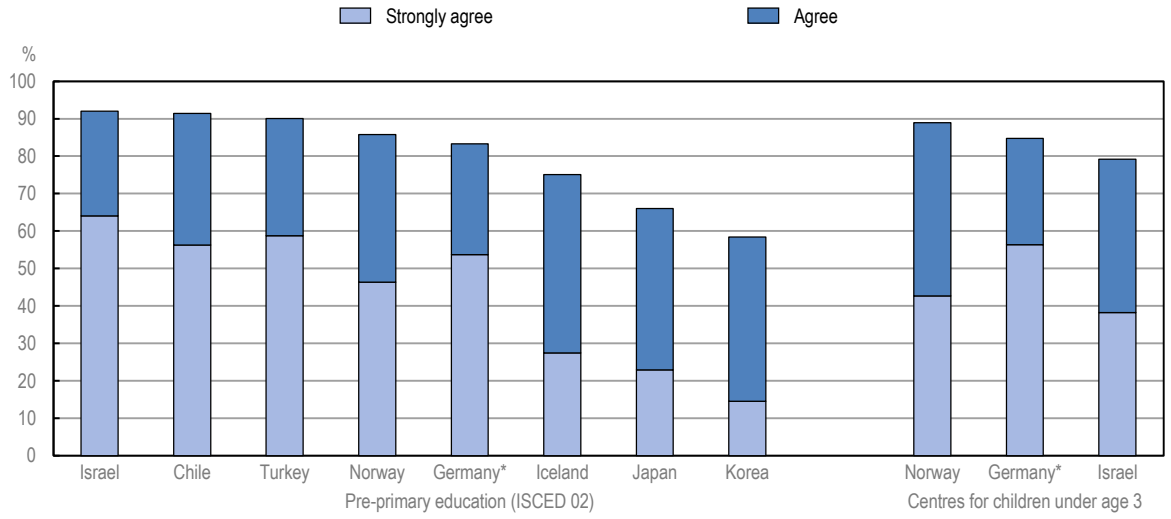
* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.
Notes: Differences in the percentage of staff reporting "resolving health-related issues" as the most likely reason to leave the profession between those answering the considered source of stress is an important one (answering "quite a bit" or "a lot" to the question on the source of stress) and not an important one (answering "not at all" or "to some extent" to the question on the source of stress).
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.31.

StatLink https://doi.org/10.1787/888934207006

TALIS Starting Strong also asks staff whether "if they could decide again, they would choose to work as an ECEC staff". Answers to this question may also give indication of the willingness of staff to remain in the profession and of the capacity of the sector to attract candidates. The percentage of staff reporting agreement with "If I could decide again, I would still choose to work as an ECEC staff" is generally large, but smaller for Japan and Korea (Figure 3.17).

Figure 3.17. Choosing again to be an early childhood education and care staff

Percentage of staff reporting that they "agree" or "strongly agree" with the statement "if I could decide again, I would choose to work as an ECEC staff"



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Note: *Countries are ranked in descending order of the percentage of staff who "strongly agree" or "agree".*
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm.

StatLink https://doi.org/10.1787/888934207025

In all countries except Iceland, the percentage of staff reporting that if they could choose again, they would choose to work as an ECEC staff is lower among staff who report higher levels of stress than among staff reporting less stress (Table 3.10). In particular, in all of these countries, staff who report stress from having too many children in the classroom/playgroup/group show a lower level of agreement with the statement. In Japan and Korea, where smaller percentages of staff report that if they could choose again they would choose to work as an ECEC staff, this is even more true for staff reporting a high level of stress for various sources of stress and for all sources of stress considered in Japan. This is in line with studies that have found that stress at work can lead to disengagement with work (Bakker et al., 2007[5]).

Feedback loop: From staff shortages to staff working conditions

Well-being and working conditions are crucial determinants of the capacity of the sector to attract candidates and maintain the workforce and thereby of staff shortages. Staff shortages, in turn, affect staff working conditions and well-being.

Through several questions, TALIS Starting Strong asks staff and leaders about the prevalence of staff shortages and their implications for several aspects of their work. Three areas of implications of staff shortages are considered: 1) a barrier to participation in professional development; 2) a source of stress in staff's and leaders' work; and 3) a limit on the effectiveness of leaders and the capacity of centres to provide a quality environment for development, learning and well-being (Table 3.11).

In Germany for both levels of education and in Israel for centres for children under age 3, large percentages of staff and leaders indicate that staff shortages create problems in a number of areas, such as a source of stress and a hindrance to the quality of the environment. Both staff and leaders in Korea indicate that staff shortages are a barrier to participation in professional development. In Norway, for both levels of

education, smaller percentages of staff and leaders than in other countries indicate that staff shortages create problems in most of the areas included.

In some countries, the perception of staff shortages and their implications differ among staff and leaders. In Iceland and Japan for pre-primary and Israel for centres for children under age 3, leaders report a lack of staff as a source of stress, but staff are less likely to report so. In contrast, in Norway, leaders are less likely than staff to report staff shortages as a source of stress. These differences in perceptions between staff and leaders can come from the way staff shortages are addressed, either by leaders taking on some of the staff's duties or staff taking on some extra work.

Table 3.10. Difference in the percentage of staff reporting that if they could decide again, they would choose to work as an early childhood education and care staff, by level and source of stress

	Difference in the percentage of staff reporting that if they could decide again, they would choose to work as an ECEC staff by…				
	… stressed for having too much work related to documenting children's development	… stressed for having too much administrative work to do	… stressed for having extra duties due to absent ECEC staff	… stressed for accommodating children with special needs	…stressed by too many children in the classroom/play group
Pre-primary education (ISCED 02)					
Chile	-	-	-	-	-
Germany*	-	-	-	-	-
Iceland				-	
Israel					-
Japan	-	-	-	-	-
Korea	-	-			-
Norway			-	-	-
Turkey		-	-		-
Denmark**	-	-	-	-	-
Centres for children under age 3					
Germany*	-		-		-
Israel			-		-
Norway	-	-	-		-
Denmark**					-

+ Positive difference
- Negative difference
Difference is not significant
Missing values

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.
Notes: Differences in the percentage of staff reporting that if they could decide again, they would choose to work as an ECEC staff between those answering the considered source of stress is an important one (answering "quite a bit" or "a lot" to the question on the source of stress) and not an important one (answering "not at all" or "a lot" to the question on the source of stress).
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.32.

StatLink https://doi.org/10.1787/888934207272

Table 3.11. Shortages of staff and their implications for the early childhood education and care workforce and sector according to staff and leaders

Percentage of staff or leaders who report the following

	Participation in professional development Percentage of ...		Source of Stress Percentage of ...			Limit to effectiveness and quality of the environment for development, well-being and learning Percentage of ...	
	Staff	Leaders	Staff	Leaders	Leaders	Leaders	Leaders
	...who "strongly agree that "not enough staff to compensate for my absence" is a barrier for participating in professional development	... who "strongly agree" that "not having enough staff to compensate my absence" is a barrier for participating in professional development	... who consider "having extra duties due to absent staff" is "a lot" a source of stress at work	... who consider "a lack of staff to carry out work" is "a lot" a source of stress	... who considered "ECEC staff shortage" limit their effectiveness "a lot"	... who consider that "shortage of staff for the number of enrolled children" hinders "a lot" the ECEC centre capacity to provide a quality environment for development, well-being and learning	... who consider that "shortage of qualified staff " hinders "a lot" the ECEC centre capacity to provide a quality environment for development, well-being and learning
Pre-primary education (ISCED 02)							
Chile	29	21	13	13	11	4	6
Germany*	12	16	33	29	29	20	11
Iceland	23	14	15	27	24	5	12
Israel	24	26	10	a	a	25	17
Japan	25	21	7	24	18	4	7
Korea	53	36	10	15	17	7	11
Norway	18	9	22	9	9	6	1
Turkey	23	13	6	5	5	11	15
Denmark**	14	6	22	17	9	14	6
Centres for children under age 3							
Germany*	12	22	27	27	33	20	14
Israel	30	25	15	57	53	32	34
Norway	17	11	23	9	3	8	1
Denmark**	17	14	21	23	15	13	2

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.
Notes: White (dark blue) colour indicates countries and levels of education for which there are the largest (smallest) percentages of staff reporting that shortages of staff create a problem in the area and light blue indicates values in between. Both pre-primary (ISCED 02) centres and centres for children under age 3 are considered together for the ranking.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm.

StatLink https://doi.org/10.1787/888934207291

Policies to address staff shortages by attracting more candidates to the profession would need to act on the multiple dimensions of the working conditions. In addition, policies can aim to target specific groups of candidates with the view to diversify the workforce, and in particular, attract more men to the profession, which would be a way to alleviate staff shortages (Box 3.1).

Box 3.1. Attracting men to the early childhood education and care profession

Recruiting men in the early childhood education and care (ECEC) profession can help to address shortages of staff, but can also have a positive impact on children's development of attitudes towards gender roles (OECD, 2019[29]). This box presents different strategies that OECD countries are putting in place to attract and retain male staff in the ECEC profession.

Norway

In the last two decades, Norway has committed significant efforts to promoting gender equality in ECEC. One way of achieving this has been to promote the recruitment of men among ECEC staff. This objective has been stated in national strategies, including the goal for men to represent at least a 20% of the ECEC workforce (Engel et al., 2015[30]). Norway has implemented several initiatives to work towards this target. One example is the "Play Resources" project, which aims to inspire more men to work in ECEC centres. This project has been reproduced in several counties across Norway. The project encourages boys to experience work in ECEC settings and inspires them to consider working with young children as a professional career. For example, the county of Oppland financed a project where male pupils in secondary school (13-16 years old) were invited to work in ECEC settings for 1-2 weeks during their holidays, or 1 day a week after school, for a set period of time.

Queen Maud University College, the county governor of Oppland, and the Centre for Equality and Eastern Norway Research Institute have received funding to evaluate and further develop this project. Findings suggest that the "Play Resources" project has been beneficial not only for the ECEC setting, but also for the boys and the children. As a long-term objective, the aim is to increase the share of men working permanently in ECEC and to increase the status of the ECEC profession.

Israel

The share of men in the ECEC workforce in Israel is low. In response, Israel has recently developed an initiative to encourage men to work in pre-primary centres (ISCED 02). Israel has supported the establishment of a network (external and independent from the Ministry of Education) which acts to promote and facilitate the integration of men into the ECEC workforce. This initiative is targeted at two populations. First, at men who have already completed a degree with a specialisation in ECEC education (which represent a very small share) but who have not been incorporated to the ECEC system yet. In these cases, the forum facilitates their integration into pre-primary centres. Second, it targets men who hold a degree in other fields but who wish to enter the ECEC profession. In these cases, candidates need to undergo further training before being able to join the ECEC workforce. To facilitate these arrangements, the forum sponsors joint meetings and conferences in collaboration with representatives of the Ministry of Education.

Germany

In Germany, one way of attracting more men to the ECEC profession has been through the recently developed Skilled Labour Initiative for Staff in Early Childhood Education and Care: Attracting Young Talent, Retaining Professionals ("Fachkräfteoffensive für Erzieherinnen und Erzieher: Nachwuchs gewinnen, Profis binden") (2019/22). This initiative aims to attract additional ECEC staff by expanding paid and workplace-based training and by supporting vocational and practical education with training supervisors in ECEC centres. There are also financial incentives for professional development and taking on special technical responsibility in the form of bonuses. While not specifically targeted at men, these initiatives aim to expand and diversify the pool of candidates.

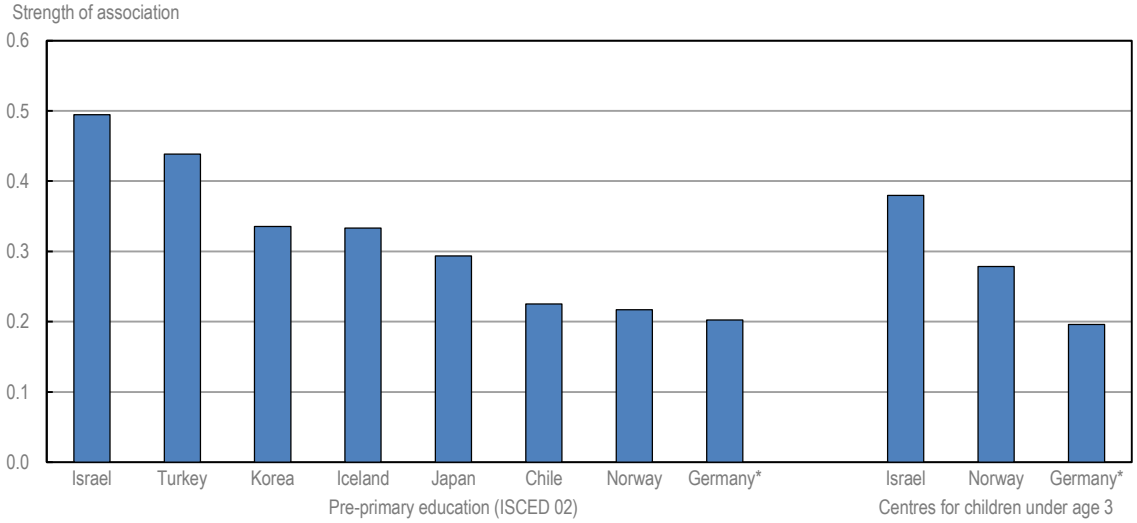
Source: Information provided by the national authorities.

Quality of the interactions with children

Staff well-being can have an impact on staff engagement with the work, and in particular, on the quality of their interactions with children or process quality. A large body of research, mainly in the school context, has investigated the relationships between teachers' sense of self-efficacy on the one hand and teachers' classroom practices and students' achievement on the other. Teachers who feel confident they can do their work may be more likely to have positive interactions with children and be able to support their development. While studies based on self-reported measures of self-efficacy and of teaching practices generally find a strong link, studies focusing on an external measure of teaching effectiveness have found a small, but also positive, relationship (Klassen and Tze, 2014[31]).

TALIS Starting Strong provides opportunities for linking staff's self-efficacy to their practices with children. Practices that staff use with children as part of the target group to adapt to their individual needs and interest (adaptive practices) can be linked to a scale of staff self-efficacy in supporting child development that groups together several questions on self-efficacy related to staff supporting children's development, learning and well-being (see Table 3.3 and Table 3.4).[1] The use of adaptive practices is related to the self-efficacy scale in all countries and for both levels of education. The association is particularly strong in Israel and Turkey (Figure 3.18).

Figure 3.18. Strength of association between use of adaptive practices and self-efficacy



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Results based on OLS regression models that regress the scale of adaptive practices on the scale of staff's self-efficacy. All results are statistically significant at the level of 5%. Control variables at staff level include: educational attainment, years of experience in early childhood education and care, type of contract, working hours, and role. Control variables at centre level include: location, type of management, number of children, staff-child ratio and concentration of disadvantaged children. See Annex B for more details on the variables included in the model.
Countries are ranked in descending order of the strength of association with self-efficacy in working with a diversity of children.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.33.

StatLink https://doi.org/10.1787/888934207044

High levels of stress can also have an impact on staff interactions with children. Results from the first volume of TALIS Starting Strong show that in pre-primary settings in Iceland and Israel, staff who report more stress from having too many children in the classroom/playgroup/group report using fewer adaptive

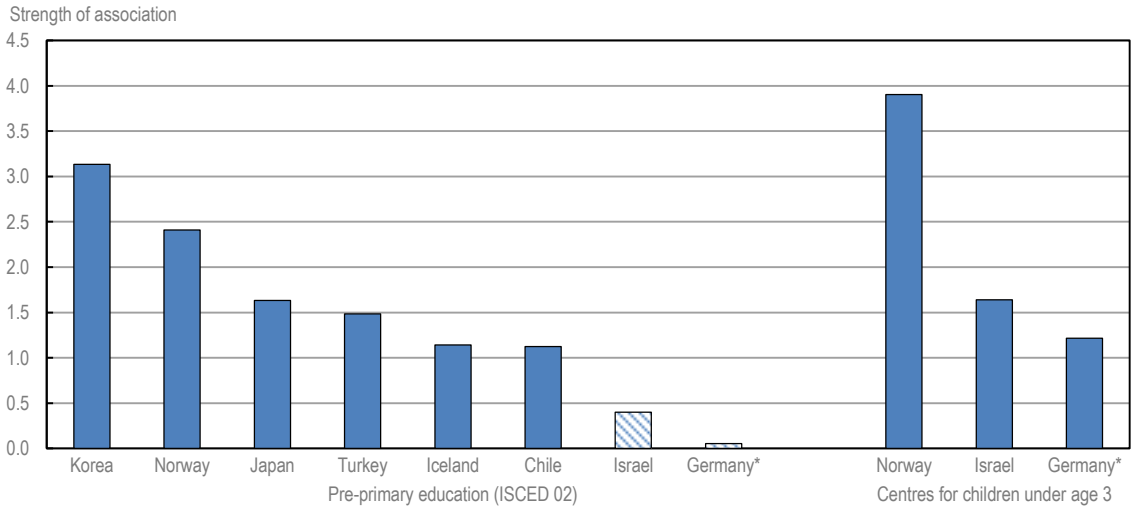
practices (OECD, 2019[1]). However, this relationship is not found for all countries. No strong association appears when linking other sources of stress to adaptive practices.

Quality of the interactions with parents or guardians

With parents being the first caregivers and educators of their children, interactions between children and parents are at the core of children's learning, development and well-being and ECEC staff can play a role in these interactions. TALIS Starting Strong asks staff to indicate the extent to which they engage with parents/guardians at the ECEC centre through a number of practices that can be grouped into one single indicator (OECD, 2019[1]).

Social well-being, such as the extent to which staff feel valued by parents, can be related to their practices used with parents. An analysis based on data from the survey indeed finds that staff who feel more valued by parents also report a higher level of engagement with parents, which can also reflect that staff who engage more with parents also feel more valued by them (Figure 3.19). This is the case for all countries except Germany and Israel at the pre-primary level and for all countries for centres for children under age 3.

Figure 3.19. Strength of association between use of practices to engage parents and guardians and feeling valued by parents



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Results based on OLS regression models that regress the index of practices to engage parents and guardians on staff feeling valued by parents. Results that are not statistically significant at 5% are indicated by the patterned bars. Control variables at staff level include: educational attainment, years of experience in early childhood education and care, type of contract, working hours, and role. Control variables at centre level include: location, type of management, number of children, staff-child ratio and concentration of disadvantaged children. See Annex B for more details on the estimation and the variables included in the model.
Countries are ranked in descending order of the strength of association.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.3.34.

StatLink https://doi.org/10.1787/888934207063

An equity focus on staff working conditions and well-being

Results from the first volume of TALIS Starting Strong and Chapter 2 of the current volume suggest that the allocation of staff according to their educational and training profiles does not reinforce the possible challenges associated with increasingly diverse groups of children in ECEC settings. This is a reassuring result, but inequalities can build up in various ways and other sources of inequalities need to be investigated. If staff's working conditions and well-being vary across centres according to certain characteristics, like the composition of children in centres, then some centres will have difficulties attracting or retaining staff or delivering high-quality ECEC.

TALIS Starting Strong data provides an opportunity to investigate the extent to which staff working conditions and well-being vary with the characteristics of children and ECEC centres. As in Chapter 2, two indicators of the characteristics of children can be considered: the concentration of children from socio-economically disadvantaged homes and of children whose first language is different from the language(s) used in their ECEC centre. In both cases, comparisons of staff working conditions can be made between centres where the percentage of children in the categories is less than or equal to 10%, or more than 10%.

There are no systematic differences in staff's working conditions according to the composition of children in the centre as underlined by Table 3.12. However, in Iceland, staff work longer hours and are less satisfied with their salary in centres with a larger diversity of children. Pre-primary staff in Germany, Israel and Turkey spend a smaller percentage of their time with children in centres with a larger diversity of children. In Germany and Turkey, a smaller percentage of time spent with children is related to stress from administrative work (see Table 3.9). In Israel (pre-primary), staff in centres with a larger diversity of children report more need for support from leaders. These are cases that should attract policy attention as these could be reasons for staff to prefer working in centres with a smaller diversity of children.

Table 3.12. Differences in staff working conditions and stress according to the composition of children in early childhood education and care centres

Statistically significant differences in staff working conditions and stress related to the composition of children in ECEC centres

	Hours worked by staff working full time		Percentage of time staff spent working with children		Percentage of staff satisfied with salary		Percentage of staff who need more support from their ECEC centre leader		Percentage of staff stressed by a lack of resources	
	Difference by composition of children in the ECEC centre									
	Socio-economic background	Children's first language	Socio-economic background	Children's first language	Socio-economic background	Children's first language	Socio-economic background	Children's first language	Socio-economic background	Children's first language
Pre-primary education (ISCED 02)										
Chile									+	
Germany*				-						+
Iceland	+				-					
Israel			-				+		+	
Japan										
Korea										
Norway										
Turkey				-					-	
Denmark**										
Centres for children under age 3										
Germany*										
Israel				+	+					
Norway									+	
Denmark**										-

+ Positive difference (increases with a larger diversity of children)
- Negative difference (decreases with a larger diversity of children)
Difference is not significant
Missing values

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.

Notes: Differences in a selection of indicators of staff working conditions between staff in ECEC centres with a high share (11% or more) of children from socio-economically disadvantaged homes or whose first language is different from the language(s) used in the ECEC centre and staff in centres with a low share (less than 11%) of these children. Indicators of working conditions are: 1) average weekly hours worked by staff working full time; 2) average percentage of time staff spend working with children; 3) percentage of staff who "agree" or "strongly agree" with the statement "I am satisfied with the salary I receive for my work"; 4) percentage of staff who "agree" or "strongly agree" with the statement "I need more support from my ECEC centre leader"; and 5) percentage of staff who indicate that "a lack of resources" is "quite a bit" or "a lot" a source of stress. Missing values are due to too small a sample size.

Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Tables C.3.35-C.3.39.

StatLink https://doi.org/10.1787/888934207310

TALIS Starting Strong also allows exploring whether staff are more stressed by a lack of resources in centres with a larger diversity of children. In Chile, Israel (pre-primary) and Norway (centres for children under age 3), staff in centres with a larger share of children from socio-economically disadvantaged homes report more stress due to a lack of resources and in Germany (pre-primary) this is the case for staff in centres with larger share of children whose first language is different from the language(s) used in the centre.

In some places, the results suggest that resources are being allocated to support staff's working conditions in centres with a greater diversity of children. In Israel in centres for children under age 3, staff in centres with a larger linguistic diversity of children spend a greater percentage of their time with children, which could suggest that they receive more support for tasks to be performed without children. And in centres with a larger share of children from socio-economically disadvantaged homes, staff are also more satisfied with their salary. In Denmark (centres for children under age 3, with low response rates) and Turkey, staff in centres with a larger diversity of children report less stress due to a lack of resources.

In addition to the composition of children, ECEC centres vary according to a number of characteristics that can lead to differences in resources. These characteristics include geographical location, size of the centre and type of management (public versus private). Lack of resources at centres can make it more difficult for staff to perform their work. If staff in centres with a greater lack of resources have worse working conditions, they may be reluctant to work in these centres. However, if other working conditions are better in centres with a lack of resources, this may to some extent compensate for the difficulties of working in a centre lacking resources.

The survey asks leaders whether a shortage of various types of resources hinders the centre's capacity to provide a quality environment for children's development, well-being and learning. These items can be combined into two main indicators of shortages: material and human resources. Staff's working conditions can thus be analysed according to the availability of both material and human resources (Table 3.13).

Staff in centres with more limited resources spend less time with children in Japan and more time in Turkey. Pre-primary staff in Chile and Turkey and staff working with children under age 3 in Israel report a need for more support from leaders in centres with more limited resources. Apart from these cases, working conditions do not appear to be strongly linked to the level of ECEC centres' human and financial resources. However, staff in centres where leaders report a lack of resources also report being stressed by the lack of resources in Chile, Germany and Israel (both levels of education), Iceland, and Korea.

Overall, these results suggest that differences between centres in terms of the composition of children or the availability of resources are associated only to a limited extent with less favourable working conditions. These results also suggest that staff working in more challenging centres are generally not compensated with higher salaries, shorter working hours or more support from their leaders.

Table 3.13. Differences in working conditions and stress according to early childhood education and care centres' shortages of material and human resources

Statistically significant differences in staff working conditions and stress related to shortages of material and human resources

	Hours worked by staff working full-time		Percentage of time staff spent working with children		Percentage of staff satisfied with salary		Percentage of staff who need more support from their ECEC centre leader		Percentage of staff stressed by a lack of resources	
	Difference by shortages of resources available at the ECEC centre									
	Material resources	Human resources	Material resources	Human resources	Material resources	Human resources	Material resources	Human resources	Material resources	Human resources
Pre-primary education (ISCED 02)										
Chile							+	+	+	+
Germany*									+	+
Iceland								+	+	+
Israel						-			+	+
Japan								-		
Korea										+
Norway										
Turkey			+	+				+		
Denmark**										
Centres for children under age 3										
Germany*									+	+
Israel			+				+	+	+	+
Norway										
Denmark**										

+ Positive difference (increases with limited resources)
- Negative difference (decreases with limited resources)
Difference is not significant
Missing values

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.
Notes: Differences in a selection of indicators of staff working conditions between staff in ECEC centres with shortages of material or human resources and staff in centres with no shortages of material or human resources. Indicators of working conditions are: 1) average weekly hours worked by staff working full time; 2) average percentage of time staff spend working with children; 3) percentage of staff who "agree" or "strongly agree" with the statement "I am satisfied with the salary I receive for my work"; 4) percentage of staff who "agree" or "strongly agree" with the statement "I need more support from my ECEC centre leader"; and 5) percentage of staff who indicate that "a lack of resources" is "quite a bit" or "a lot" a source of stress. Indices of human and material resources are derived from a question to ECEC centre leaders with multiple items measuring leaders' perceptions of potential factors hindering the provision of a quality environment for children's development, learning and well-being. 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 needs. 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). See Annex B for more information.
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Tables C.3.40-C.3.44.

StatLink https://doi.org/10.1787/888934207329

Policy implications and conclusions

This chapter pointed to several policies that can have an impact on staff's working conditions and support their well-being:

1. Setting the conditions to ensure that all staff continue to learn and develop their skills throughout their careers in several ways, including both formal and informal learning. This is discussed in Chapter 2.
2. Fostering the development of high-quality leadership. Leadership can help staff in their daily work and buffer several sources of stress. High-quality leadership is also crucial to help staff take on more responsibilities and develop skills, learn from others and collaborate to increase their performance at work. Leadership is discussed in Chapter 4.
3. Raising the status and reward of the profession by ensuring that staff's salaries are aligned with their responsibilities and better defining career progressions in the ECEC sector.
4. Better designing regulations around working time to ensure that staff have the time to perform the variety of tasks that are under their responsibilities.

The last two policy pointers are discussed in this section.

Salaries and career progression

Salaries and opportunities for career progression are important rewards for the efforts of ECEC staff, mitigate sources of stress, and may help improve job satisfaction and retention. Given the fact that the work of teachers (or of staff with more pedagogical responsibilities) in both pre-primary and primary education levels is important and requires skills, knowledge and expertise, educational requirements and salaries could be better aligned. If educational requirements are similar but salaries are different, one sector would benefit at the expense of the other. In some countries (Chile and Turkey), educational requirements and salaries are the same for pre-primary and primary teachers at the beginning and end of their careers, which can be a good way to similarly attract good candidates to both levels of education (Figure 3.20 and Table 3.14). In Korea, salaries in public ECEC settings are the same, but the minimum qualification level for teachers is lower for pre-primary than for primary teachers. In Norway, both salaries and educational requirements are slightly lower for pre-primary staff. In Denmark, the qualification requirements are the same but salaries are lower in pre-primary education, which could make candidates prefer primary to pre-primary education.

Figure 3.20. Pre-primary and primary staff statutory salaries at different points in staff careers

Annual statutory salaries of staff in public institutions based on typical qualifications at different points in staff careers, in equivalent USD converted using purchasing power parity, 2019

Note: Data are not available for Germany and Japan for pre-primary education.
Source: OECD (2020[32])], *Education at a Glance 2020: OECD Indicators*, https://doi.org/10.1787/69096873-en.

StatLink https://doi.org/10.1787/888934207082

Table 3.14. Minimum qualification level for teachers, 2019

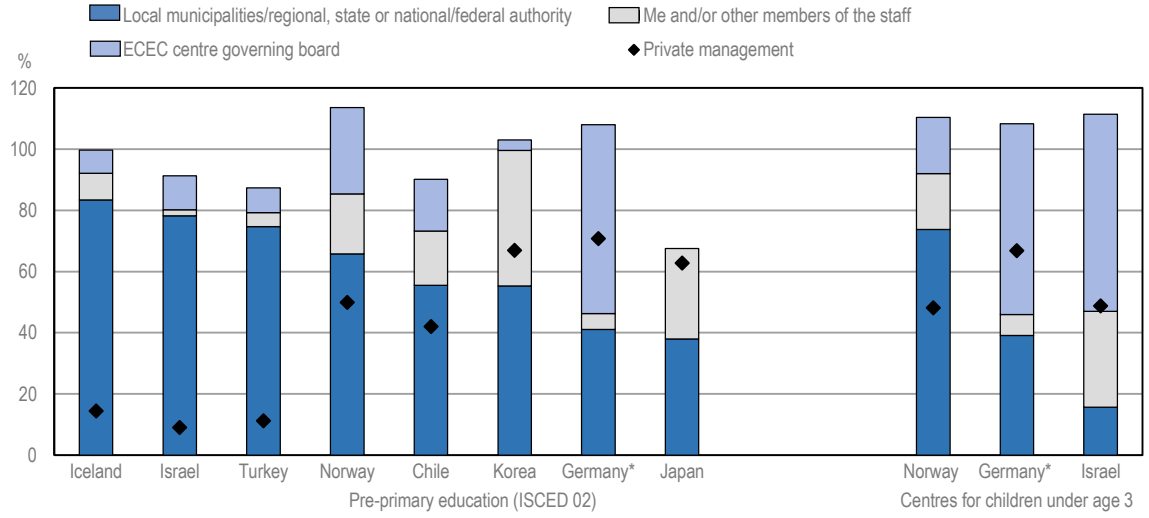
	Pre-primary	Primary
Chile	ISCED 6 (bachelor's degree)	Identical
Denmark	Professional Bachelor s Degree of Social Education (ISCED 6)	Identical
Germany	Qualification of kindergarten teacher training (3 years) with programme at trade and technical schools (ISCED Level 6)	Master of Education or equivalent (ISCED 7 or 8) plus preparatory service (12-24 months)
Iceland	Master's of Education (ISCED 7)	Identical
Israel	Bachelor of Arts (ISCED 6), teaching certificate and teaching traineeship	Identical
Japan	Educational personnel certificates which are defined by the Education Personnel Certification Act	Identical
Korea	Teaching certificate with a major in early childhood education and pedagogical training at ISCED 5	Teaching certificate with a major in primary education and pedagogical training at the University of Education (ISCED 6)
Norway	Bachelor's degree (3 years) – ISCED 6	4 years of education (bachelor's degree) – ISCED 6[1]
Turkey	Bachelor's degree (ISCED 6) in the relevant field, obtained from a faculty of education	Identical

1. As of 2016, the teacher education for primary is a master degree (5 years, ISCED 7) but it is still possible to be employed with the old programme (4 years, ISCED 6).
Source: OECD (2020[32]), *Education at a Glance 2020: OECD Indicators*, https://doi.org/10.1787/69096873-en.

In countries with gaps between salaries and educational requirements in pre-primary and primary education, governments can aim to progressively align both the salaries and the educational requirements of the two sectors. However, governments can generally only influence salaries for staff in publicly managed centres. Between 10% of pre-primary centres in Israel and 70% in Germany are privately managed, which is reflected in the ECEC leaders' responsibility to establish staff salaries, which is more frequently the case in most centres in Germany, Japan and Korea than in Iceland, Israel (pre-primary) and Turkey, where most centres are publicly managed (Figure 3.21). In Japan, Korea and Norway, where a large percentage of centres are privately managed, there are differences in staff's satisfaction with salary according to the type of management (Table C.3.1). Staff in privately managed centres are more satisfied with their salary than those in publicly managed centres in Japan and Norway (for centres for children under age 3), while they are less satisfied in Korea. These findings point to the need to find policy levers to harmonise staff's working conditions across settings to avoid differences in quality from emerging between settings according to the type of management.

Figure 3.21. Authority in charge of establishing early childhood education and care staff's salaries

Percentage of leaders who report that the following authority has significant responsibility for establishing ECEC staff's salaries



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** In Japan, the ECEC centre governing board category does not apply, but refers to incorporated/social institutes, following a national adaptation of the questionnaire.
Notes: The total within each country can exceed 100% as leaders were able to choose more than one option of who has significant responsibility. *Countries are ranked in descending order of the percentage of leaders who report that local municipalities/regional, state or national/federal authority has significant responsibility. .*
Source: OECD (2019[16]), *TALIS Starting Strong 2018 Database,* http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm.

StatLink https://doi.org/10.1787/888934207101

In addition to conditions at the beginning of their careers, progression along careers is also important to attract and retain the workforce. Salary progression for ECEC teachers is limited in Denmark, Iceland, Norway and Turkey. In the first three countries, satisfaction with salary remains low across ages and decreases with age in Turkey (Table C.3.1). In contrast, satisfaction with salary increases with age in Korea with a broader salary progression. Higher salary progression can help staff remain engaged with the profession and feel that their efforts are rewarded, but it should also go with evolving responsibilities.

Career progressions need to include both vertical and horizontal transitions. Vertical transitions involve increasing responsibilities and, for instance, changes from assistants to teachers or teachers to leaders. The recognition of skills acquired on the job through formal systems can facilitate such changes, especially when the minimum educational requirements are not the same across roles. Horizontal transitions could involve, for instance, specialisation in certain tasks along the professional career. For instance, assistants or staff who mostly work with children could be involved in relationships with parents. Staff with limited responsibilities with children can play a greater role with small groups of children. Teachers can be involved in some leadership responsibilities, shared with the leader or other staff (see Chapter 4). Policies can support these progressions by developing clear competency frameworks for various roles that are adapted to the organisation of the ECEC sector.

Ensuring that staff's working time reflects the diversity of their tasks

ECEC staff's work includes a variety of responsibilities and activities that go beyond working directly with children. The relative time staff spend working without children varies greatly across and within countries (see Figure 3.5). In countries and centres with greater amounts of time spent without children, overall working time is more (e.g. in Chile, Japan and Korea).

Large shares of staff report high levels of stress from work with no contact with children, such as documenting children's development and learning, or administrative work (see Table 3.1 and Table 3.2.) and in a number of countries, staff who are more stressed by these tasks spend more time on them (see Table 3.8 and Table 3.9). In contrast, in Norway, a small percentage of staff report being stressed from their workload from work duties that do not involve contact with children and a small number of hours are dedicated to work without children.

These findings point to the need to ensure that staff can devote sufficient time to individual planning, collaboration with colleagues or parents, documenting children's development, and administrative tasks (Box 3.2). In several countries, staff are given protected time for these activities (Table 3.15).

Developing frameworks for staff's working time can prevent excessive workloads, especially if frameworks/guidelines are aligned with the breadth of staff's professional roles and include some flexibility to enable leaders to effectively organise work time within their centres with some autonomy. Policies can also provide additional support to staff with specified roles and responsibilities, including tasks without children, for instance by organising complementarities between staff members, such as teachers working in tandem with assistants. Several other policies can also help mitigate staff stress resulting from responsibilities beyond the work with children. They include policies that will expand staff's resources to perform their work, such as high-quality leadership, limited size of the group of children staff are working with, education and training to help staff cope with these responsibilities, and aligned salaries. These policies are particularly important for staff with responsibilities for duties not involving direct contact with children.

Box 3.2. Approaches to the organisation of early childhood education and care staff's working time

Norway

In Norway, early childhood education and care (ECEC) staff work 37.5 hours per week. For ECEC teachers, four hours of this time per week are dedicated to planning pedagogical activities.

In addition, the national curriculum (Framework Plan for the Content and Tasks of Kindergartens) requires ECEC staff to spend time reflecting on their work. How this is practically applied depends on the setting. Other activities such as collaborating with colleagues and other stakeholders, and completing administrative work are mentioned but not further specified in the framework plan and are therefore organised depending on the setting.

Each ECEC centre is required to develop an annual plan outlining among other things the way the learning areas – specified in the Framework Plan for Kindergartens – are adapted to educational activities. ECEC centres, with few exceptions, have set aside five planning days per year for professional and pedagogical development for all staff. ECEC centres are closed these days. The planning days are regulated by the main agreement between employers and employees' organisations, both in the public and private sectors.

Turkey

In Turkey, working hours are relatively short compared to other countries, but vary between centres.

Teachers in public pre-primary settings are given protected time, separate from their contact time with children, for several activities, including planning activities for children. In large centres, this time allocation is enabled by having two groups of children in the same classroom, with two different teachers working with the two groups of children, one in the morning and one in the afternoon. In addition, time allocated to nutrition and sleep time for the younger children provides teachers with additional time to carry out their other responsibilities.

Japan

Regular working hours of full-time ECEC staff in publicly managed centres is 38.75 hours per week, but there are no official statistics that capture working time outside of ECEC centres, including time working at home. Some staff may work overtime since they are responsible for many tasks, including planning, preparation, documentation, newsletters to parents and administrative work. In particular, novice staff have longer working hours than experienced staff (Table C.3.7).

In order to reduce staff's work burden, some initiatives try to secure some time for work without children. In addition, policies have been implemented (e.g. subsidies) to promote the introduction of ICT and alleviate the administrative burden. Other policies considered include the allocation of assistants to staff rearing children.

Source: Information provided by the national authorities.

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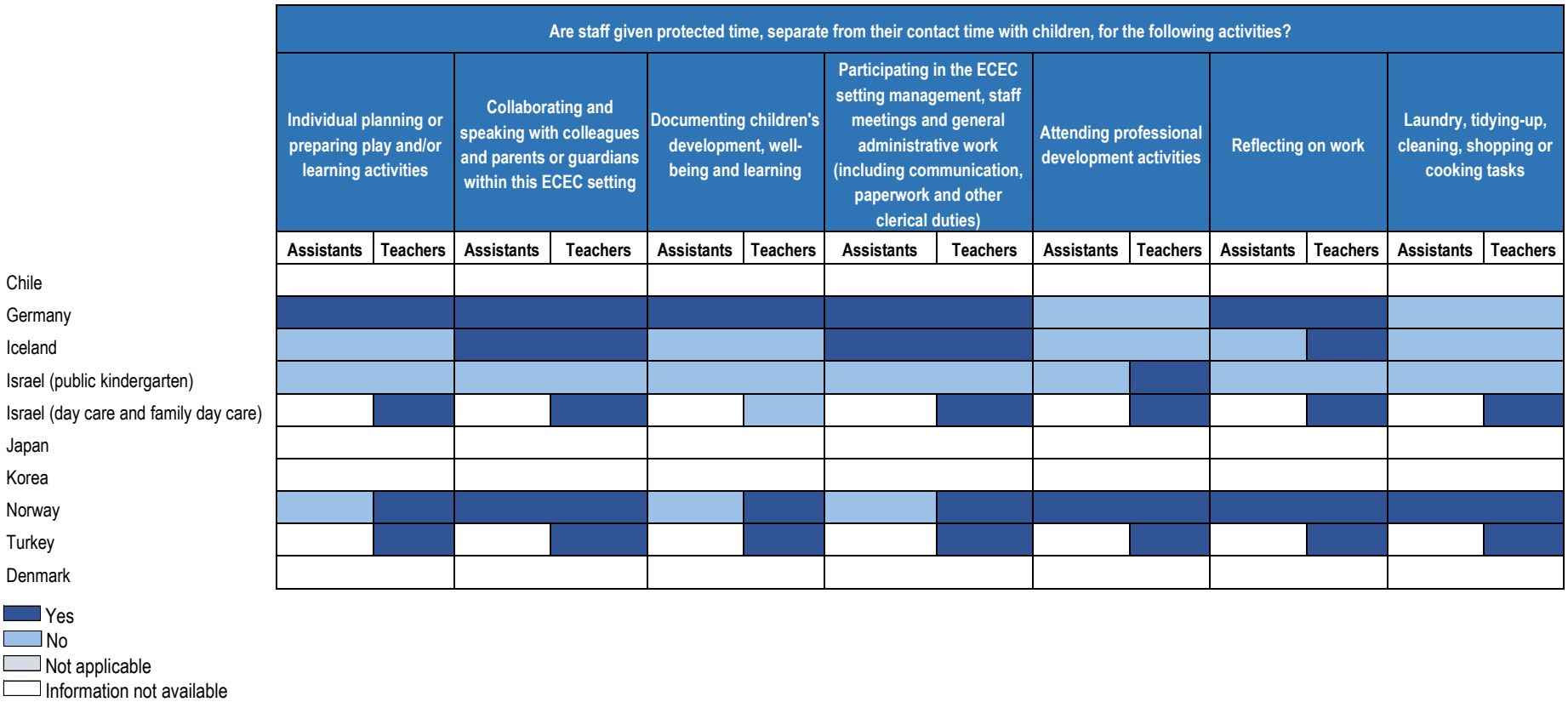
Table 3.15. Regulations on the allocation of early childhood education and care staff's working time across tasks

Legal requirements or common practices



Notes: For Germany at the federal level, information applicable to ECEC centres for children under 3, all age groups 0-6 and for children over 3-6. No information on family day care or pre-primary classes. Cleaning is done externally. Cooking and shopping is organised internally and can be supported by parent initiatives. For Iceland, information applicable to preschool. For Israel, information is applicable to public kindergartens (ISCED 02). Information not available for private and ultra-orthodox kindergartens and for centres for children under age 3. Individual planning is expected to be done at home and documenting children's behaviour is part of their working hours with children. For Chile, Denmark (kindergarten, nursery, home-based day care and integrated day care, with low response rates), Japan (kindergarten, day care and integrated centres for early childhood education and care) and Korea, information is not available. For Norway, information is applicable to kindergartens and family kindergartens. Collaboration, documenting, participating in management, attending professional development and laundry tasks are further dependent on setting. For Turkey, information includes all settings (independent kindergarten, nursery classroom, practice classroom and special education preschool). The results for assistants cannot be reported in Israel in centres for children under 3, Japan and Turkey.
Source: OECD (2019[33]), "OECD Network on Early Childhood Education and Care: Quality beyond Regulations survey", *Internal document*, OECD, Paris.

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Note

1 The staff scale of self-efficacy (S1SECD) is based on 7 items from Q24 of the staff questionnaire requiring staff to report their level of confidence in various tasks related to supporting children's development, learning and well-being. The scale reached metric invariance for the target populations at both pre-primary (ISCED 02) level and in centres for children under age 3. For more information, see Annex B.

4 Leadership and management in early childhood education and care centres

This chapter seeks to understand what leadership looks like in early childhood education and care (ECEC) centres across a range of settings and contexts. Based on the analysis of data from TALIS Starting Strong, it starts by describing the responsibilities, functions and structures of centre leadership. Following an analysis of associations between leadership and other outcomes, such as staff's professional growth, satisfaction and well-being, the chapter examines leadership development and leaders' working conditions. The chapter concludes with an equity perspective on leaders' engagement in their different functions, and ideas for policy to make the most of centre leaders in the ECEC sector.

Key messages

- Across almost all countries participating in TALIS Starting Strong, administrative leadership accounts on average for at least 30% of leaders' time in early childhood education and care (ECEC) centres. Pedagogical leadership makes up at least 25% of leaders' time on average in Chile, Denmark (with low response rates), Iceland, Japan and Korea at pre-primary level, and in centres for children under age 3 in Israel.
- Centre size helps explain differences in leaders' engagement in their functions. At the pre-primary level, leaders of larger centres spend more time on administration in Denmark (with low response rates), Germany, Iceland and Norway, and in centres for children under age 3 in Germany. At the pre-primary level in Chile, Germany and Turkey, and in centres for children under age 3 in Norway, leaders in larger centres spend more time on pedagogical leadership.
- Leaders whose initial preparation focused on early childhood and/or pedagogical leadership report engaging more frequently in pedagogical tasks in Israel, Japan, Korea and Turkey at the pre-primary level, and in Germany in centres for children under age 3. By contrast, centre leaders' engagement in pedagogical tasks varies little by their qualifications or experience.
- Centre engagement with parents differs significantly across countries. Centres engage frequently informally with parents or guardians in Chile, Iceland and Japan at the pre-primary level, and in Denmark (with low response rates) and Norway at both levels of education. In Chile and Japan, formal communication is also frequent.
- According to both leaders and staff, ECEC centres on average provide opportunities for staff to participate in decision making. However, in Chile, Japan and Norway, in particular, pre-primary staff agree to a lesser extent that staff can participate in the centre's decision making.
- From the perspective of centre leaders, distributed leadership and pedagogical leadership tend to go hand in hand. In six countries, pre-primary leaders who "strongly agree" that their centre provides staff with opportunities to actively participate in decision making also show stronger levels of pedagogical leadership relative to leaders who only "agree" with the statement.
- While leaders are highly satisfied with their jobs overall, they report relatively low satisfaction with their salaries, in particular at the pre-primary level in Germany, Israel, Iceland, and Japan, and in centres for children under age 3 in Germany and Israel. Satisfaction with salaries is higher among pre-primary leaders in Chile and Turkey, and among leaders of both pre-primary centres and centres for children under age 3 in Norway.
- Staff who perceive more opportunities for participating in centre decisions tend to engage more frequently in professional collaborative practices, and to report higher levels of job satisfaction. Staff who "strongly agree" that the centre leader encourages all staff to have a say in important decisions are at least twice more likely to report that they enjoy working at their centre, to recommend their centre as a good place to work or to be satisfied with their job, relative to staff who merely "agree".
- Centre leaders' pedagogical leadership is positively associated with staff attitudes and practices linked to process quality in ECEC settings. Across countries, staff sense of self-efficacy for adapting their work to individual child needs is strongest among staff who "strongly agree" that their centre leader ensures that staff feel responsible for the children's development, well-being and learning.

Introduction

Leadership is key to supporting and sustaining quality in early childhood education and care (ECEC) settings and for creating a stimulating environment for both staff and children. Effective leadership establishes a set of organisational conditions that positively influence process quality, working conditions and staff engagement in continuous professional learning and growth (Melhuish et al., 2006[1]; Muijs et al., 2004[2]). Thereby, effective leadership fosters children's learning, development and well-being (Douglass, 2019[3]). As found in Chapter 3, support from leaders can mitigate stress that may emerge from various areas of staff's work, such as accommodating children with special needs, working with a large group of children, documenting children's development and administrative work.

The first volume of the Starting Strong Teaching and Learning International Survey (TALIS Starting Strong 2018) provided a first picture of the main characteristics of leaders in ECEC settings and their views on the sector (OECD, 2019[4]),[1] describing the demographic and educational background of centre leaders, as well as their perceptions of the quality of their work environment. Among others, the first volume examined sources of stress, barriers to effective leadership and centre leaders' training for their job. Many questions, however, remain in understanding what ECEC centre leadership looks like across diverse settings and contexts.

The objective of this chapter is to learn more about leadership in ECEC centres and its relationship with a centre's vision and culture, processes and organisation as well as staff professional learning and working conditions, all of which are in turn related to centre's process quality. The chapter also seeks to shed light on how policy can best foster and support effective leadership. TALIS Starting Strong provides information on multiple aspects of centre leadership: the responsibilities of leaders for different decisions; the time leaders spend on different tasks; their interactions with staff and the way they view their own leadership; and how staff perceive leaders on a number of dimensions. This chapter delves into the various aspects of centre leadership and discusses how they vary both across and within countries.

Following the literature, this chapter analyses leadership in the ECEC sector along two main dimensions: the functions (or roles) and the structures of leadership (Douglass, 2017[5]). The functions of leadership refer to the various tasks within ECEC centres that require leadership, such as administration and human resource management, but also guidance and support to staff with the content of their work, such as their pedagogical practices with children. The structures of leadership relate to the way leadership is exercised, either by a formal leader in a rather hierarchical way, or by other staff or actors who can participate in decisions in a distributive or shared manner.

This chapter aims to:

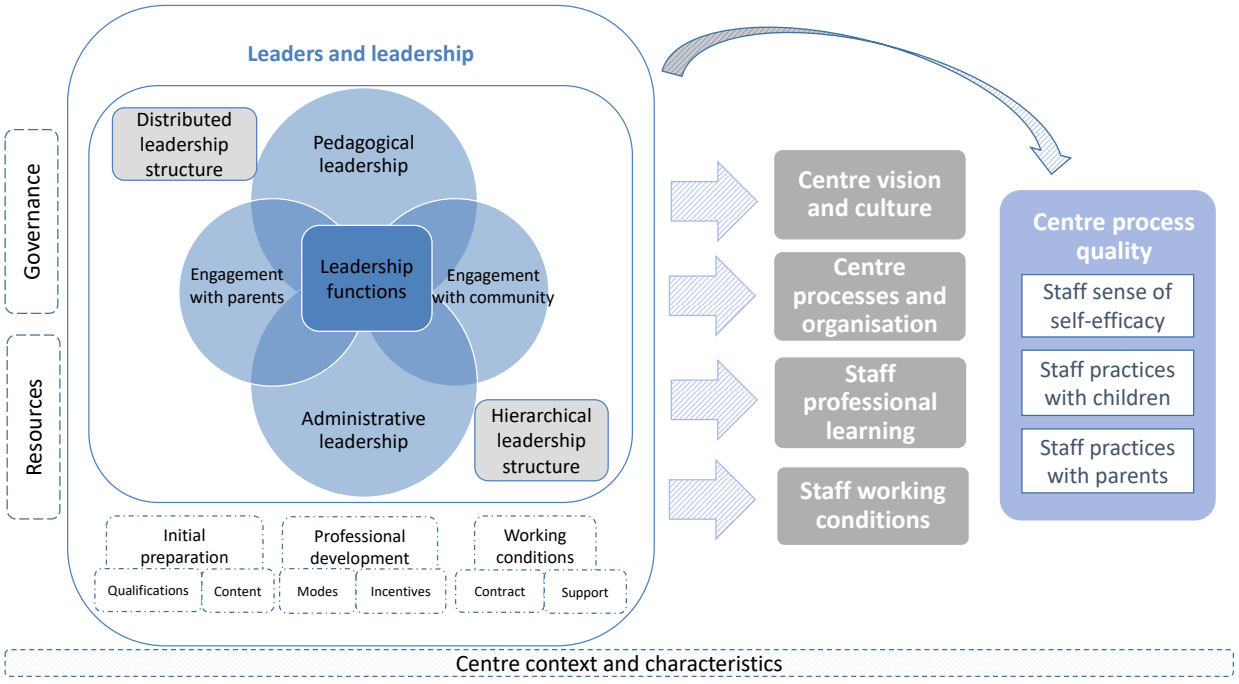
- characterise the main aspects of centre leadership in terms of responsibilities, functions and structures; analyse how they vary according to centre and leader characteristics; and examine how functions and structures relate to each other
- analyse how centre leaders foster the professional learning and growth of staff and create supportive working conditions for them
- analyse how different leadership functions and structures relate to staff's sense of self-efficacy and staff practices with children and parents at the centre level
- examine how leadership functions differ depending on the level of resources and the characteristics of the children across ECEC centres
- discuss policy implications and policy levers to strengthen centre leadership and to make the most of centre leaders in the ECEC sector.

Framework for analysis

Leadership has many different meanings. In essence, leadership is about influencing change, relationships or actions to achieve a shared purpose or goal for an organisation or a system (Douglass, 2019[3]). While formal job profiles and requirements differ across countries, centre leaders are typically expected to manage budgets and other resources, and to promote a quality learning environment, for example by facilitating professional collaboration among staff (Figure 4.1). As part of their many functions, centre leaders typically also interact with children themselves and may take part in learning and play. Together, the different functions require a broad range of leadership skills and competencies, from an understanding of children's learning and development to knowledge of staff and financial management.

Research defines ECEC leadership as encompassing two main broad functions: administrative and pedagogical. While administrative leadership refers, among others, to tasks related to the management of operations, strategic planning and staff management, pedagogical leadership is the leadership needed to support pedagogical processes through tasks such as promoting the implementation of curriculum and assessment, creating trusting relationships, and supporting the professional growth of staff (Douglass, 2019[3]). Long-standing research has stressed the importance of the pedagogical function, in particular (OECD, 2019[6]). However, leadership is always contingent upon the context of specific settings (Aubrey, Godfrey and Harris, 2012[7]), and more administrative and management-oriented tasks, such as building organisational routines, are at times, equally important (Liebowitz and Porter, 2019[8]; Grissom and Loeb, 2011[9]). For the ECEC sector, specifically, a study from South Africa found the quality of administrative leadership to be one of the main predictors of quality, before factors such as the child-staff ratio or staff qualifications (Biersteker et al., 2016[10]). In the United States, a study found that both pedagogical and administrative leadership are significantly correlated with the level of quality attained in ECEC centres (Dennis and O'Connor, 2013[11]).

Figure 4.1. Framework for the analysis of early childhood education and care centre leadership in TALIS Starting Strong



In addition to these two functions of administrative and pedagogical leadership, this chapter also considers two other functions following the conceptual framework of TALIS Starting Strong: 1) engagement with parents; and 2) engagement with the community and partnerships with other services (Sim et al., 2019[12]). Both aspects, and the co-ordination between different actors, appear to be particularly important for leadership in the ECEC sector to maximise opportunities for all children (Muijs et al., 2004[2]).

- Engagement with parents is a key part of process quality in ECEC centres, and has been shown to be strongly associated with children's later academic success, socio-emotional development and adaptation in society (OECD, 2011[13]; Sylva et al., 2004[14]; Van Voorhis et al., 2013[15]). Good communication between parents and ECEC staff is critical in enhancing the knowledge of ECEC staff about the children they work with and in ensuring the continuity of learning for children at home.
- Engagement with the community and partnerships with other services for children and their families can help provide a holistic approach to child development. Different services, such as formal ECEC providers, day care, health services and other child services, can work together to create a continuum of services that is reassuring for parents and beneficial for young children (OECD, 2011[13]). Co-operation between ECEC centres and other community services can also be fundamental for smoothing transitions between different early childhood settings and from early childhood education and care to primary school, both of which can influence children's school trajectories and lead to future positive outcomes (OECD, 2017[16]).

Of course, these different functions are not necessarily clear cut and specific tasks related to them may overlap. For instance, both administrative and pedagogical leadership functions include tasks related to the management of staff, be it on a more administrative or more pedagogical level. Similarly, tasks for engaging parents and the community are closely linked with pedagogical and administrative leadership.

These leadership functions may be structured in different ways. One can generally distinguish between two types of structures, although there is a continuum of structures between them. Functions can be exercised by a formal centre leader alone or may be distributed among a leadership team or shared with ECEC staff. For example, staff may lead staff development activities and family engagement efforts, or support curriculum development (Douglass, 2019[3]). Leadership therefore does not necessarily reside in a formal position or the authority of a single person. Rather, leadership can be practiced by different actors and be conceptualised as an organisational quality as well (Aubrey, Godfrey and Harris, 2012[7]; Spillane, Halverson and Diamond, 2004[17]). This is often referred to as distributed, shared, collective or relational leadership, in contrast to a hierarchical structure (Douglass, 2019[3]). This chapter analyses leadership along these two main structures.

Only a few studies have rigorously evaluated the impact of leadership on ECEC quality and/or outcomes for children (for a review, see Douglass (2019[3])). These studies suggest that leadership influences a set of practices that may have a positive impact on children's learning, development and well-being. Leadership can directly affect the quality of the interactions between staff, children and parents, for instance when leaders engage with parents in complement to the interactions between staff and parents. Leadership can also indirectly impact the quality of these interactions by supporting staff professional development, establishing a positive work climate, and creating structures to enable staff to collaborate and plan for improvement (OECD, 2018[18]; Dennis and O'Connor, 2013[11]; Lower and Cassidy, 2007[19]). Leaders may moreover have an impact on process quality through their own actions, but also by providing a range of supports for staff leadership (Sebastian, Allensworth and Huang, 2016[20]; Whalen et al., 2016[21]). These various links between leadership and process quality are studied in this chapter, as featured by the analytical framework.

To this end, different indicators have been developed for this chapter on the basis of the items available in the TALIS Starting Strong survey and questionnaire (Box 4.1).

Box 4.1. Analysing leadership functions and structures in early childhood education and care centres with TALIS Starting Strong

Centre autonomy

Autonomy indicators are based on leader reports on who has significant responsibility for tasks related to curriculum, policies, staffing and budgeting regarding their early childhood education and care (ECEC) centre. Leaders could select multiple options: "me and/or members of staff"; "centre governing board"; or "local, municipality/regional, state or national/federal authority". Staffing and budgeting items are grouped together under the category "resource autonomy"; policies and curriculum items are grouped under the category "pedagogical autonomy".

Two separate measures of centre autonomy were created to better understand the level of autonomy, that is how responsibilities for decisions regarding the ECEC centre rest within or outside the centre, and to give a sense of the range or scope of decisions that centre leaders are responsible for:

- ***Level of autonomy (for an individual task):*** This can take three values: 1) full autonomy (only leader and/or members of staff have significant responsibility); 2) partial autonomy (the leader and/or members of staff, plus the centre governing board and/or authority have significant responsibility); 3) no autonomy (only the centre governing board and/or authority have significant responsibility).
- ***Scope of autonomy (for a group of tasks):*** Classifying centres as having full autonomy in the majority of tasks related to either resources or pedagogy (i.e. full autonomy in at least three of the four respective tasks for each group).

Note that for Japan, the indicator of level of autonomy was calculated separately since the response categories were adapted to the national context. For more information, see Annex B.

Leadership functions

Administrative leadership

Administrative leadership is measured through:

- ***Leaders' time spent on administrative leadership:*** Leader reports about the percentage of their work time spent on administrative and leadership tasks and meetings, on average during the 12 months prior to the survey. This includes regulations; reports; budget; preparing for audit; responding to requests from district, regional, state or national officials; strategic planning; leadership and management activities such as developing ECEC centre improvement plans; and human resource and personnel issues such as hiring staff.
- ***Staff perception of administrative leadership:*** Level of staff agreement (on a four-point Likert scale) with the statements that: "the centre leader has professional relationships with staff"; and "the centre leader ensures that staff's performance is managed effectively".

Pedagogical leadership

Pedagogical leadership is measured through:

- ***Leaders' time spent on pedagogical leadership:*** Leader reports about the percentage of their work time spent on tasks such as meeting with staff to promote a quality learning environment, organising staff development programmes about new pedagogical approaches, child development, etc. on average during the 12 months prior to the survey.

- ***Leaders' engagement in activities related to pedagogical leadership:*** Leader reports about the frequency with which they engaged in 9 different pedagogy-related activities during the 12 months prior to the survey ("daily", "weekly", "monthly", "less than monthly", "never").

  Based on six of the nine response options, a scale of leader support for pedagogical learning (S1LEADS) was created. The items were chosen based on reliability and fit of the model. The scale reached metric invariance at both the pre-primary level and in centres for children under age 3 levels. For more details on the scale, see Annex B.

- ***Staff perception of pedagogical leadership:*** Level of staff agreement (on a four-point Likert scale) with the statements that: "the centre leader has a clear vision for this centre"; "the centre leader encourages co-operation among staff to develop new ideas in their practices"; "the centre leader ensures that staff take responsibility for improving their practices"; and "the centre leader ensures that staff feel responsible for the children's development, well-being and learning".

Engagement with the community

This leadership function encompasses two main dimensions:

- ***Centre co-operation with other child- or family-related services:*** Leader reports on the frequency with which the following activities take place at the centre ("daily", "weekly", "monthly", "less than monthly", "never"): communication with school teachers; communication with staff and/or leaders from other ECEC centres; co-operation with child, family or social services; collaboration with health-related services; consultation with child development specialists.

- ***Centre engagement with the community:*** Leader reports about the extent to which the following activities take place at the centre (on a four-point Likert scale): "the centre works with the local neighbourhood"; "the centre collaborates with local primary schools"; "the centre has excursions to outdoor areas, such as parks, forests, beaches or other nature areas".

Engagement with parents

Engagement with parents is measured through:

- ***Leaders' time spent on interactions with parents or guardians:*** Leader reports about the percentage of their work time spent on formal and informal interactions, on average during the 12 months prior to the survey.

- ***Centre communication with parents or guardians:*** Leader reports on the frequency with which the following activities take place at the centre ("daily", "weekly", "monthly", "less than monthly", "never"): informal communication with parents or guardians (e.g. informal conversations on children's development or activities) and formal communication with parents or guardians (e.g. attending parent-staff meetings).

Leadership structures

Distributed and hierarchical leadership

TALIS Starting Strong provides two measures of distributed and hierarchical leadership, that is, of the extent to which centre staff can participate in centre decisions alongside the centre leader or not:

- ***Leader perception of distributed leadership:*** Level of leader agreement (on a four-point Likert scale) with the statements that: "this centre provides staff with opportunities to actively participate in centre decisions"; "this centre has a culture of shared responsibility for centre issues"; "I take the important decisions on my own".

- ***Staff perception of distributed leadership:*** Level of staff agreement (on a four-point Likert scale) with the statement that: "the centre leader encourages all staff to have a say in important decisions".

For all items except "I take the important decisions on my own", high levels of leader or staff agreement signify distributed leadership structures and low levels of agreement hierarchical leadership structures. For "I take the important decisions on my own", low levels of leader agreement signify distributed leadership structures and high levels of agreement hierarchical leadership structures.

Responsibilities and autonomy of centre leaders

When considering the leadership and management of ECEC centres, it is important to have an understanding of centre leaders' responsibilities and autonomy. Leaders' level and scope of autonomy over key dimensions of management shape the organisation and operation of their centre. At the same time, the range of tasks that centre leaders are expected to fulfil, together with the supports and resources that they have available, such as secretarial staff, also influence the kind of competencies that are required from centre leaders and centre leaders' working conditions and effectiveness in fulfilling those tasks.

The first volume of TALIS Starting Strong highlighted the key role of centre leaders and/or other members of staff in shaping centre staffing and budgeting (OECD, 2019[4]). This section extends the analysis to consider a wider range of tasks (curriculum and policies, i.e. pedagogy, and staffing and budgeting, i.e. resources) and discusses how responsibilities are shared across actors. Leaders were asked who has significant responsibility for a number of tasks. This information is used to indicate whether centre leaders (and staff) have: full autonomy for a specific task; partial autonomy, i.e. sharing responsibilities with their governing board and/or responsible authority; or no autonomy for a task.

Based on this indicator of centre autonomy, centre leaders have considerably more influence over pedagogical tasks related to the curriculum or policy than for resource-related tasks, such as staffing or budgeting (Figure 4.2). Whereas more than 80% of centres at the pre-primary level, on average across participating countries, have full autonomy for choosing the materials/toys used or the activities that are offered to the children in their centre, this is only true for 46% of centres when it comes to appointing staff and for 35% when it comes to deciding on budget allocations within the centre. Establishing staff salaries, which is often part of wider collective bargaining agreements and processes, is the task over which centre leaders and/or other members of staff have the least influence.

Of course, there are differences between countries in the level of centre autonomy. In Denmark (with low response rates), Germany and Norway, for example, a comparatively large share of centre leaders at pre-primary level and in centres for children under age 3 share responsibilities with their provider, governing board or another authority for resource-related tasks, such as appointing or dismissing staff. In Chile and Turkey, a relatively high share of leaders report having no autonomy in some pedagogy-related tasks, such as deciding which activities are offered and which materials/toys are used (Table C.4.1.).

Figure 4.2. Level of autonomy of early childhood education and care centres for key tasks related to centre resources and pedagogy

Based on leaders' reports at pre-primary level, average across participating countries

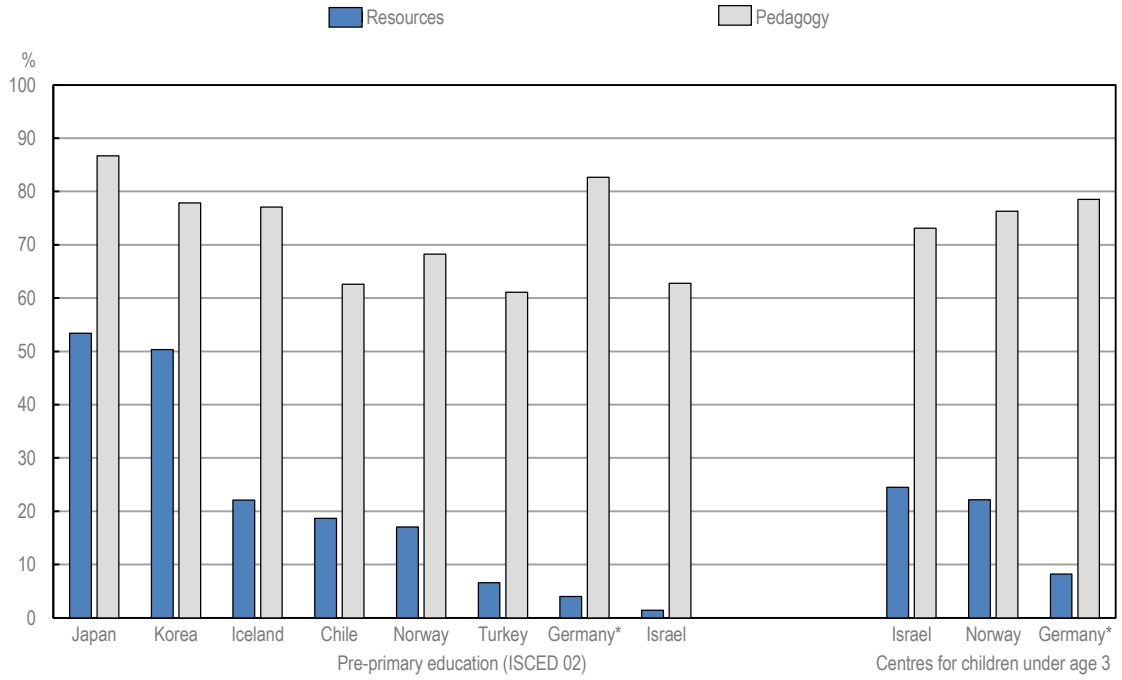
Note: For a description of the indicator, see Box 4.1.
Items are ranked in descending order of the percentage of full autonomy for centre leaders and/or members of staff for specific dimensions of decision making (curriculum, policy, staff, budget).
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.1.

StatLink https://doi.org/10.1787/888934207348

To get a better sense of the range of tasks leaders are responsible for, a separate indicator has been created. This indicator provides a measure of the scope of autonomy, by estimating the percentage of ECEC centres whose leaders and/or members of staff have full autonomy in the majority of tasks for resources and pedagogy. That is, the indicator shows the share of leaders with full autonomy in at least three of the four tasks related to resources and pedagogy, respectively (Figure 4.3). In terms of resource-related tasks, in Japan and Korea, at least one in two centre leaders report having full autonomy in the majority of tasks, while the same is true for about one in five centre leaders in Chile and Iceland. In terms of pedagogy-related tasks, more than 75% of pre-primary leaders in Germany, Iceland, Japan and Korea, as well as leaders of centres for children under age 3 in Germany and Norway have full autonomy in a majority of tasks. In Israel, a considerable difference can be observed between centre leaders at pre-primary level and in centres for children under age 3, which seem to have more autonomy for centre resources and pedagogy. This is likely related to split governance arrangements, as each sector is managed by a different authority.

Figure 4.3. Scope of autonomy for early childhood education and care centres for resources and pedagogy

Percentage of ECEC centre leaders who reported having full autonomy in the majority of tasks



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Note: For a description of the indicator, see Box 4.1.
Countries are ranked in descending order of the share of ECEC centre leaders having full autonomy in the majority of resource-related tasks.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.2.

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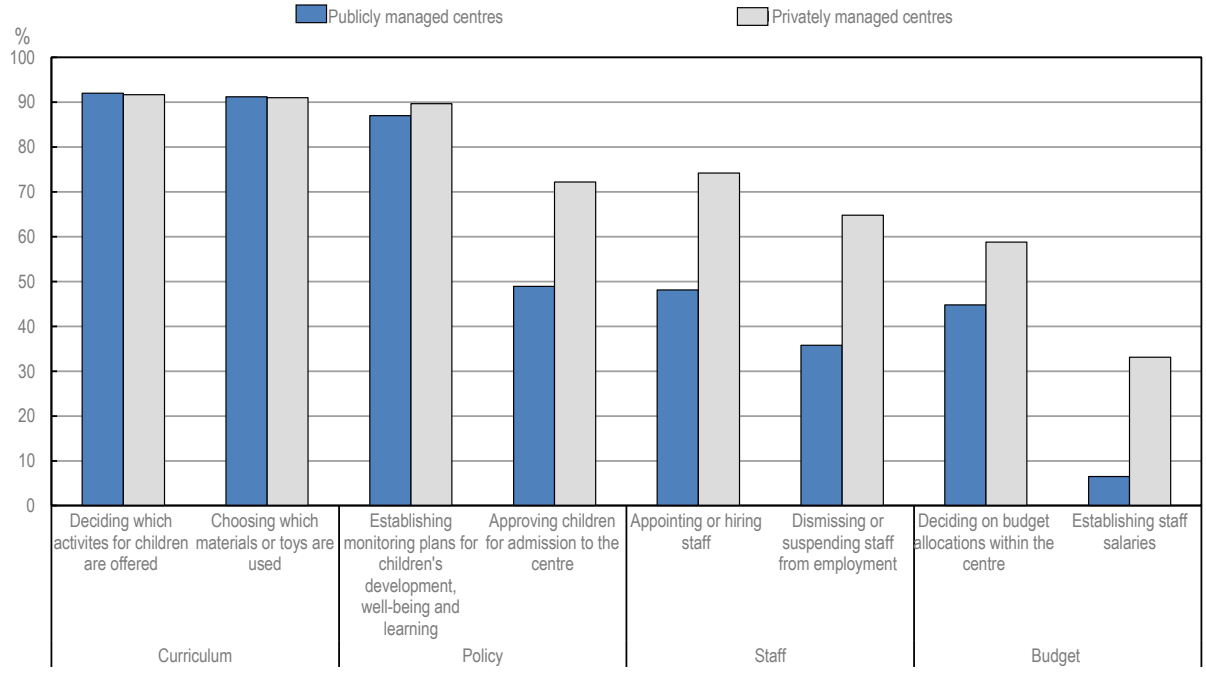
To examine differences in levels of autonomy between publicly and privately managed centres,[2] the following considers only whether centre leaders report having significant responsibility for a specific task or not, irrespective of the influence of other authorities over these tasks. This provides an aggregate measure for comparing levels of influence for centres and their leaders, which considers both full autonomy and partial autonomy. Leaders in privately managed centres report significantly higher levels of responsibility (whether alone or shared with others) for staff and budget-related tasks as well as for the admission of children to their centre (Figure 4.4). Responsibilities for choosing the materials/toys used or the activities offered to the children in their centre and for establishing monitoring plans for children's development, well-being and learning are similar across sectors and across participating countries.

Figure 4.4. Difference in leader responsibilities between publicly and privately managed early childhood education and care centres

Average percentage of ECEC centre leaders at pre-primary level who report they and/or other members of staff have significant responsibility for the following tasks



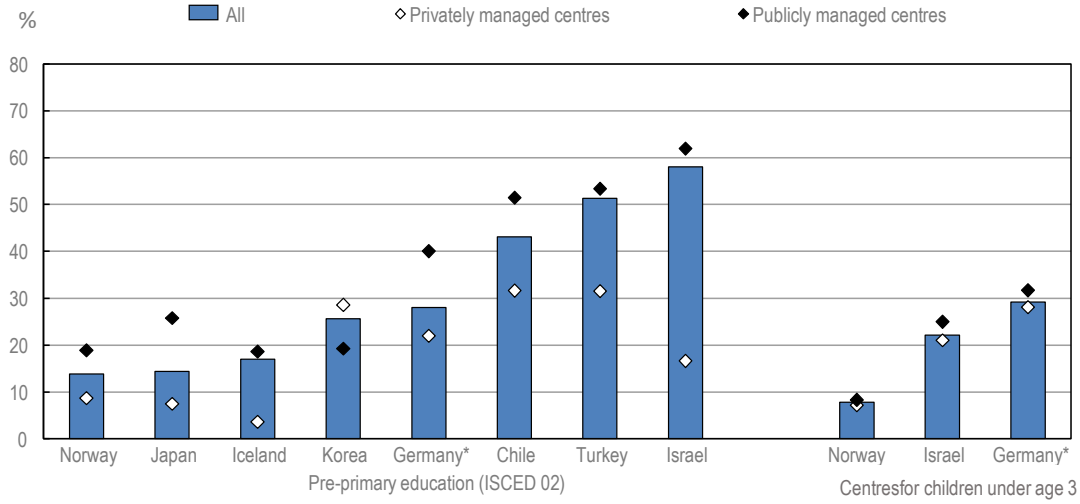
Items are grouped by dimension of decision making and, within each group, ranked in descending order of the share of leaders of publicly managed early childhood education and care centres who report that they and/or other members of staff have significant responsibility for the above tasks within the four areas of centre responsibility.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.3.

StatLink https://doi.org/10.1787/888934207386

When asked about their level of dissatisfaction with their level of influence over hiring staff, with the exception of Korea, leaders of publicly managed centres reported higher levels of dissatisfaction in all countries at pre-primary level (Figure 4.5). In Denmark (with low response rates) and Norway, however, this difference is not statistically significant. There are also no statistically significant differences in centres for children under age 3 in any participating country. In Israel and Turkey, at least one in two pre-primary leaders (publicly and privately managed centres) are dissatisfied with their influence over staff recruitment. In both countries, leaders report having low levels of autonomy in this particular aspect.

Figure 4.5. Leaders' dissatisfaction with their level of influence over the hiring of staff in early childhood education and care centres

Percentage of leaders who "agree" or "strongly agree" with the statement "I am dissatisfied with the level of influence I have over choosing the staff working in this centre"



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Countries are ranked in ascending order of the share of all ECEC centre leaders reporting they "agree" or "strongly agree".
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.4.

StatLink https://doi.org/10.1787/888934207405

Leadership functions: Distribution of time and engagement in activities

Leaders in the ECEC sector are often required to take on many roles in their centres. As discussed in the analytical framework for this chapter (see Figure 4.1), this encompasses the following essential functions: administrative leadership, engagement with the community, pedagogical leadership and engagement with parents. This part of the chapter analyses how ECEC centre leaders distribute their time across these different functions, the frequency and/or extent to which they or their centres engage in related tasks and activities, and how staff perceive leaders in their exercise of these functions.

This section also discusses how the performance of the four leadership functions varies within countries according to different characteristics, some of which can be targeted by policies:

- **centre characteristics**, such as geographical location, size in terms of the number of children enrolled, type of management, levels of autonomy for different decisions and inspection frequency
- **leader characteristics**, such as leaders' educational and training background and experience.

General distribution of time across different functions

Managing, balancing and prioritising time are challenges many ECEC centre leaders face (Douglass, 2019[3]). TALIS Starting Strong surveyed centre leaders about their working time. Centre leaders' reports about the number of hours they usually work each week in the ECEC centre provide an indication of the time they spend fulfilling their multiple functions (see Annex B for more details). Reports about the share of time they spent on different tasks, on average during the 12 months prior to the survey, give an idea of the relative weight of the different functions compared to each other, across countries.

Concerning the number of hours that centre leaders report usually working each week in the centre, at the pre-primary level, their time working ranges from 30 hours, on average, in Israel, to 44 hours in Chile and Korea. The size of centres in terms of the number of children enrolled influences working time in five countries participating in the survey. In Norway and Turkey, where the difference is the greatest, pre-primary leaders in the largest centres work six to seven hours more, on average (Table C.4.5). One needs to bear in mind, however, that centre leaders may have interpreted the question differently. For example, some may have counted professional development as part of their working time, others not.

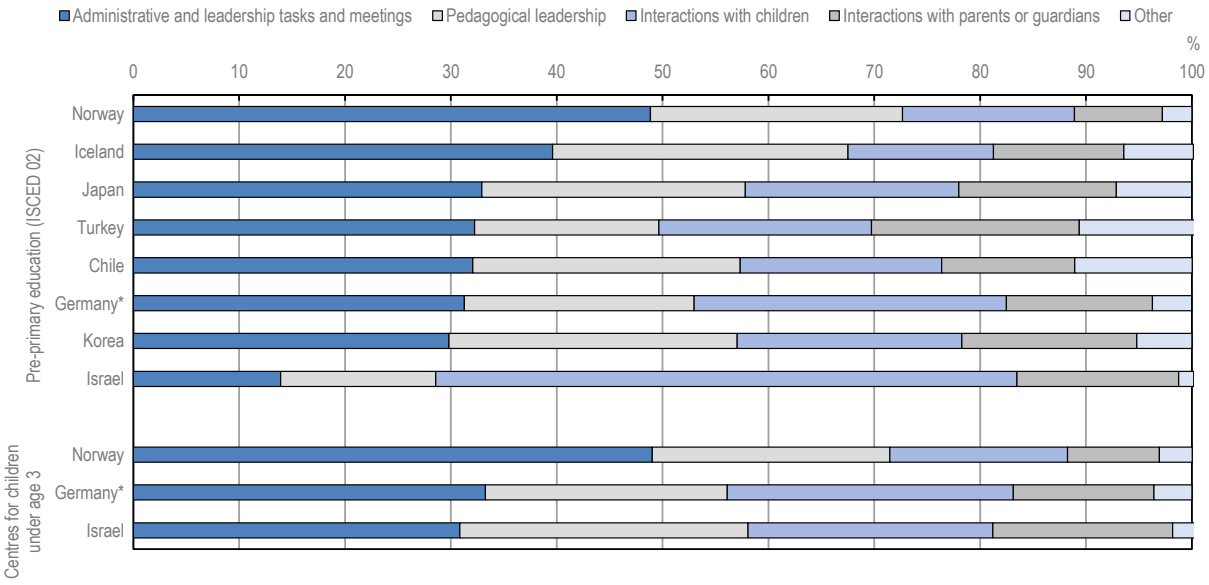
Figure 4.6 shows centre leaders' reports about the percentage of time they spent on different tasks, on average during the 12 months prior to the survey. Together, administrative and pedagogical leadership make up at least 50% of leader's working time, on average, in all countries except for pre-primary leaders in Israel. In Israel, this is likely related to leaders taking on considerable responsibilities working directly with children, which represents more than half of leaders' time in Israel. Administrative leadership takes up at least 30% of leaders' time in all countries, again with the exception of Israel (pre-primary). In Norway (both levels of education) and Turkey, centre leaders report spending significantly more time on administration than on pedagogical leadership. In Norway, the share of time spent on administration is more than twice as high as the share of time spent on pedagogical leadership.

Pedagogical leadership makes up at least 25% of centre leaders' time at the pre-primary level in Chile, Denmark (with low response rates), Iceland, Japan and Korea, and for centres for children under age 3 in Denmark (with low response rates) and Israel. In Germany, centre leaders at both levels of education spend more than 20% of their time on this function. The leaders of pre-primary centres in Israel and Turkey report spending the least time on pedagogical leadership.

Besides Israel, interactions with children also make up a relatively large share of leaders' working time in Germany (30% at the pre-primary level, 27% in centres for children under age 3). By contrast, in Denmark (with low response rates), Iceland and Norway, centre leaders reported spending less time in direct interactions with children (13-17% of their working time). This reflects different conceptions of leadership roles across countries and sometimes different early childhood education sectors within countries. In some contexts, such as pre-primary centres in Israel, pedagogical work with children is an essential part of leaders' functional role.

Figure 4.6. Distribution of leaders' time in early childhood education and care centres across leadership tasks and functions

Average proportion of time leaders report spending on different tasks during the 12 months prior to the survey



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Countries are ranked in descending order of the share of time spent on administrative and leadership tasks and meetings.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.6.

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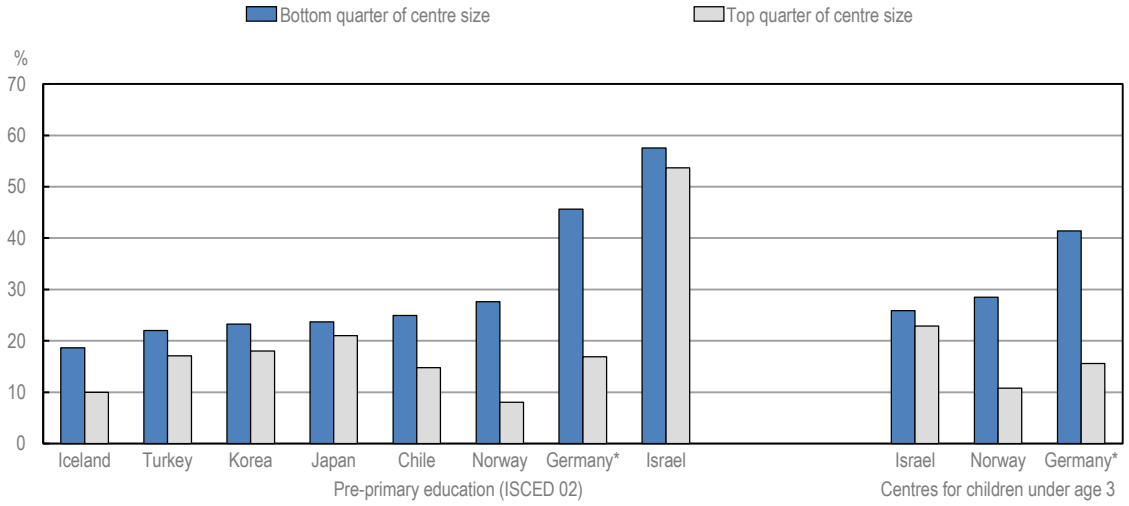
As explored in the first volume of TALIS Starting Strong, the average size of centres in terms of number of children enrolled varies greatly across as well as within countries, implying different demands on leaders (OECD, 2019[4]). The size of centres is also an important factor for the time centre leaders spend directly with children. In six out of nine countries at the pre-primary level, leaders of the smallest centres (i.e. the bottom quarter of the distribution of child enrolments within countries) spend a greater proportion of their time on interactions with children (Figure 4.7). The difference is particularly large in Germany and Norway. In Denmark, Israel, Japan and Turkey, the differences are not statistically significant. In Israel, the size of pre-primary centres is relatively uniform (OECD, 2019[4]), which may also explain why there are no differences in time spent on interactions with children by size. Results are similar for leaders of centres for children under age 3.

Figure 4.7. Early childhood education and care centre leaders' time spent on interactions with children, by centre size

Proportion of time ECEC centre leaders report spending on interactions with children, on average during the 12 months prior to the survey



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Note: The bottom quarter refers to the 25% of early childhood education and care centres with the smallest size within each country. The top quarter refers to the 25% of centres with the largest size.
Countries are ranked in ascending order of the proportion of time spent on interactions with children in the bottom quarter of centre size.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.7.

StatLink https://doi.org/10.1787/888934207443

The following sections discuss variations in the time leaders spend on different functions in greater detail, the related activities that they engage in, how they perceive their own leadership in these functional areas, and how they are perceived by their staff in performing the different functions.

Administrative leadership

Administrative leadership refers to the management of operations including human resources and finance; strategic functions such as planning, goal setting and quality improvement; and may also include collaborating with community partners and systems (Moen and Granrusten, 2013[23]; Strehmel, 2016[24]).

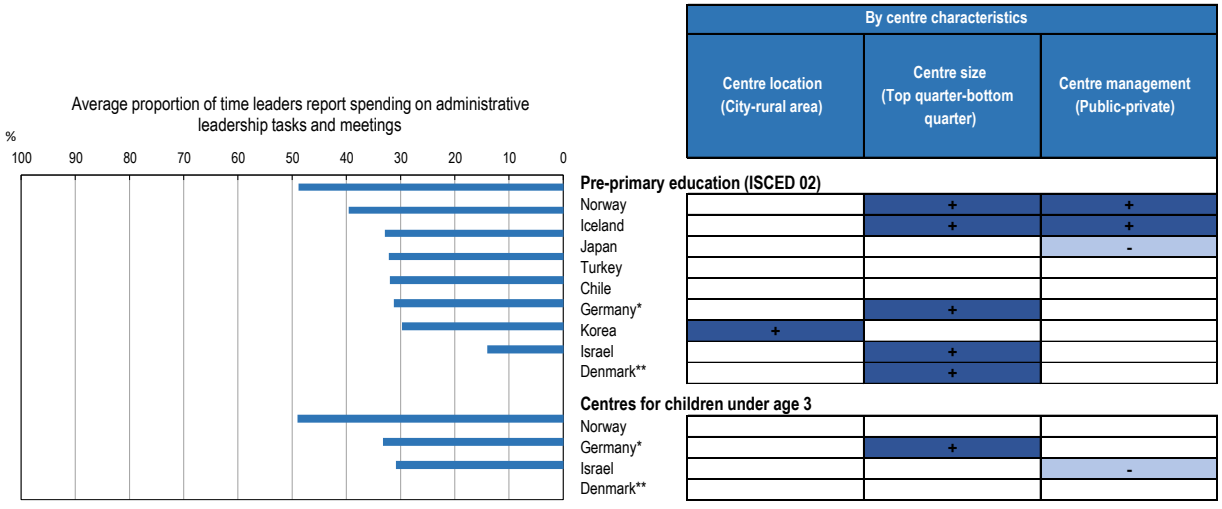
The proportion of time leaders report spending on administrative leadership not only differs between, but also within, countries to quite an extent (Figure 4.8). When broken down for different centre characteristics, centre size seems to explain part of this variation. Leaders in the largest centres – who spend less time interacting with children, as explored in the previous section – spend more time on administration than in the smallest centres at the pre-primary level in Denmark (with low response rates), Germany, Iceland, Israel and Norway, and in centres for children under age 3 in Germany. The difference is particularly large in Denmark (with low response rates), Germany and Norway. In the case of Israel, the difference is less meaningful given that pre-primary centres vary little in the number of children enrolled.

The picture is less clear cut in terms of the type of centre management. In Iceland and Norway, pre-primary leaders in publicly managed centres report spending more time on administrative functions than leaders in privately managed centres. In Israel (centres for children under age 3) and Japan, the opposite is true.

Comparing ECEC centres located in rural and urban areas, no consistent differences can be observed in this respect. Only in Korea do leaders in cities spend more time on administrative tasks.

Figure 4.8. Early childhood education and care centre leaders' time spent on administrative leadership, by centre characteristics

Statistically significant differences in the proportion of time leaders report spending on administrative leadership tasks and meetings during the 12 months prior to the survey



Positive difference
Negative difference
Difference is not significant

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.
Countries are ranked in descending order of the average proportion of time spent on administrative leadership tasks and meetings during the 12 months prior to the survey.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.8.

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The survey also allows analysing the ways in which different levels of autonomy for centre leaders influence how they exercise their functions. While higher levels of autonomy in resource-related tasks could be expected to be associated with a larger share of time spent on administrative tasks, overall this does not seem to be supported by the results of the survey. When comparing leaders who have full autonomy in a majority of resource-related tasks with those who do not, there are no statistically significant differences in the proportion of time spent on administration. It may be that ECEC centre leaders not only have autonomy in resource-related areas, but also the necessary supports to fulfil those tasks. Looking at autonomy for hiring and budgeting specifically, and comparing leaders without autonomy with those who share decision making, only in Denmark (both levels of education, with low response rates) and Israel (centres for children under age 3) are there consistent results. Here, leaders who share decision making spend more time on administrative leadership than leaders who have no autonomy in these tasks (Table C.4.9).

In terms of leader characteristics, the distribution of leaders' working time varies little depending on their educational qualifications. Chile and Iceland are the only two countries where leaders with higher qualifications spend more time on administrative leadership. The focus of training generally also does not seem to have much of an influence. In Norway (centres for children under age 3), leaders trained in

administration report spending more time on administrative tasks. In Korea and Norway, pre-primary leaders whose initial education included a course focused on early childhood, which represents the large majority of leaders in both countries, spent less time on administrative leadership than leaders whose education did not have such a focus. In Israel (centres for children under age 3), this is the case for centre leaders trained in pedagogical leadership. In Chile, male ECEC centre leaders (who represent 23% of the country's ECEC centre leaders, although they are largely concentrated in schools offering early childhood education),[3] report spending more time on administrative leadership than female leaders (Table C.4.8).

As analysed in the first volume of TALIS Starting Strong, administrative workload features among the most important sources of work-related stress for leaders (OECD, 2019[4]). At least one in two pre-primary leaders report that too much administrative work causes them "quite a bit" or "a lot" of stress in Chile, Denmark (with low response rates), Germany, Israel, Japan, Korea and Norway. In Denmark (with low response rates) and Germany, the same is the case for centres for children under age 3, while in Israel and Norway, administrative work seems to be of greater concern to leaders at pre-primary level than in centres for children under age 3 (Table C.4.10). It is therefore important to understand how leaders can be supported in fulfilling their administrative responsibilities, together with their other functions.

Administrative leadership also includes tasks and responsibilities related to staff management. TALIS Starting Strong asks staff about their perception of their centre's leaders on a number of dimensions. As also discussed in Chapter 3, ECEC staff have an overall positive view of their centre leaders. This is also true for staff's perspective on the quality of the human resource management of their centre leaders. Between 30% and 50% of ECEC centre staff in pre-primary education "strongly agree" that their centre leader ensures that "staff performance is managed effectively" in Chile, Denmark (with low response rates), Germany, Iceland, Korea, Norway and Turkey, as well as in centres for children under age 3 in Denmark (with low response rates), Germany and Norway. Agreement is particularly strong in Israel (at least 70%), which may be partly explained by the close contact between staff and leaders, who themselves work with children as an important part of their role. Similar proportions of staff in countries "strongly agree" with the statement that "the centre leader has professional relationships with staff" (Table C.4.11).

Different centre characteristics, such as centre size, may influence how performance is managed within ECEC centres, by creating different conditions for establishing a climate of trust and openness to feedback and criticism among staff and leaders (Ho, Lee and Teng, 2016[25]). As the survey shows, in Turkey, staff in the largest centres within the country are more likely to "strongly agree" that performance is managed effectively than staff in the smallest centres. This is also the case in pre-primary centres in Israel, although the size of centres differs little within the country, so the distinction is less meaningful. In Germany, the opposite is true at both levels of education, and staff in the smallest centres are more likely to report strong agreement that performance is managed effectively. In Chile, there are differences by centre location, with staff working in centres located in rural areas reporting lower levels of agreement regarding effective performance management than staff working in urban areas (Table C.4.12).

Engagement with the community

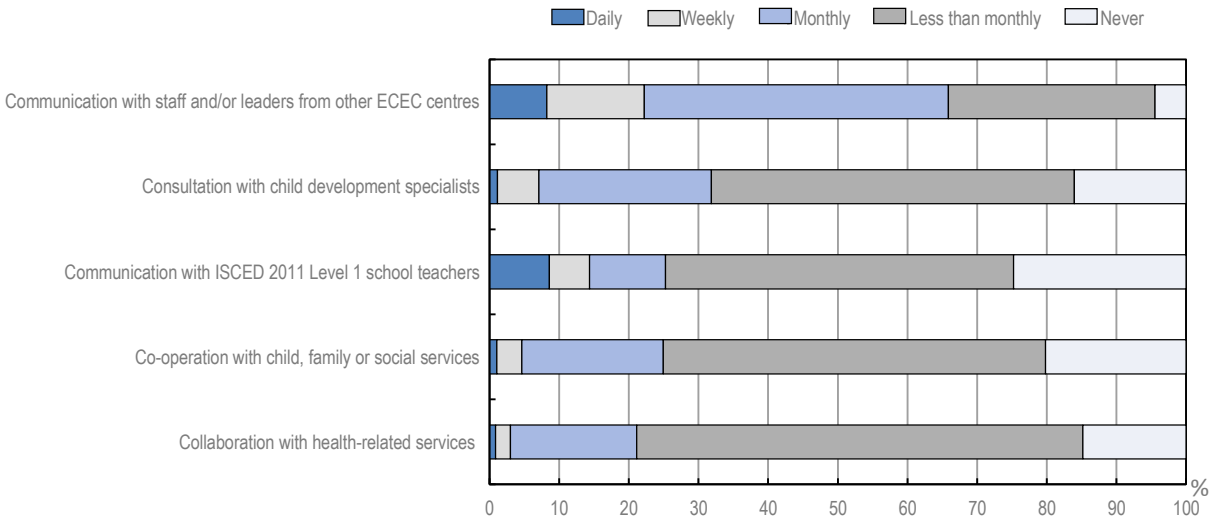
Establishing effective links with the community and partnerships with other child- and family-oriented services is another key function of leadership in ECEC settings, which cuts across leaders' administrative and pedagogical functions. For example, Ang (2012[26]) found that cross-disciplinary collaboration was a key domain of leadership practice in her study of ECEC leaders in England. Leaders reported that establishing community cross-agency collaborations and partnerships were an important and often challenging dimension of their role in supporting children and their families.

When asked about their centre's engagement in different activities related to partnerships with other services, leaders indicated communication with staff and/or leaders from other ECEC centres as their most frequent activity, on average across pre-primary education, followed by consultations with child development specialists (Figure 4.9). In turn, collaboration with health-related services is quite common

on a "monthly" and "less than monthly" basis. A relatively high share of leaders report communicating "daily" with primary school teachers. This is, however, largely driven by leaders' responses in Turkey (Table C.4.13). As analysed in the first volume of TALIS Starting Strong, a large share of ECEC centres in Turkey is co-located with primary schools (OECD, 2019, p. 143[4]). It may thus be less of a surprise that 38% of leaders in Turkey report communication with primary teachers on a daily basis. Indeed, on average across pre-primary education, 25% of pre-primary leaders still report that their centre "never" communicates with primary school teachers. About 20% of pre-primary leaders report that their centre "never" co-operates with social services, although this differs widely across countries, from 5% or less of pre-primary leaders in Denmark (with low response rates), Germany and Norway to more than 50% in Israel (Table C.4.13).

Figure 4.9. Frequency of early childhood education and care centre activities related to working with other child and family-oriented services

Average percentage of pre-primary leaders who report how often the following activities take place in their centre



Items are ranked in descending order of the percentage of leaders who reported they engage "daily", "weekly" or "monthly" in the different activities.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.13.

StatLink https://doi.org/10.1787/888934207481

ECEC centre leaders were not only asked about the frequency with which their centre collaborates with other child- or family-related services, but also about their centre's engagement with its community more broadly, for example by working with the neighbourhood or by organising excursions. As the data show, outdoor excursions occur most frequently on average across countries, although there is again considerable variation in all aspects across countries (Table C.4.14). This section turns to leaders' reports about centre engagement with the neighbourhood in greater detail.

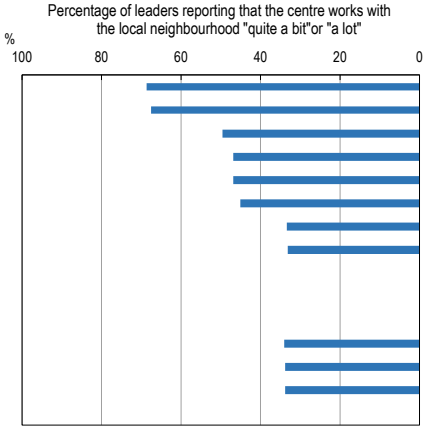
The share of leaders reporting that their centre works with the local neighbourhood "quite a bit" or "a lot" varies from about 33% of leaders in Germany and Norway at both levels of education to almost 70% in pre-primary education in Korea and Turkey (Figure 4.10). The extent of neighbourhood engagement also appears to differ within countries. While rural communities are often considered to provide tight-knit communities on which educational institutions can build their mission, they may also lack some of the

community resources available to urban areas (Echazarra and Radinger, 2019[27]; Graham and Underwood, 2012[28]). In terms of ECEC centres' work with neighbourhoods, leaders in rural areas report stronger levels of engagement than their urban peers at the pre-primary level in Denmark (with low response rates), Israel and Japan, and in centres for children under age 3 in Israel and Norway. Neighbourhood engagement also differs by centre size in pre-primary education in Denmark (with low response rates) and Turkey, and in centres for children under age 3 in Germany and Israel. Chile is the only country with differences between publicly and privately managed centres, with leaders of publicly managed centres reporting higher levels of engagement with the local neighbourhood than leaders of privately managed centres.

In terms of leader characteristics, training in administration seems to be an important factor, with a positive association in three countries at pre-primary level: Iceland, Israel and Norway. Levels of community engagement do not generally differ whether ECEC centre leaders received training in early childhood or pedagogical leadership or have acquired higher levels of qualification (Figure 4.10).

Figure 4.10. Early childhood education and care centre work with the local neighbourhood, by centre and leader characteristics

Statistically significant differences in percentage of leaders reporting that the centre works with the neighbourhood "quite a bit" or "a lot"



	By centre characteristics			By leader characteristics		
	Centre location (City-rural area)	Centre size (Top quarter - bottom quarter)	Centre management (Public -private)	Education or training included course focused on early childhood (Yes-no)	Education or training included administration (Yes-no)	Education or training included pedagogical leadership (Yes-no)
Pre-primary education (ISCED 02)						
Turkey		+		+		
Korea						
Iceland					+	+
Japan	-					
Israel	-				+	
Chile			+			
Norway					+	
Germany*						
Denmark**	-	-				
Centres for children under age 3						
Israel	-	-				
Germany*		+			-	
Norway	-					
Denmark**						

+ Positive difference
- Negative difference
Difference is not significant

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.
Countries are ranked in descending order of the percentage of leaders reporting that the centre works with neighbourhood "quite a bit"/"a lot".
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.15.

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Pedagogical leadership

Pedagogical leadership is the leadership needed to support teaching and learning. This function includes creating trusting relationships with and among staff, supporting staff professional development, promoting the implementation of curriculum and assessment, and structuring the work environment to support all of these aspects (Cheung et al., 2018[29]; Whalen et al., 2016[21]; Eskelinen and Hujala, 2015[30]).

A study of ECEC leaders in Finland, Japan and Singapore found that leaders across these three countries considered pedagogical leadership and human resources management to be the two most important tasks for ECEC leaders (Hujala et al., 2016[31]). Yet leaders in all three countries agreed that finding the time to adequately engage in both of these core tasks was difficult due to multiple other demands, although the nature of these competing demands varied somewhat across the three countries (Douglass, 2019[3]).

ECEC centre leaders' time allocated to pedagogical leadership varies both across and within countries (also see Figure 4.6). Among centre characteristics, centre size seems again to be an important factor. Leaders in larger centres not only seem to spend more time on administrative leadership tasks, but also on pedagogical leadership. At least this is the case in pre-primary education in Chile, Germany and Turkey, and in centres for children under age 3 in Norway. For other centre characteristics, such as location and type of management, no consistent differences can be observed (Table C.4.16).

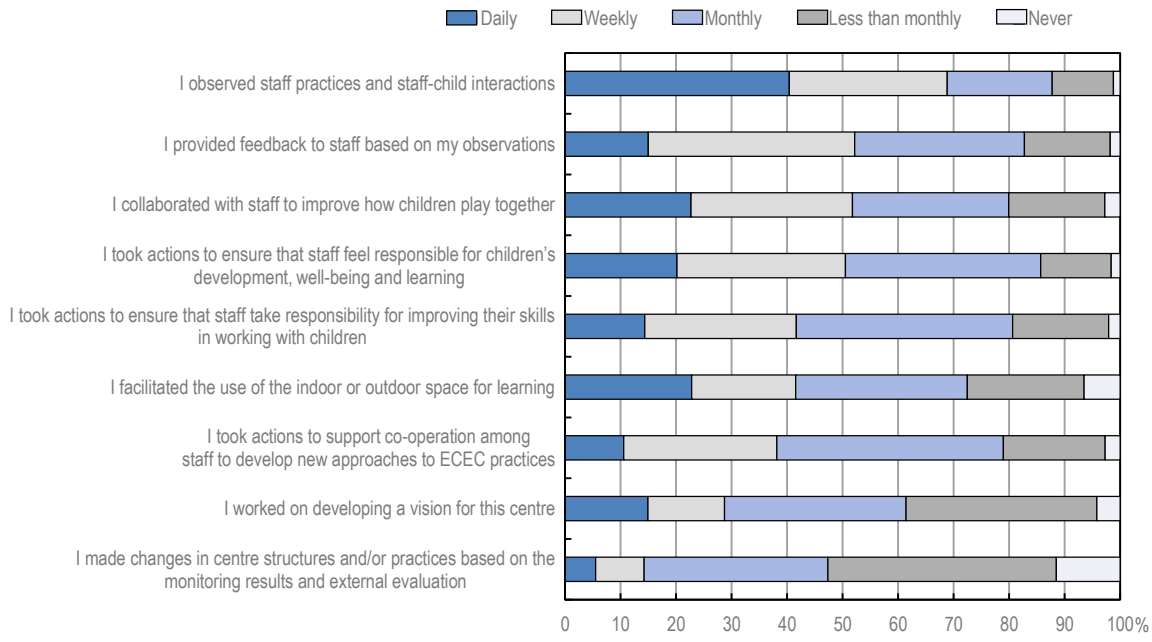
Besides the time allocation to pedagogical leadership during the 12 months prior to the survey, TALIS Starting Strong also provides insights on the frequency with which leaders report engaging in different pedagogical leadership tasks (Figure 4.11). Observing staff practices and interactions with children; providing feedback based on observations; and collaborating with staff to improve how children play together are the three most frequent activities on a "daily" and "weekly" basis, followed by leaders taking actions to ensure that staff feel responsible for children's development, well-being and learning. As might be expected, defining a vision for the centre and making changes to centre structures and/or practices occur less frequently. More than 10% of leaders, on average, report never making changes in centre structures and/or practices based on monitoring and evaluation, and the percentage of leaders reporting this to be the case is particularly high in Germany (both levels of education) and Japan.

A scale of pedagogical leadership ("leader support for pedagogical learning") based on a selection of these items makes it possible to examine the extent to which leaders' engagement in these activities differs across and within countries according to centre and leader characteristics (for more details on the scale, see Box 4.1). Leaders' support for pedagogical learning differs considerably within countries, as shown by the difference among leaders in the top and bottom quartiles in the scale (Table C.4.18).

Analysing how the level of pedagogical autonomy for centre leaders is related to their pedagogical leadership reveals no consistent association across countries. Different levels of autonomy in establishing plans for children's development, well-being and learning seem to be related to leaders' engagement in pedagogical leadership tasks in Denmark (with low response rates), Germany and Turkey. In Denmark (with low response rates) and Turkey, no autonomy for this task, compared to at least partial autonomy, is associated with lower values in the scale of leader support for pedagogical learning in pre-primary education. At the same time, full autonomy for this task, again compared to partial autonomy, is related to less engagement in pedagogical leadership in Germany (centres for children under age 3) and Turkey. This highlights the role that different actors may play in shared decision-making arrangements (Table C.4.19).

Figure 4.11. Early childhood education and care centre leaders' engagement in different pedagogical leadership activities

Average percentage of leaders at pre-primary level who report engaging in the following activities during the 12 months prior to the survey



Items are ranked in descending order of the percentage of leaders who reported they engage "daily" or "weekly" in the different activities.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.17.

StatLink https://doi.org/10.1787/888934207519

TALIS Starting Strong also asked centre leaders about the frequency of inspections in different dimensions, such as process quality or finances (also see Chapter 3 and OECD (2019[4])). The relationship between inspections and centre leaders' engagement in pedagogical leadership can be mediated by a range of factors, such as the extent of formative feedback that the process provides. Nevertheless, the frequency of inspections of process quality seems to be associated with the level of engagement in pedagogical leadership activities in ECEC centres in some countries. In Germany, Japan, Norway and Turkey, leaders at the pre-primary level who reported that their ECEC centre is "never" evaluated or only "less than once every year" reported engaging less in their pedagogical leadership function relative to those leaders who reported that inspections take place "once every year". This is also the case for leaders of centres for children under age 3 in Denmark (with low response rates) and Norway. Conversely, pre-primary leaders in Chile, Israel and Japan show higher levels of pedagogical leadership when inspections take place "more than once every year", again compared to leaders whose centres are evaluated once a year only (Table C.4.20).

While the analyses do not allow strong conclusions to be drawn, taken together with the results on autonomy, it appears that giving ECEC centre leaders some responsibilities for specific pedagogical tasks, such as the monitoring of children's development and learning, and ensuring support and accountability through regular evaluations may strengthen centre leaders' engagement in their pedagogical function.

In terms of leader characteristics, the content of leaders' training seems to be important for their engagement in pedagogical leadership, be it by developing the necessary skills and competencies or by

raising awareness of the importance of this part of their work (Table 4.1). In Israel and Korea at the pre-primary level, as well as in Germany for centres for children under age 3, leaders whose training included pedagogical leadership engage more frequently in pedagogical leadership tasks (as measured by the scale of leader support for pedagogical learning). In Japan, Korea and Turkey, the same is true for training on early childhood. Leaders' level of qualification is not associated with differences in pedagogical leadership, while leaders' experience is positively related to leaders' engagement in pedagogical tasks at the pre-primary level in Denmark (with low response rates) and in Germany in centres for children under age 3.

Table 4.1. Early childhood education and care centre leaders' engagement in pedagogical leadership, by leader characteristics

Statistically significant differences in the scale of leader support for pedagogical learning

	By leader characteristics					
	Experience (Experienced-Novice)	Gender (Male-female)	Level of education (ISCED Level 6 or more - ISCED Level 4, 5 or below)	Education or training on early childhood (Yes-no)	Education or training on pedagogical leadership (Yes-no)	Responsibilities for planning staff professional development (Yes-no)
Pre-primary education (ISCED 02)						
Chile						
Germany*		-				+
Iceland						
Israel					+	+
Japan				+		
Korea		-		+	+	
Norway						
Turkey		-		+		
Denmark**	+					
Centres for children under age 3						
Germany*	+				+	
Israel						
Norway						
Denmark**						

+ Positive difference
- Negative difference
Difference is not significant

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.
Note: For information on the scale of leader support for pedagogical learning, see Box 4.1.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.18.

StatLink https://doi.org/10.1787/888934207766

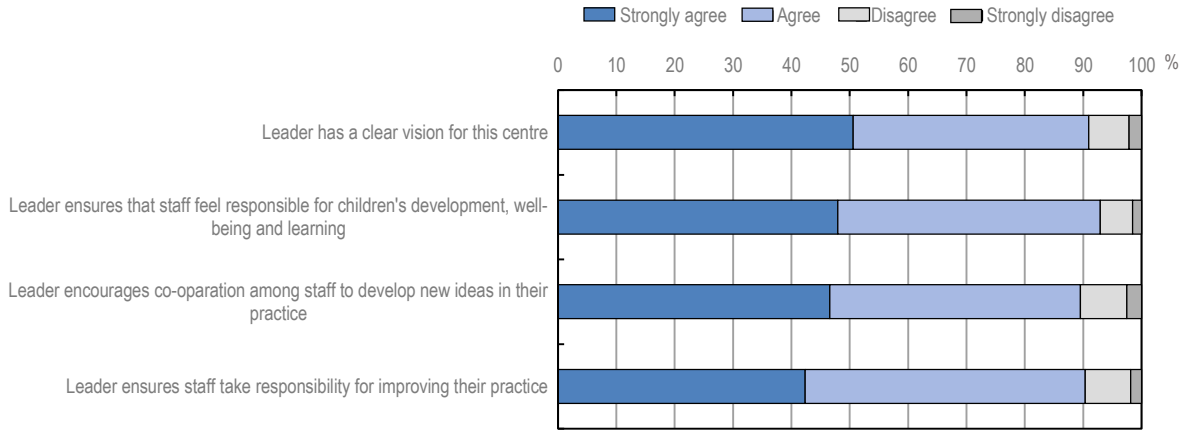
The survey also asked ECEC centre leaders whether it is part of their responsibility to plan for professional development activities for staff. In Germany and Israel, pre-primary leaders who answered yes to this question also reported more engagement in different pedagogical leadership tasks than those who perceived that this was not part of their responsibilities (Table C.4.18). In both countries, a comparatively low share of leaders reported being responsible for staff development, and particularly so in the publicly managed sector (Table C.4.21).

Some research suggests that gender and gender stereotypes affect leadership practices (Hard and Jónsdóttir, 2013[32]). TALIS Starting Strong provides some insights on this. In Germany, Korea and Turkey, female leaders in pre-primary education engage more often in pedagogical leadership tasks, although the share of male leaders is very low in Germany (Table 4.1). This is somewhat different to other leadership functions, where fewer differences can be observed by leaders' gender.

Analysing staff's perceptions of the leadership in their ECEC centres, and comparing them to those of leaders, provides insights into the effectiveness of pedagogical leadership. Asked about pedagogical leadership in their ECEC centres, staff again express relatively high levels of agreement that their centre leaders are effective in this function (Figure 4.12). In all countries participating in the survey, at least 85% of staff "agree" or "strongly agree" with statements like "the centre leader has a clear vision for this centre", "the centre leader encourages co-operation among staff to develop new ideas in their practices" or "the centre leader ensures that staff feel responsible for the children's development, well-being and learning".

Figure 4.12. Early childhood education and care centre staff's perceptions of centre leaders' pedagogical leadership

Percentage of staff who report that the following statements apply to their centre leader at pre-primary level, average across participating countries



Items are ranked in descending order of the percentage of staff who "strongly agree" that the statements apply to their centre leader.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.22.

StatLink https://doi.org/10.1787/888934207538

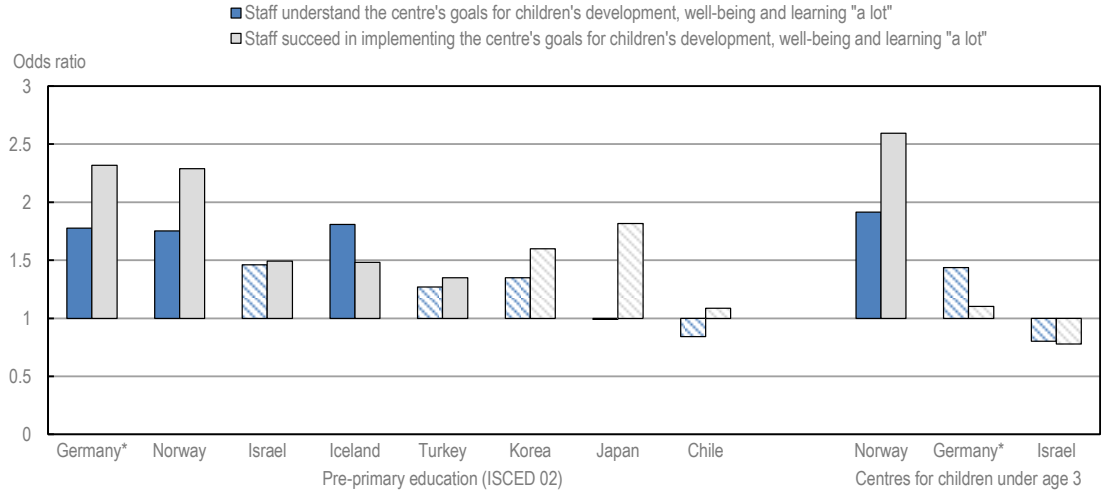
Developing a common vision for the ECEC centre and ensuring that staff work together to put that vision into practice and achieve common goals are important dimensions of pedagogical leadership (Siraj-Blatchford and Manni, 2007[33]). The extent to which goals and knowledge are shared across an organisation and to which there is mutual respect, something which the management literature refers to as relational co-ordination, is related with organisational outcomes such as staff retention and well-being

as well as organisational quality and improvement (Douglass, 2019[3]; Gittell, Seidner and Wimbush, 2010[34]).

TALIS Starting Strong asks leaders about the extent to which they believe staff understand the centre's goals and succeed in implementing them. In this respect, staff are clearly more likely to perceive that their centre leader has a clear vision when working in centres where leaders report that staff understand the centre's goals "a lot", and even more so in centres where leaders report that staff succeed "a lot" in implementing those goals (Figure 4.13). For instance, in Germany at the pre-primary level and in Norway at both levels of education, staff working in centres where leaders report that staff succeed in implementing the centre's goals "a lot" were more than twice as likely to "strongly agree" that their centre leader has a clear vision as staff in centres where leaders do not report such effective implementation. In Iceland, Israel and Turkey, pre-primary staff are between 35% and 50% more likely to do so. Overall, results suggest a notable concordance between staff's and leaders' perceptions about the extent to which leaders succeed in setting clear goals for children's development, well-being and learning at the centre level, especially in Germany and Norway.

Figure 4.13. Association between staff's and leader's perception of the early childhood education and care centre's goals and vision

Likelihood that staff "strongly agree" that "the centre leader has a clear vision for this centre" associated with leaders reporting that staff understand and implement the centre's goals "a lot", relative to lower levels of leader agreement



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Odds ratios derived from logistic regressions based on responses of early childhood education and care (ECEC) centre leaders and staff. Solid bars indicate statistically significant results. Relative to the reference category, odds ratios above 1 indicate a higher likelihood of reporting a strong level of agreement, whereas odds ratios below 1 indicate a lower likelihood. "Lower levels of leader agreement" includes the response categories "not at all", "to some extent" and "quite a bit". Control variables include staff educational attainment, staff years of experience, staff type of contract, staff working hours, staff role, staff trained to work with children, centre location, type of management, number of children, staff-child ratio and concentration of disadvantaged children. See Annex B for more details on the variables included in the model.
Countries are ranked in descending order of the size of the odds ratio for leader "strongly agrees" that staff understand the centre's goals for children's development, well-being and learning".
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.23.

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Looking at other aspects of pedagogical leadership, such as centre leaders encouraging collaboration or ensuring that staff feel responsible for children's learning and development, a greater extent of leader engagement in this function (as measured by the respective scale) is related to more positive staff perceptions of pedagogical leadership in some respects. In Chile and Norway, pre-primary leaders' stronger engagement in pedagogical leadership seems to be particularly associated with more positive staff perceptions. In Chile, a positive relation can be observed in all dimensions, while in Norway, staff are 26-30% more likely to "strongly agree" that their leader has a clear vision and that their leader encourages co-operation among staff to develop new ideas with higher values in the scale (Table C.4.24).

Engagement with parents

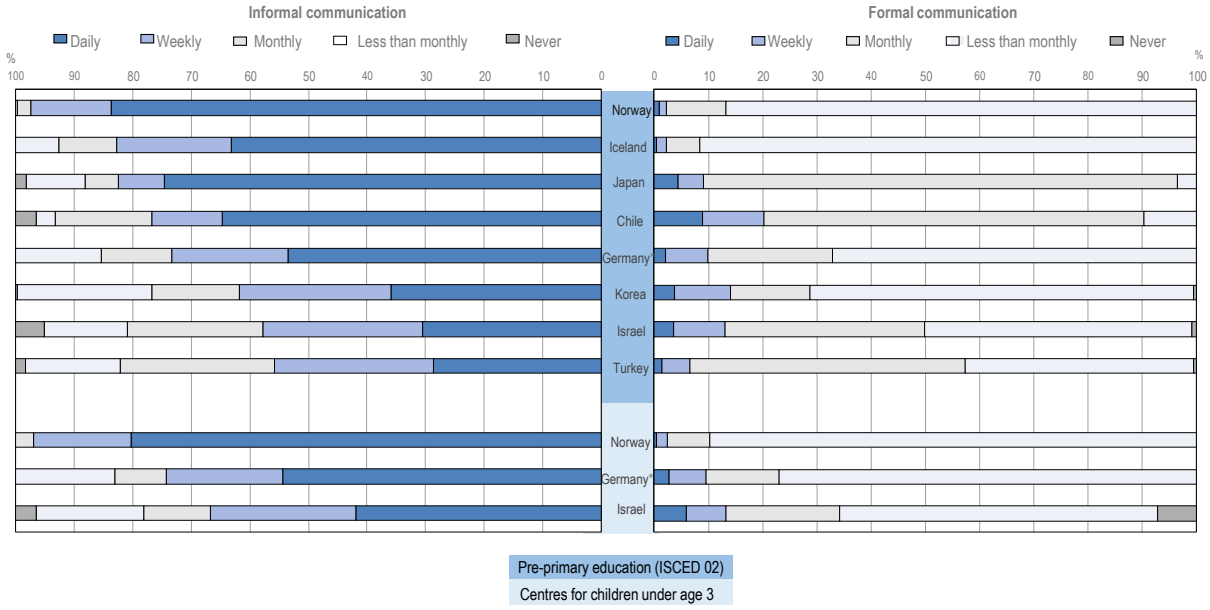
Centre leaders have an important role to play in shaping expectations for the centre's engagement with parents or guardians, so that they are involved in the learning and development of their children. Centre leaders can make creating a welcoming culture that values different family structures a high priority and ensure that parents are informed of what is happening in the playgroups. They can also help establish practices that seek feedback from parents about their children's experience and involve parents in decisions related to their children (Bloom and Abel, 2015[35]). Yet, little empirical research has examined how leaders support centre efforts to build partnerships with families and how this is associated with process quality (Douglass, 2019[3]).

Among the specific functions of ECEC centre leadership (see Figure 4.1), interactions with parents or guardians tend to make up the smallest share of centre leaders' working time, with the exception of pre-primary education in Israel and Turkey, where leaders spend slightly more time on engagement with parents than on pedagogical leadership (see Figure 4.6).

TALIS Starting Strong asks centre leaders about the way in which ECEC centres communicate with parents (Figure 4.14). Two types of activities are considered: informal communication (e.g. informal conversations on children's development) and formal communication (e.g. attending parent-staff meetings). As can be expected, informal communication seems to take place to a greater extent on a "daily" or "weekly" basis, whereas formal communication seems to take place more on a "monthly" or "less than monthly" basis. Engagement with parents, however, differs quite significantly across countries. In Chile and Japan, for example, a considerable share of centres engages "daily" or "weekly" with parents on an informal basis, but centres also communicate more formally with parents quite frequently. In Denmark (both levels of education, with low response rates), Iceland and Norway (both levels of education), large shares of centres also communicate with parents informally every day, but formal forms of engagement are much less frequent. Further insights on staff's and leaders' perspectives on centre engagement with parents, such as the concrete activities offered to parents or guardians, or the ease with which they can get in touch with ECEC staff, are provided in the first volume of TALIS Starting Strong (OECD, 2019[4]).

Figure 4.14. Frequency of early childhood education and care centres' communication with parents or guardians

Percentage of leaders who report that the following activities take place in their centre



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Countries are ranked in descending order of the percentage of leaders reporting "daily" or "weekly" informal communication.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.25.

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Leadership structures: Distribution of leadership responsibilities

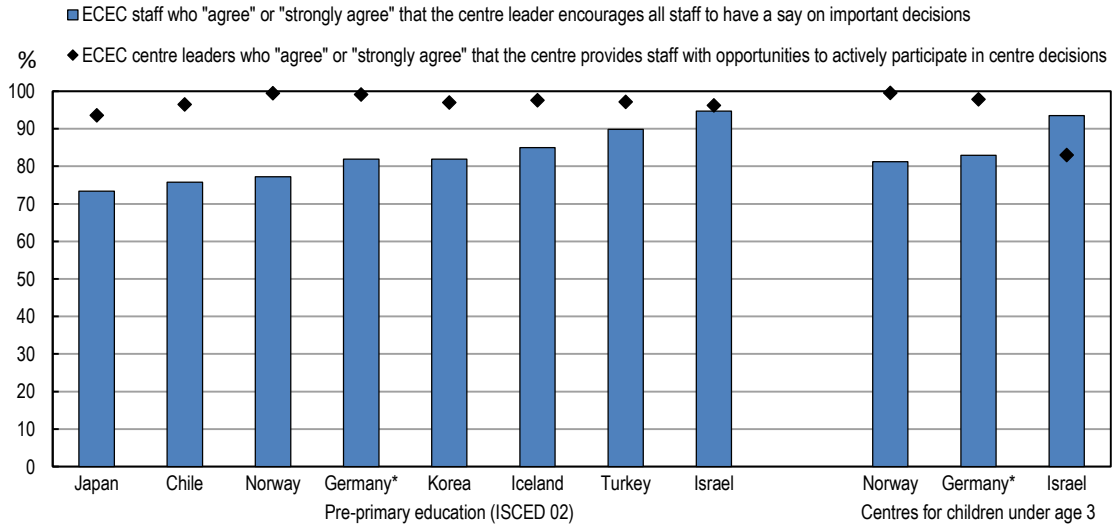
Leadership can occur at multiple levels of an organisation, and may involve formal leaders in hierarchical power structures and/or distributed leadership structures in which different actors demonstrate and engage in leadership. While parents and children can also be involved in centre decision making, this section focuses on the involvement of staff specifically. Research on distributed leadership in educational contexts shows that the leadership of administrators and staff may each play an important, distinctive, yet interdependent role when it comes to improving quality (Wenner and Campbell, 2016[36]; Sebastian, Allensworth and Huang, 2016[20]). Moreover, staff autonomy over their working environment is an important factor for staff well-being and effectiveness (OECD, 2019[4]; 2019[6]). Nevertheless, distributed leadership also places demands on staff time and may therefore be a source of stress. Distributing leadership, thus, needs to be accompanied by support from leaders, so that staff can participate in shaping the centre's processes and organisation and take on related tasks without this being a source of stress (see Chapter 3).

When asked about their views on the extent to which leadership is distributed within centres, a large majority of leaders consider that their ECEC centre offers opportunities for staff involvement in decision making and a culture of shared responsibility. Nevertheless, in some countries, centre leaders also "strongly agree" with the statement that they take the important decisions on their own. This is particularly the case in Chile, Iceland, Israel (for both levels of education) and Japan (Table C.4.26). In some contexts, this may stem from the fact that leaders ultimately hold the formal responsibility for taking decisions and remain accountable for their leadership and management.

Asking leaders about sensitive issues such as the extent to which they involve staff in centre decision making can result in respondents answering in a way that will be viewed favourably by others because of desirability pressure. Since TALIS Starting Strong also asked staff about their perceptions of distributed leadership, the survey provides an opportunity to partly overcome this bias by comparing staff and leader perceptions of distributed leadership. The data reveal that distributed leadership is not widespread in all countries and views of staff and leaders are not always aligned. In all countries except Israel (both levels of education), a lower share of staff than leaders agree that leadership is distributed in their centre (Figure 4.15). While more than 90% of staff "agree" or "strongly agree" that leadership is distributed in Israel (both levels of education) and Turkey, less than 80% of pre-primary staff do so in Chile, Japan and Norway. In the latter three countries, the difference between staff's and leaders' perceptions is particularly great (more than 20 percentage points). Within countries, staff perceptions of distributed leadership vary little depending on leader characteristics such as gender or level of education (Table C.4.28). Further differences within countries in the extent to which staff feel that the centre provides opportunities for getting involved are analysed in Chapter 3 as part of the analysis of staff's control over decisions.

Figure 4.15. Staff and leader perceptions of distributed leadership in early childhood education and care centres

Percentage of staff and leaders who "agree" or "strongly agree" that staff are involved in centre decisions



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Countries are ranked in ascending order of the percentage of staff "agreeing" or "strongly agreeing" that the centre provides opportunities to actively participate in centre decisions.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.27.

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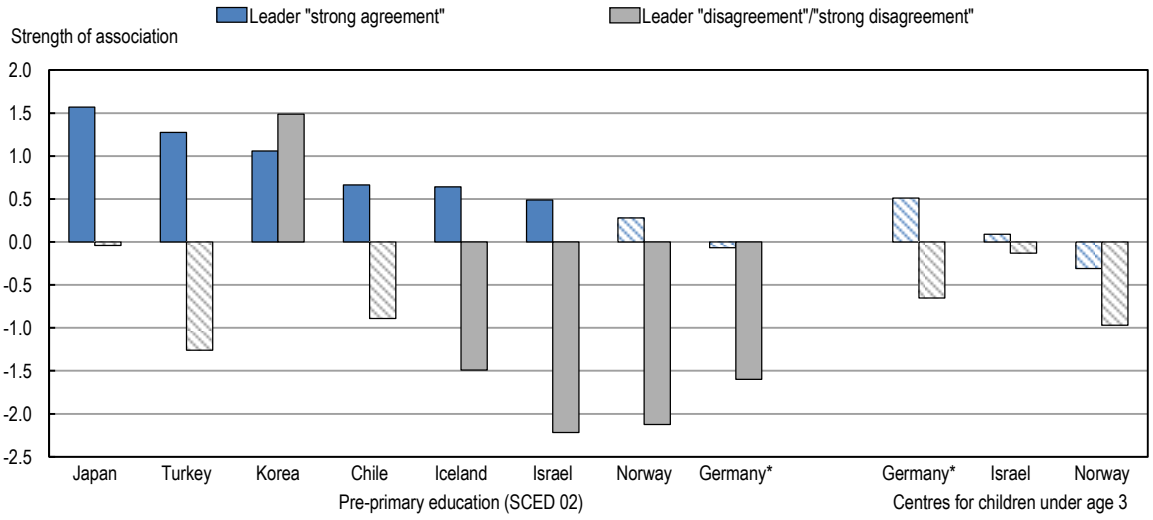
Data from the school sector from TALIS 2018 suggest a connection between a collegial school culture and leadership committed to improving teacher instruction. Principals who involve staff, parents and students in school decisions and have a school culture of collaboration and shared responsibility were more likely to report that they take action to support co-operation among teachers, that teachers take responsibility for improving their teaching and that they feel responsible for students' learning (OECD, 2020[37]). A cross-sectional study examining the relationship between pedagogical leadership (which the authors refer to as

learning-centred leadership), teacher agency and teacher leadership in primary and secondary education in Turkey similarly points to a relationship between pedagogical and distributed leadership. The study suggests that school principals' engagement in practices such as building a learning vision, providing learning support and managing the learning programme is related to teachers' contributions to school improvement through their own leadership and through their feeling of ownership and engagement in school change (Bellibaş, Gümüş and Kılınç, 2020[38]).

Figure 4.16. Association between early childhood education and care centre leaders' pedagogical and distributed leadership

Association between the scale of leader support for pedagogical learning and varying levels of leader agreement that their centre provides staff with opportunities to actively participate in centre decisions, relative to leader "agreement"



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Results of a linear regression based on responses of early childhood education and care centre leaders. Solid bars indicate statistically significant coefficients. Control variables include staff educational attainment, staff years of experience, staff type of contract, staff working hours, staff role, staff trained to work with children, centre location, type of management, number of children, staff-child ratio and concentration of disadvantaged children. See Annex B for more details on the variables included in the model.
Countries are ranked in descending order of the strength of association for strong agreement.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.29.

StatLink https://doi.org/10.1787/888934207614

TALIS Starting Strong provides an opportunity to examine the association between distributed leadership and pedagogical leadership in early childhood education and care. In other words, is there any relation between the extent to which ECEC leaders involve their staff in centre decision making and the extent to which ECEC leaders support pedagogical learning among their staff?

One perspective into this question emerges from the association between leaders' own perception about distributed leadership in their centres and their level of support for pedagogical tasks. Results from a regression model that predicts values of the leader scale of support for pedagogical learning based on leaders' views about opportunities for staff to participate in centre decisions are reported Figure 4.16. As the figure shows, in six countries, pre-primary leaders who "strongly agree" that their centre provides staff with opportunities to actively participate in decision making also show stronger levels of pedagogical leadership relative to leaders who only "agree" with the statement. Pre-primary leaders who "disagree" or

"strongly disagree" with the statement about distributed leadership have statistically significant lower values in the scale of leader support for pedagogical learning in four countries, again relative to those who "agree" with the statement. Results are similar for leaders' agreement whether their centre has a culture of shared responsibility (Table C.4.29). This suggests that, from the point of view of ECEC centre leaders, distributed leadership and pedagogical leadership are not only compatible, but tend to go hand in hand.

Another way of examining this question is to look at the distribution of staff who "strongly agree" that their centre leader encourages all staff to have a say in important decisions depending on the strength of their leaders' pedagogical leadership. That is, one can compare the proportion of staff with a strong perception of distributed leadership within centres whose leaders are in the top quarter of the distribution for the scale of leader support for pedagogical learning with the share of staff with a similar perception whose leaders are in the bottom quarter of the distribution in the scale.

Based on this measure, leaders whose staff report strong distributed leadership are generally not necessarily more likely to be in the top of the distribution for leader support for pedagogical learning. Only in Chile a positive association emerges between distributed leadership, as reported by staff, and centre leaders' engagement in pedagogical leadership (Table C.4.30). A separate regression model predicting values of the scale of leader support for pedagogical learning based on staff perceptions of distributed leadership paints a similar picture (Table C.4.29).

In sum, these results illustrate the various patterns of leadership. In a number of countries, leaders who report a distributed approach to leadership also report greater engagement to support their staff in pedagogical tasks, while the opposite is true in some other countries. From the perspective of staff, however, the relationship is less clear cut, and both centre leaders who lead in a more hierarchical way and those who structure their leadership more horizontally can be engaged in pedagogical leadership.

Relationship between centre leaders' leadership practices and staff's professional growth, job satisfaction and well-being

This section examines how centre leadership may foster a collaborative professional environment and help create supportive working conditions for staff (Figure 4.1). The research literature highlights that centre leaders may help staff improve by observing their practices with children, providing them with feedback based on their observations, and creating a culture of shared trust and collaboration (Douglass, 2019[3]). Through their practices, centre leaders may also help attract, motivate and retain staff in the centre. For the school sector, for example, empirical studies from the United States suggest that effective leaders may help reduce teacher turnover and strategically retain high-performing staff (Kraft, Marinell and Shen-Wei Yee, 2016[39]).

Pedagogical and distributed leadership and staff collaboration

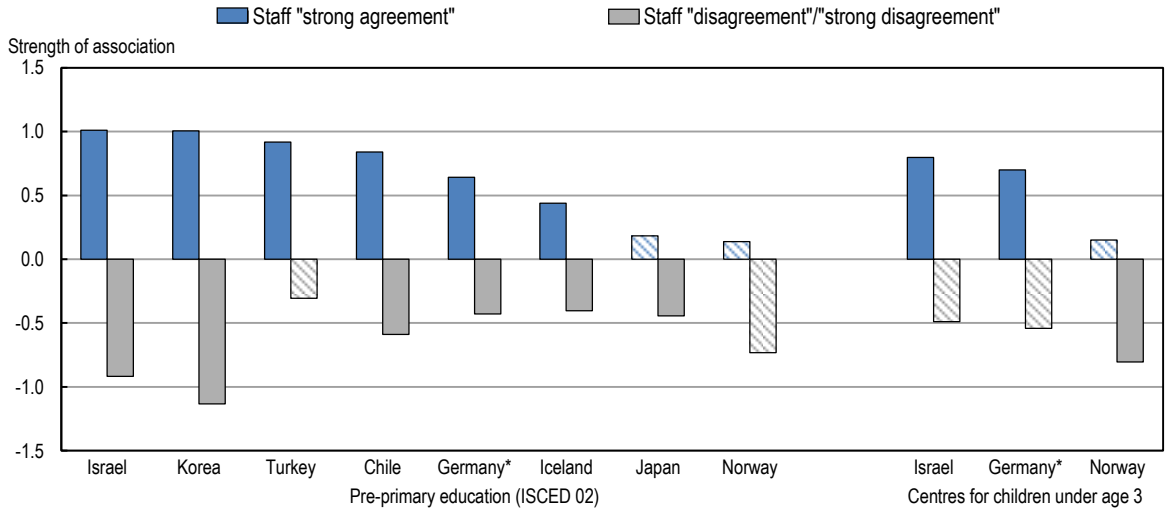
As highlighted in Chapter 2, collaboration among staff is a powerful form of professional learning. More broadly, through collaboration, children may benefit from the combined skills and experiences of all staff rather than the unique strengths and personal limitations of an individual staff member. Collaboration within educational institutions can ensure that staff co-ordinate their efforts and are more knowledgeable about the learning, development, and social and emotional needs of their children (OECD, 2019[6]). How, then, can leadership best support such collaboration among staff? Is there any relationship between centre leaders' engagement in functions such as pedagogical leadership, on the one hand, and staff collaborating with each other around their children's needs, on the other?

Analyses of TALIS Starting Strong data suggest that leaders who strongly engage in their pedagogical function, as perceived by staff, may indeed be more effective in facilitating collaboration among staff at the centre level. Staff who "strongly agree" with statements about different aspects of pedagogical leadership

tend to collaborate to a greater extent with their peers, as measured by a scale of staff engagement in collaborative practices (see Annex B), relative to staff who only "agree" (Figure 4.17). For instance, in seven out of nine countries, pre-primary staff engagement in collaborative practices is significantly higher for staff who "strongly agree", rather than just "agree", that their centre leader encourages co-operation among staff to develop new ideas in their practices. In a similar number of countries, staff who perceive a lack of encouragement to collaborate on the part of their leader tend to engage less often in collaboration. Similar relationships can be observed for other aspects of pedagogical leadership, such as leaders ensuring that staff feel responsible for the children's development or for improving their practice.

Figure 4.17. Association between leader encouragement of co-operation and staff collaboration in early childhood education and care centres

Association between the scale of staff engagement in collaborative practices and varying levels of staff agreement that their leader encourages co-operation among staff to develop new ideas in their practices, relative to staff "agreement"



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Results of OLS regressions based on responses of early childhood education and care centre staff. Solid bars indicate statistically significant coefficients. Control variables include staff educational attainment, staff years of experience, staff type of contract, staff working hours, staff role, staff trained to work with children, centre location, type of management, number of children, staff-child ratio and concentration of disadvantaged children. See Annex B for more details on the variables included in the model.
Countries are ranked in descending order of the strength of association for strong agreement.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.31.

StatLink https://doi.org/10.1787/888934207633

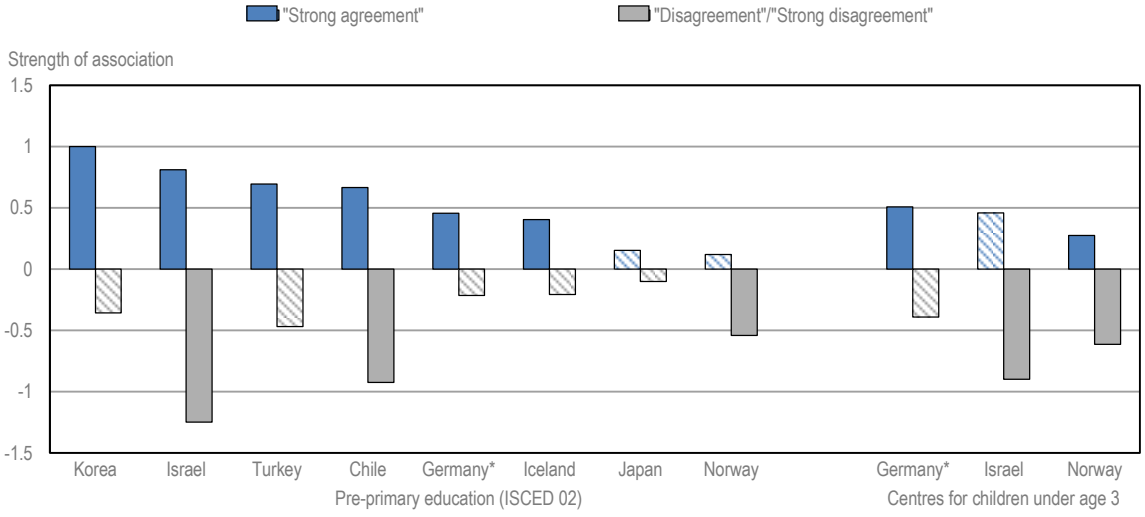
Staff who perceive leadership as being distributed in their centres also tend to collaborate more with their colleagues (Figure 4.18). As described above in the section on leadership structures, across participating countries, large shares of both centre leaders and staff agree that staff have opportunities to participate in centre decision making. A way of extending this analysis is to compare levels of professional collaboration among staff and leaders who deviate from this "normative" view about distributed leadership in their centres.

At the pre-primary level, staff engagement in collaborative practices is significantly higher for staff who "strongly agree" that their centre leader encourages all staff to have a say in important decisions, relative

to staff who merely "agree" with the same statement, in six out of nine countries. Moreover, staff who perceive a lack of space ("disagree" or "strongly disagree") to express their opinions about these important decisions tend in turn to engage less often in collaboration with peers, compared to staff who have a more positive view ("agree") about the level of distributed leadership. Results are similar for countries participating in the staff survey and leaders in centres for children under age 3. Leaders' perspectives on distributed leadership within their centre corroborate these findings (Table C.4.32). While TALIS Starting Strong data cannot support causal claims, this suggests that staff collaborative practices are more prevalent in centres with more horizontal forms of leadership than in centres with more top-down leadership approaches.

Figure 4.18. Association between leader encouragement for staff involvement in decision making and staff collaboration in early childhood education and care centres

Association between the scale of staff engagement in collaborative practices and varying levels of staff agreement that their centre leader encourages all staff to have a say in important decisions, relative to "agreement"



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Results of OLS regressions based on responses of early childhood education and care centre staff. Solid bars indicate statistically significant coefficients. Control variables include staff educational attainment, staff years of experience, staff type of contract, staff working hours, staff role, staff trained to work with children, centre location, type of management, number of children, staff-child ratio and concentration of disadvantaged children. See Annex B for more details on the variables included in the model.
Countries are ranked in descending order of the strength of association for strong agreement.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.32.

StatLink https://doi.org/10.1787/888934207652

Distributed leadership and staff job satisfaction

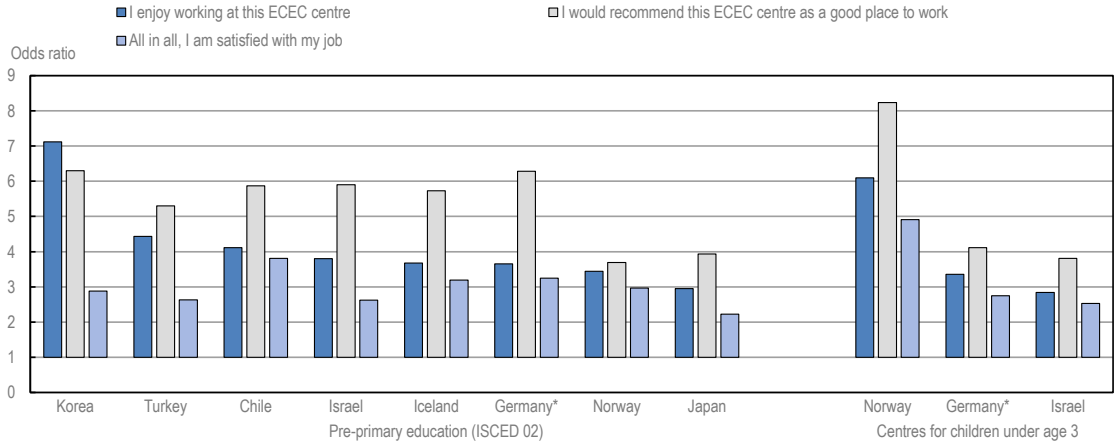
Staff working conditions and well-being are important to attract and retain a high-quality ECEC workforce and for the quality of ECEC provision (see Chapter 3). Autonomy and independence are important aspects of this, influencing staff satisfaction and retention. In one study of ECEC workers in Australia, for example, staff with a greater degree of influence and those working in settings with a flatter organisational structure often reported a stronger intention to stay in the job (McDonald, Thorpe and Irvine, 2018[40]).

From TALIS Starting Strong, a clearly positive association emerges when looking at the relationship between different dimensions of centre leadership, such as the development of distributed leadership

structures, and different indicators of staff satisfaction. Compared to staff who perceive fewer opportunities for participating in centre decisions, staff who "strongly agree" that the centre leader encourages all staff to have a say in important decisions are at least twice as likely to report that they enjoy working at their centre, to recommend their centre as a good place to work or to be satisfied with their job overall (Figure 4.19). In all countries except Korea, the relationship is strongest for staff recommending their centre as a good place to work, and the relationship is weakest for overall job satisfaction. This likely reflects that general satisfaction with the job is influenced to a greater extent by other aspects of staff working conditions, such as salaries and other terms of employment (see Chapter 3).

Figure 4.19. Association between leader encouragement for staff involvement in decision making and indicators of staff's job satisfaction in early childhood education and care

Likelihood of staff reporting satisfaction with job among staff "strongly agreeing" that their centre leader encourages all staff to have a say in important decisions, relative to staff only "agreeing", "disagreeing" or "strongly disagreeing"



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Notes: Odds ratios derived from logistic regressions based on responses of ECEC centre staff. Solid bars indicate statistically significant coefficients. Relative to the reference category, odds ratios higher than 1 indicate a higher likelihood of reporting a strong level of satisfaction, whereas odds ratios lower than 1 indicate a lower likelihood. Control variables include staff educational attainment, staff years of experience, staff type of contract, staff working hours, staff role, staff trained to work with children, centre location, type of management, number of children, staff-child ratio and concentration of disadvantaged children. See Annex B for more details on the variables included in the model.
Countries are ranked in descending order of the size of the odds ratio for "I enjoy working at this ECEC centre".
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.33.

StatLink https://doi.org/10.1787/888934207671

Relationship between centre leaders' leadership practices and staff sense of self-efficacy and practices with children and parents

This section examines another pathway through which ECEC centre leaders influence process quality, which is more directly through their influence on staff attitudes and behaviours as well as staff practices with children and parents.

Pedagogical leadership and staff sense of self-efficacy and practices with children

Centre leaders set a vision for their centre and work together with staff, parents and the community to achieve common goals, most notably to promote children's learning, development and well-being. The main avenue for this is the pedagogical work and support that centre leaders provide for their staff, which can foster process quality and quality interactions between staff and children by influencing both staff attitudes and behaviours.

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 (see Chapters 2 and 3). While more remains to be understood about the relation between staff's sense of self-efficacy and the quality of staff's actual practices in the ECEC sector, the following examines how centre leaders may influence staff's confidence about their ability to work with the children in their care. TALIS Starting Strong provides information on staff's sense of self-efficacy in specific areas of work as well as an aggregate scale of staff self-efficacy in supporting child development (see Annex B). Variation in both of these measures can be examined in relation to staff's perceptions of their leaders' engagement in different aspects of pedagogical leadership.

Regression analyses using the self-efficacy scale show that staff's confidence in their ability to promote child development, learning and well-being is positively and consistently associated with strong pedagogical leadership, as perceived by staff, in all countries participating in the survey. This holds true for the different dimensions of pedagogical leadership on which staff were surveyed, such as leaders setting a clear vision or ensuring staff feel responsible for children's development (Table C.4.34).

The survey also allows a more granular analysis of the relationship between different dimensions of pedagogical leadership and staff sense of self-efficacy in individual areas of work. Similar to the self-efficacy scale, consistent positive associations are observed with pre-primary staff confidence in their ability to work across a number of areas in Chile, Denmark (with low response rates), Germany, Iceland, Israel, Korea, Norway and Turkey, and with staff confidence in centres for children under age 3 in Germany, Israel and Norway. For instance, across countries, staff are about twice as likely to report a strong sense of self-efficacy for adapting their work to individual child needs when they "strongly agree", rather than just "agree", "disagree" or "strongly disagree", that their centre leader ensures that staff feel responsible for children's development, well-being and learning (Table C.4.35).

Besides staff's sense of self-efficacy, a positive and consistent association is also observed between leaders' engagement in pedagogical leadership activities and staff's actual reported practices with children at the centre level. For instance, staff's perception that leaders succeed ("strongly agree") in ensuring that staff feel responsible for their children's learning and development or in ensuring that staff take responsibility for improving their practices bears a positive association with staff's use of practices for facilitating children's literacy development at the centre level in all countries except Denmark (centres for children under age 3, with low response rates). A negative perception ("disagree" or "strongly disagree") of the centre leader's role in these dimensions is associated with a less frequent use of these practices at the centre level. Analyses for other staff practices at centre level, such as facilitating prosocial behaviour or emotional development, yield similar results (Table C.4.36).

Pedagogical leadership and parental engagement practices

Parental engagement is an essential aspect of process quality in ECEC settings, and constitutes an important part of ECEC centre leaders' and staff's roles. How, then, are leaders' actions and practices related to staff's engagement with parents? TALIS Starting Strong asked staff how well statements such as "parents or guardians can get in touch with staff easily" or "parents or guardians are informed about daily activities on a regular basis" describe how they engage parents or guardians at the centre ("not at all", "somewhat", "well", "very well"), and a scale of staff facilitating parent/guardian engagement at the

centre level was constructed (see Annex B). Variation in this scale can be examined in relation to different aspects of pedagogical leadership that may have an association with staff's parental engagement, such as setting a vision for the centre or ensuring that staff feel responsible for children's development and learning.

As the analyses carried out for this report show, ECEC centre leaders may be able to shape the institutional conditions and cultures that facilitate parental engagement at the centre level. For instance, compared to staff who only "agree" that the centre leader has a clear vision for the centre, staff who "strongly agree" report that their centres provide greater engagement opportunities for parents or guardians across the nine countries participating in the survey. Results are similar for staff's reports about their centre leader ensuring that staff feel responsible for the children's development, well-being and learning (Table C.4.37).

Leadership development and leaders' working conditions

The first volume of TALIS Starting Strong described the educational background of ECEC centre leaders as well their perceptions of the quality of their work environment (OECD, 2019[4]). The following sections focus in particular on strategies to develop leadership through continuing professional development as well as leaders' working conditions and job satisfaction.

Professional development

Leaders from different countries report various professional development needs (Table 4.2). Knowledge and understanding of current national/local policies on ECEC represent an important need for professional development in countries, particularly at the pre-primary level, as indicated by the lighter shadings in the table which describe the most frequently cited professional development needs within countries. This seems to be in line with leaders' reports that changing regulations constitute a considerable source of stress (see OECD (2019[4])), and may have implications for the formulation of policies and how they reach ECEC centres. In Chile, for example, knowledge of current policies is by far the most important area of need. Slightly less than a third of ECEC centre leaders in the country report high levels of need in this regard, something that is likely related to the introduction of a new curriculum framework in 2018.

Knowledge and understanding of new developments in leadership research, the use of data for improving quality and the design of centre goals represent further priorities for leader development as identified by leaders themselves. Issues such as promoting equity and diversity, collaborating with primary schools or working together with parents do not seem to constitute a particular development need. While leaders in some countries, such as Iceland and Norway, have relatively clear priorities for professional development, leaders in other countries report high needs for further development across the different areas, notably in Japan and Korea.

Table 4.2. Professional development needs of early childhood education and care centre leaders

Percentage of ECEC staff who reported a "high level of need" for professional development in the following areas

	Knowledge and understanding of new developments in leadership research and theory	Knowledge and understanding of current national/local policies on ECEC	Using data for improving the quality of the ECEC centre	Designing the ECEC centre's goals for children's development, well-being and learning	Collaborating with parents or guardians	Collaborating with primary (ISCED Level 1) schools	Observing ECEC staff's practices and staff-child interactions	Providing effective feedback	Promoting equity and diversity	Human resource management	Financial management
	%	%	%	%	%	%	%	%	%	%	%
Pre-primary education (ISCED 02)											
Chile	19.7	31.2	21.6	16.1	19.8	14.4	14.7	24.3	24.1	17.0	20.7
Germany*	15.5	21.3	21.4	26.4	16.1	13.4	19.7	20.5	16.3	29.2	17.5
Iceland	10.4	8.5	13.0	7.8	6.3	5.1	15.3	19.8	13.5	17.5	19.0
Israel	18.7	21.7	15.9	15.7	11.4	7.3	13.9	13.2	13.5	15.1	13.1
Japan	36.6	40.0	45.7	53.9	56.7	42.8	56.9	43.1	26.8	33.7	20.2
Korea	43.3	45.8	40.1	31.2	52.9	25.8	42.0	42.6	34.2	46.0	47.9
Norway	11.7	13.2	21.3	17.3	9.2	9.0	18.0	13.6	9.3	14.8	15.1
Turkey	14.3	14.5	13.3	10.1	13.0	8.5	10.8	10.3	9.4	11.5	12.0
Denmark**	7.4	9.3	6.1	2.5	2.6	3.3	5.8	5.6	0.5	4.6	4.6
Centres for children under age 3											
Germany*	13.4	16.7	19.6	26.2	20.3		21.5	20.3	15.0	27.9	16.2
Israel	32.2	36.2	40.6	55.0	35.9		42.5	41.2	30.2	35.6	35.5
Norway	9.6	3.9	11.5	8.7	7.0		13.9	10.2	9.7	5.7	11.8
Denmark**	12.0	13.4	10.5	9.0	0.0		3.5	6.2	0.0	2.9	13.4

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.

** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.

Note: The shading of the cells applies horizontally to the ranking of areas for professional development within countries. Within each country, the most frequently reported areas for professional development are indicated in white. The least frequently reported areas for professional development are indicated in dark blue. Areas for professional development for which intermediate percentages of leaders reported having a high need are indicated by intermediate colours.

Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.38.

StatLink https://doi.org/10.1787/888934207785

When it comes to barriers to centre leaders' participation in professional development, leaders in many countries perceive time resources to be an important hurdle (Table 4.3). A lack of staff to compensate for leaders' absence or conflicts with the leaders' work schedule rank as the number one barrier in six out of nine countries at pre-primary level and in two out of four countries in centres for children under age 3. A lack of incentives seems to be of concern to pre-primary leaders in Chile and Korea and to leaders at both levels of education in Israel. In terms of supply of professional development activities, the cost of participation appears to be a particular issue in Chile as indicated by the lighter shadings in the table, but also to leaders in Denmark (with low response rates), Germany and Norway (pre-primary and centres for children under age 3). In the latter three countries, high costs are among the two most important barriers to professional development. Pre-requisites to participation in professional development seem adequate overall, with the exception of Korea. The relevance of professional development on offer appears to be of least concern to leaders in Norway (pre-primary education and centres for children under age 3).

Table 4.3. Barriers to professional development for early childhood education and care centre leaders

Percentage of ECEC centre leaders who reported that they "agree" or "strongly agree" with the following barriers to professional development

	I do not have the pre-requisites	Professional development is too expensive	Professional development conflicts with my work schedule	No time because of family responsibilities	No relevant professional development offered	No incentives for professional development	Not enough staff to compensate my absence
	%	%	%	%	%	%	%
Pre-primary education (ISCED 02)							
Chile	7.1	66.8	61.8	29.1	32.3	58.5	48.1
Germany*	3.7	34.5	25.5	14.3	27.4	17.0	47.4
Iceland	5.2	27.9	42.3	19.3	20.6	27.2	44.0
Israel	4.9	24.0	31.2	44.2	17.8	47.0	49.1
Japan	15.8	42.5	76.3	35.4	30.2	34.7	55.5
Korea	39.1	58.1	86.3	50.8	54.7	71.9	79.7
Norway	2.6	38.9	31.2	19.0	2.0	7.5	38.8
Turkey	10.2	30.0	52.9	31.3	14.9	35.2	35.1
Denmark**	1.0	33.2	27.9	8.9	11.6	15.3	31.1
Centres for children under age 3							
Germany*	1.4	39.1	28.2	13.1	27.0	15.6	52.7
Israel	11.3	41.0	55.0	36.3	20.3	64.8	53.0
Norway	5.1	40.9	28.3	16.1	4.3	11.8	43.2
Denmark**	1.3	34.8	34.2	8.4	17.5	12.1	28.9

* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.
Note: The shading of the cells applies horizontally to the ranking of barriers to professional development within countries. Within each country, the most frequently reported barriers to professional development are indicated in white. The least frequently reported barriers to professional development are indicated in dark blue. Barriers to professional development with which intermediate percentages of leaders "agree" or "strongly agree" are indicated by intermediate colours.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.39.

StatLink https://doi.org/10.1787/888934207804

In terms of the type of professional development that leaders participate in, in-person courses and seminars, conferences, and professional networks appear to be the most common training formats. About one in two centre leaders, on average across countries participating in the survey for pre-primary education, reported having participated in a formal peer and/or self-observation and coaching arrangement over the 12 months prior to the survey. Similarly, more than one in two centre leaders at this level of education reported having participated in an observation visit to another ECEC centre. This is somewhat different from centres for children under age 3, where slightly fewer leaders reported having participated in both of these formats, on average across countries. Peer observation and coaching is particularly common in Korea, while professional networks seem to be well-established in both pre-primary centres and centres for children under age 3 in Denmark (with low response rates) and Norway (Table C.4.40).

The types of professional development that leaders participate in tend to be the same irrespective of level of experience. However, there are some differences between experienced leaders (defined as those with more than three years of experience as an ECEC centre leader) and novice leaders (those with three years or less of leadership experience) (see Annex B for more details). Experienced leaders at pre-primary level are more likely to report participating in in-person courses and seminars as well as in research conferences, on average across countries. Novice leaders, on the other hand, report higher levels of participation in qualification programmes, which may be related to the need to fulfil the necessary qualification requirements for the job (Table C.4.40).

Leaders' leadership practices are influenced by many factors, one of which may be participation in different forms of professional learning and development. While mentoring and coaching may be more effective forms of professional learning (also see Chapter 2), research on the relation between different forms of leadership development and leadership practices and centre and staff outcomes is still limited and inconclusive. Compare, for example, the positive effects found for a mentoring programme for early childhood leaders in Canada on programme quality (Ressler et al., 2016[41]) and the mixed effects found for different development programmes for primary school leaders in the United States (Herrmann et al., 2019[42]; Jacob et al., 2015[43]).

TALIS Starting Strong provides an opportunity to examine whether leaders' engagement in their leadership functions differ with their participation in a specific mode of professional development. In six out of nine countries at pre-primary level, and two out of four for centres for children under age 3, leaders who report having participated in peer observations or coaching report stronger levels of engagement in pedagogical leadership as measured by the scale of leader support for pedagogical learning, and compared to leaders who had not done so (Figure 4.20). Participation in induction or mentoring and online courses or seminars are also associated with higher levels of engagement in pedagogical leadership in a number of countries. This provides some pointers to potentially more effective forms of development, but it could also be that ECEC centre leaders who engage more in pedagogical leadership tend to participate to a greater extent in these forms of professional learning. Courses or seminars attended in person, the most common form of professional development on average across countries at pre-primary level, is not associated with higher values in the pedagogical leadership scale in any of the participating countries.

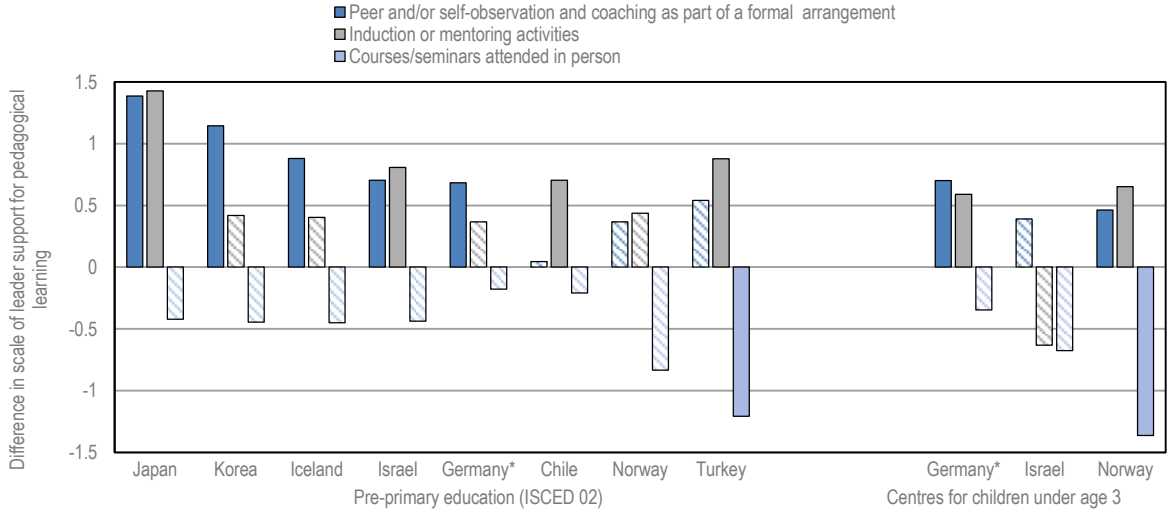
Leaders' working conditions

TALIS Starting Strong asks ECEC centre leaders about their satisfaction with their job and working conditions. While leaders are highly satisfied overall with their jobs, they report relatively low levels of satisfaction with their salaries, in particular in Germany and Israel (pre-primary education and centres for children under age 3), Iceland, and Japan (Figure 4.21). Levels of satisfaction with remuneration are, however, higher in Chile, Norway (both levels of education) and Turkey, with 50% or more of leaders "agreeing" or "strongly agreeing" that they are satisfied with their salary. In Japan, Korea and Turkey, centre leaders are less satisfied with their other contract/employment conditions, compared to the other

countries. In all countries, leaders report that they highly enjoy working at their current ECEC centres, which may be an indication for a good match between leaders and their centres.

Results from the first volume of TALIS Starting Strong show that leaders are generally satisfied with the support they receive from staff at their centres as well as the support received by parents or guardians (OECD, 2019[4]). Centre leaders, however, differ considerably across and within countries in the extent to which they report needing more support from their responsible authority. In Japan and Korea, almost 90% of centre leaders "agree" or "strongly agree" that they require more support. In Chile, almost 74% of leaders report the same level of agreement. By contrast, in Denmark (with low response rates) and Norway, less than 35% of leaders in both pre-primary education and centres for children under age 3 state that they need more support from authorities, and the vast majority of leaders express agreement rather than strong agreement (Table C.4.43).

Figure 4.20. Difference in early childhood education and care centre leaders' engagement in pedagogical leadership, by participation in different modes of professional development



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Note: Solid bars indicate statistically significant coefficients.
Countries are ranked in descending order for participation in "peer and/or self-observation and coaching as part of a formal arrangement".
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.41.

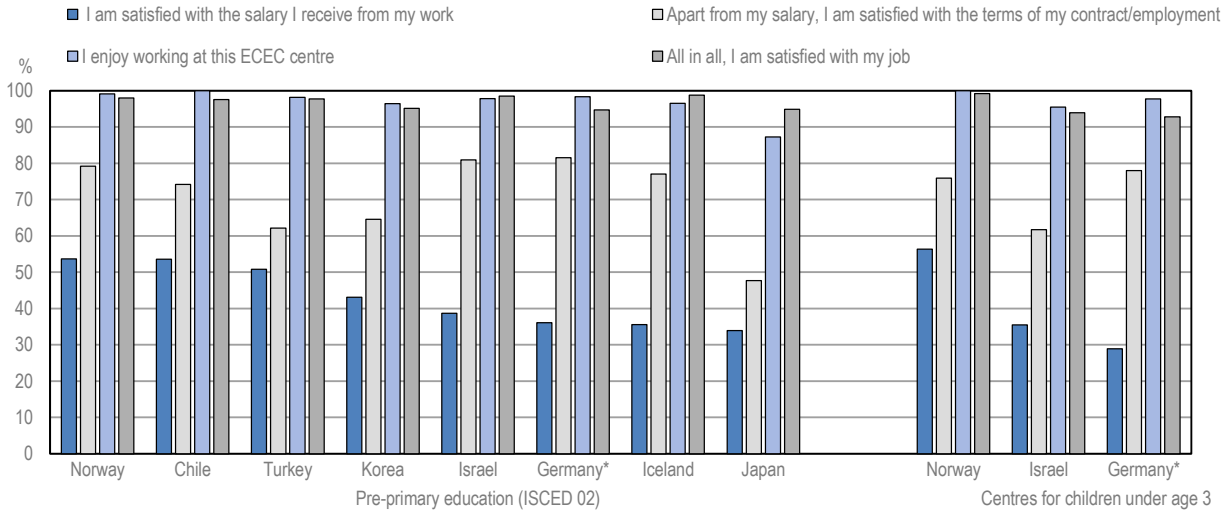
StatLink https://doi.org/10.1787/888934207690

An equity perspective on leaders' engagement in their different functions

Given the potential of early childhood education and care to equalise opportunities in life (Johnson and Jackson, 2019[44]), it seems essential that all ECEC centres have the leadership required to provide a high-quality environment for children to learn and develop. This section explores key aspects of centre leaders' leadership functions and how they differ in relation to two sets of equity characteristics: 1) children's characteristics in terms of socio-economic status and language spoken at home; and 2) centre characteristics in terms of human and material resources and neighbourhood safety (see Annex B).

Figure 4.21. Early childhood education and care leaders' satisfaction with their job and working conditions

Percentage of leaders who "agree" or "strongly agree" with the following statements



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Countries are ranked in descending order of the percentage who "strongly agree" that "I am satisfied with the salary I receive for my work".
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.42.

StatLink https://doi.org/10.1787/888934207709

As highlighted in the chapter's analytical framework (Figure 4.1), administrative and pedagogical leadership constitute essential functions of ECEC centre leaders. Looking at centre leaders' administrative function, differences in the levels of human resources appear to be associated with the time leaders spend on this part of their role. Leaders in centres with low levels of human resources, as perceived by leaders, spend more time on administration than leaders in centres with high levels of human resources in Denmark (with low response rates) and Korea at the pre-primary level, and in Germany and Israel in centres for children under age 3 (Table C.4.44).

The resources available to centres and centre leaders also seem to be associated with pedagogical leadership practices, as perceived by staff, at least in some countries. Notably, pre-primary staff in Denmark (with low response rates) and Iceland in centres with low levels of human resources are less likely to "strongly agree" that their centre leader encourages co-operation among staff to develop new ideas in their practices. In Turkey, by contrast, staff in centres with low levels of human resources are more likely to report strong agreement with statements like "the centre leader ensures that staff take responsibility for improving their practice". Other aspects of pedagogical leadership appear related to shortages in material resources. In Chile and Germany, staff in pre-primary centres with low levels of material resources are less likely to "strongly agree" with statements such as "the leader has a clear vision for the centre" (Table C.4.45).

These results could be interpreted in different ways. For instance, it may be that leaders who report engaging less in their pedagogical role also pay less attention to equipping their centre with pedagogical materials and are less successful in ensuring the ECEC centre is adequately staffed. Or it may be that centres with material and human resource shortages make it more difficult for leaders to engage in pedagogical leadership. In Germany and Israel, pre-primary staff in centres whose leaders "disagree" or

“strongly disagree” that there are places where children can play safely report to a greater extent that their leaders ensure that staff feel responsible for the children’s development and well-being (Table C.4.45).

Looking at differences in staff perceptions of the quality of pedagogical leadership by the composition of centres in terms of children’s socio-economic or linguistic background, there are no consistent associations and levels of agreement are similar overall. In Israel, staff in centres for children under age 3 with a higher share of children from socio-economically disadvantaged homes are more likely to “strongly agree” that their centre leader ensures that staff feel responsible for the children's development, well-being and learning. In Germany, staff in pre-primary centres with a higher share of children whose first language is different from the language(s) used in the centre report lower levels of agreement with statements such as their centre leader ensures that staff take responsibility for improving their practice. Since levels of agreement among staff are relatively high overall across countries, these results suggest that more disadvantaged centres have similar conditions to provide a quality environment for children, at least in terms of leadership (Table C.4.46).

Engagement with parents is a key part of process quality in ECEC centres, so another function of leadership worth revisiting from an equity perspective. As discussed in the section on leadership functions, ECEC centre leaders were asked about the frequency with which their centre engages in formal and informal communication with parents or guardians. Further analysis of the data show that the extent of engagement with parents does not seem to differ much between centres serving children and families of different backgrounds. Considering general practices of formal and informal engagement with parents (see Figure 4.14), the following considers differences concerning “daily”, “weekly” or “monthly” communication for formal engagements, and “daily” or “weekly” communication for informal engagement with parents.

Looking at the extent of centres’ informal communication with parents or guardians, Iceland is the only country with statistically significant differences between centres of different socio-economic composition. Centres with a higher share of children from disadvantaged homes communicate more frequently than centres with a lower share of children from disadvantaged homes, although levels of communication in those centres are still relatively high (Table C.4.47). The extent of centres’ formal communication with parents, for example in the form of parent-staff meetings, differs again only in a few countries, namely in Israel (pre-primary) (by children’s socio-economic composition), and Chile and Norway (centres for children under age 3) (both by children’s language background). In all of these cases, centres with a larger share of children from disadvantaged homes or whose first language is different from the language(s) used in the centre report communicating more frequently with parents than centres with a lower share of children with these backgrounds (Table C.4.48).

The availability of human resources is associated with the level of informal communication in Israel in both pre-primary centres and centres for children under age 3, and in pre-primary centres in Japan. In both countries, centres with low levels of human resources report less of this type of engagement with parents. A shortage in material resources is related with higher levels of informal communication with parents in pre-primary education in Iceland and in centres for children under age 3 in Germany (Table C.4.49).

While the survey was carried out prior to the Covid-19 pandemic, the closure of ECEC centres in countries around the world has required particular responses from centre leaders and staff to keep contact with parents and support them in their care for and education of their children. As the data from the survey suggest, ECEC centres and their leaders and staff in only a few countries already invested in reaching out to parents who may be harder to reach, and not all centres were equally equipped for doing so. A number of countries participating in the survey sought to support ECEC centres as part of their response to the pandemic to ensure educational continuity for children and support parents and children at home, even though the impact of these initiatives remains to be evaluated (Box 4.2).

Box 4.2. Response to the Covid-19 crisis to ensure educational continuity for children in early childhood education and care centres

Chile

Following the closure of early childhood education and care (ECEC) centres in Chile, the Undersecretary of Early Childhood Education has been working together with the Behavioural Unit from the Innovation Hub of the Chilean government to adapt and implement an educational programme that was first put into place at the beginning of 2020. The programme, based on the "Boston Basics" from Harvard University, seeks to support the early learning of children 0-2 years old through the participation of parents and caregivers as primary educators. To this end, the programme communicates and disseminates information (e.g. through website, videos, etc.) on simple and powerful actions that support children's development. In response to the closure of ECEC centres, the programme has been sending information, facts and tips with subtle instructions and advice to parents of children staying at home through text messages. Messaging is based on behavioural insights and communicates five main concepts or ideas to interact with children (*5 principios*): 1) give them all your love; 2) talk to them and sing with them; 3) count, group and share; 4) explore playing; and 5) read and comment child stories/books. The programme is also being evaluated.

Further initiatives have been launched by the main providers of ECEC in the country. The Integra Foundation (operating more than 1 200 ECEC centres) provides families with activities and advice related to the Early Childhood Curriculum Framework through a phone application (IntegrApp) to improve parental engagement in the context of the pandemic. JUNJI, the country's main ECEC provider, has also released an application (Mi Jardín JUNJI) which facilitates communication between parents and their children's teachers. Parents can, for example, share with teachers the activities they are doing with their children then receive feedback on them. Moreover, JUNJI and the Undersecretary of Early Childhood Education have made available a range of digital resources on their websites. The materials target specific ages according the curriculum framework and include, for example, videos and games to improve different areas of children's learning and development (e.g. motor skills, language skills, socio-emotional development, and grouping and counting skills, among others).

Germany

In Germany, where the ECEC sector is regulated and managed at the level of the states (*Länder*), the websites of the respective state ministries provide a range of information and materials that seek to support ECEC staff in continuing to work with parents and provide educational continuity for children during centre closures. In addition to best practice examples for concrete implementation in day care practice, the staff is also provided with background information on media use in order to be able to advise parents on this topic. The general approach has been to emphasise the importance of continuing to work with parents and children, especially with families whose children do not yet attend the day care centre. Many innovative practices have emerged in this context, also from ECEC providers and centres themselves: the use of video-conferencing tools in pedagogical practice, online exchange with parents on a regular basis (i.e. to advise and help families in stressful situations at home) and providing online/offline materials for pedagogical activities at home.

For the example of Bavaria, see: https://www.stmas.bayern.de/unser-soziales-bayern/familien-fachkraefte/corona-fachkraefte.php.

Israel

To support ECEC staff, children and their parents, and provide an emotional, social and educational response during ECEC centre closures, a range of initiatives were put into place in Israel through a collaboration between different parts of the Ministry of Education (e.g. IT, education, psychology) and non-governmental organisations (e.g. teachers' union and national parents' committee).

For teachers and other staff, these measures included setting up special remote meetings and virtual rooms and providing instructions and guidance on how to use these resources; offering teachers daily agendas for remote learning with links and suggestions for remotely organised activities; organising and providing access to information on dedicated portals of education and pedagogy; and carrying out a survey among teachers about their needs and remote learning experiences.

For children aged 3-6, a national broadcast system, which was delivered daily from 9 a.m. to 6 p.m. and optimised for viewing through different media (television, computers and smartphones) provided hundreds of hours of content. ECEC centre staff were given an outline of activities to engage the children and their families in after the broadcasts. Remote personal meetings (virtual rooms) were organised between the teacher and individual children in quarantine as well as special remote meetings (up to 300 participants) between teachers and groups of children (few meetings per day, in diverse content domains). For parents, special remote meetings with psychologists and consultants, as well as meetings of the teachers with parents, were organised. A dedicated online platform was made available to parents.

Pedagogical practices and materials were adjusted to the different ages of children, ECEC sectors (Hebrew- and Arabic-speaking), content domains and balancing knowledge, skills and values.

In addition, guidelines were set to monitor children, their parents and staff in Covid-19 related quarantine, making contact with them, assessing their needs and ensuring educational continuity for children. In a broader view, the needs of each child, family and community were mapped, in order to provide suitable responses, mainly from a pedagogical perspective but also from social and emotional ones as well. This allowed, for example, to map the cases where consulting with psychological services has been required, to design personalised pedagogical support and to take into account constraints (e.g. related to specific community needs).

Turkey

Following the closure of educational institutions to prevent the spread of the virus, the Ministry of National Education launched a remedial distant learning strategy. Providing content and materials for early childhood education proved more challenging than for other parts of the education system, which already had open source materials in place through an Education Information Network (*Eğitim Bilişim Ağı*, EBA). This digital platform provided distance learning classes for students, while households without Internet access could access teaching through the national television and radio. To limit screen time, no dedicated channel was set up for early childhood education, but breaks between classes for primary school were used to broadcast activities for pre-school children. A separate channel (*TRT Çocuk* [TRT Kids]) broadcasts a wide range of educational content for children. In addition, pre-school teachers supported parents by sending activities to be done at home, and by running live broadcasts and activities with children. School leaders helped co-ordinate these initiatives.

Source: Information on country practices and policies provided by the respective national authorities as of July 2020.

Policy pointers and examples

This chapter presented findings from TALIS Starting Strong about ECEC centre leaders' leadership and management of their institutions. It analysed the scope of centres and leaders to shape the use of their resources and the design of their curriculum and policies, examined how centre leaders engage in their different leadership functions, and how they structure their leadership. The chapter also analysed the ways in which centre leaders' practices relate to staff working conditions and professional learning as well as to staff's self-efficacy beliefs and use of pedagogical practices in the centre. Leaders' professional development and working conditions were also assessed.

These findings point to different areas that policy may address to make the most of ECEC centre leaders and ensure they are in a good position to guide the work of staff and shape centre environments for children to learn and develop:

1. Support centre leaders in fulfilling their multiple functions, by providing them with the necessary resources and quality working conditions, as well as support from staff.
2. Support the professional learning of centre leaders, by investing in new models of leadership development and facilitating continuous professional development.
3. Promote the engagement of ECEC centre leaders in planning and facilitating professional development for their staff, for example by involving leaders in assessing skills needs in their centres. These issues are discussed in more detail in Chapter 2.
4. Facilitate leadership among staff, by defining clearer pathways for career progression and arranging working time so staff can get involved without this creating a burden on them. This may include creating a leadership pipeline through staff development and defining clearer pathways for career progression. These issues are discussed in Chapters 2 and 3.

The first two policy pointers are discussed below.

Supporting centre leaders in fulfilling their multiple functions and providing quality working conditions

The leadership of ECEC centres entails a variety of functions and responsibilities (see Figure 4.1). Leaders need a clear understanding of their role in order to best fulfil their diverse responsibilities. Leadership preparation and development have an important role to play in this by setting expectations and helping centre leaders to develop the necessary skills to fulfil the many demands on their role. Strong pedagogical leadership may help support staff feeling confident in their ability to foster children's learning and development and to support the use of specific practices within the centre. While leadership practices need to be adjusted to the needs of specific centre contexts, leading the pedagogical work of ECEC centres should thus make up a considerable part of ECEC centre leadership in practice. ECEC centre leaders could be made more clearly responsible for setting the conditions for staff's professional development or for monitoring children's learning and development to ensure that they focus on these responsibilities as part of their role. Regular external evaluations that provide formative feedback to centre leaders on pedagogical aspects may also be a tool for fostering pedagogical leadership.

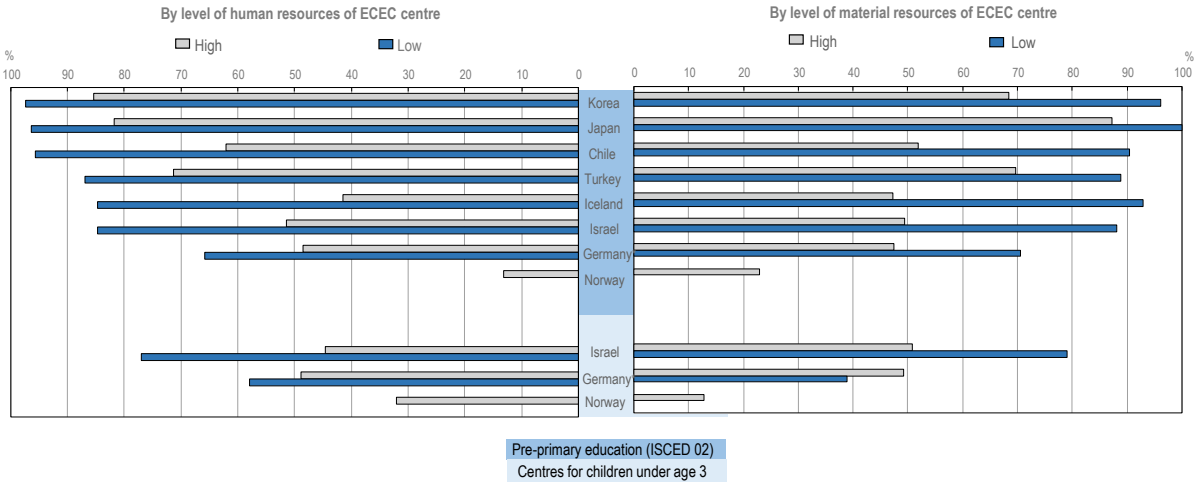
The size of centres has been demonstrated to be an important factor influencing the way centre leaders spend their time, be it on interactions with children (see Figure 4.7), administrative tasks (see Figure 4.8) or pedagogical leadership. In some countries, the size of centres also appears to influence the overall time leaders report working at the centre. Larger centres may thus require different supports and leadership structures to enable centre leaders to fulfil their many roles and ensure the smooth operation of centres. Similarly, leadership practices seem to be associated with the resources available to centres, be they in the form of materials and space or staff. While the direction of this association cannot be determined from the analyses carried out here, ensuring that the allocation of material and human resources responds to

the specific needs and challenges of each ECEC centre seems an important condition for effective administrative and pedagogical centre leadership.

Indeed, when asked whether they need more support from their local, municipality/regional, state or national/federal authorities, leaders of centres with low levels of human or material resources are consistently more likely to "agree" or "strongly agree" (Figure 4.22).

Figure 4.22. Leaders' need for support from authorities, by level of resources of the early childhood education and care centre

Percentage of leaders who "agree" or "strongly agree" that they need more support from local, municipality/regional, state or national/federal authorities



* Estimates for sub-groups and estimated differences between sub-groups need to be interpreted with care. See Annex A for more information.
Countries are ranked in descending order of the percentage of leaders who "agree" or "strongly agree" in ECEC centres with low levels of human resources.
Source: OECD (2019[22]), *TALIS Starting Strong 2018 Database*, http://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm, Table C.4.50.

StatLink https://doi.org/10.1787/888934207728

Distributed leadership structures may help centre leaders to fulfil their different functions and strengthen the quality of leadership in ECEC centres overall. For instance, staff members within the centre may take on leadership for different aspects, such as mentoring colleagues or engaging with parents. Some countries participating in the survey have created specific middle leadership roles in this respect or various leadership positions with differentiated roles (Box 4.3). Keski-Rauska et al. (2016[45]) describe a model of shared leadership from a municipality in Finland through which leaders work in pairs to strengthen both pedagogical and administrative leadership, the necessary conditions this requires, and the challenges involved. While staff leadership may support leaders in their role (see Figure 4.16), the chapter has also shown that a more horizontal distribution of leadership is associated with greater levels of collaboration among staff (see Figure 4.18) and with higher levels of staff satisfaction and well-being (see Figure 4.19).

Box 4.3. Supporting centre leaders in their functions and strengthening leadership capacity in early childhood education and care centres

Baden-Württemberg (Germany)

Within the framework of the Good Childcare Act (*Gute-Kita-Gesetz*), the federal government enables the states (*Länder*) to further develop day care for children and provides them with financial resources for this purpose. The funding period is so far set until 2022, with a total investment of EUR 5.5 billion. The framework of the Good Childcare Act describes various fields of application and interventions, but the 16 states can decide which and how many fields are chosen, and how much funding to allocate to each of them.

The state of Baden-Württemberg, for example, has allocated 90% of its budget to strengthen the role and tasks of early childhood education and care (ECEC) centre leaders and defines the following objective: "Ensure management time and qualify leaders". In addition, ECEC centres in Baden-Württemberg, regardless of the size and number of groups, should be given at least six hours per week for leadership tasks. ECEC centres with two or more groups should be granted an additional two hours of leadership time per group and week. In addition, the state of Baden-Württemberg plans to offer further training for ECEC centre leaders with a basic qualification and optional modules on topics such as communication and the management of conversations.

For further information on the Good Childcare Act, see: https://www.gute-kita-portal.de. For the example of Baden-Württemberg, see: https://www.gute-kita-portal.de/gute-kita-gesetz/bundeslaender/baden-wuerttemberg.

Israel

In 2013, the Ministry of Education enacted a reform related to the resourcing of the ECEC sector. The reform encompassed three main elements: 1) an additional staff member for ECEC centres with over 30 children aged 3-4; 2) a differential budget to enrich the structural and pedagogical environment; and 3) support from a leading teacher.

A leading teacher is a teacher who stands out in their educational activities, and is therefore appointed by the instructor/supervisor (district level positions) to serve as a leading teacher, alongside their duty as a teacher who manages an ECEC centre by themselves. Each leading teacher supports teachers from 10-15 ECEC centres (within a geographical district), for 30 hours per year (recognised for promotion and salary increase), where they mainly support the professional needs of teachers and promote community-related issues. To this end, a leading teacher is required to first participate in a year-long pre-determined training (pre-service to this duty), and undergoes continuous professional development activities (in-service to this duty). There are currently about 1 000 leading teachers (out of 22 000 teachers in pre-primary centres – leaders and substitutes, so their share is approximately 5% of all teachers).

The leading teacher role is considered as middle-level leadership (higher than a teacher, but lower than instructor/supervisor), which offers teachers a career development path. While both instructor and supervisor are district level positions, there is a hierarchy: the supervisor, who is more senior than instructor, is responsible for approximately 100-120 ECEC centres within a certain geographical district. The instructor is either a specialist in a given content domain or more a multi-disciplinary expert. Instructors guide and instruct the staff of several ECEC centres within the district, depending on the relevance of their expertise to teachers' needs in a given centre.

Norway

As defined in the country's Framework Plan for Kindergartens (*Rammeplan for barnehagen*), there are two specific leadership roles in ECEC centres in Norway: head teachers and pedagogical leaders.

Head teachers, who act as centre leaders, carry the day-to-day responsibility for pedagogical practices, staff and administration. Their core tasks are thus administrative and pedagogical leadership, as well as human resource management and organisational development. Given their specialised role, they are often less in contact with children and parents than the rest of the centre staff.

Besides the head teacher, there are pedagogical leaders, who are trained kindergarten teachers with the responsibility to lead a team working with a group of children. The pedagogical leader oversees the process of planning, implementing, documenting, assessing and developing the work taking place with the group of children or in the areas she/he is tasked with supervising.

In practice, pedagogical leaders and the head teacher have meetings where they discuss and work together to achieve the common goals of the ECEC centre.

In smaller ECEC centres, both leadership roles may be combined, and the centre leader may work partly as head teacher and partly as pedagogical leader. The definition of the head teacher role in Norway, which establishes administration as a core task rather than a duty on top of other responsibilities, such as work with children, may be part of the reason why administration is perceived to be less of a source of stress among centre leaders in Norway responding to the survey.

For further information, see https://www.udir.no/globalassets/filer/barnehage/rammeplan/framework-plan-for-kindergartens2-2017.pdf

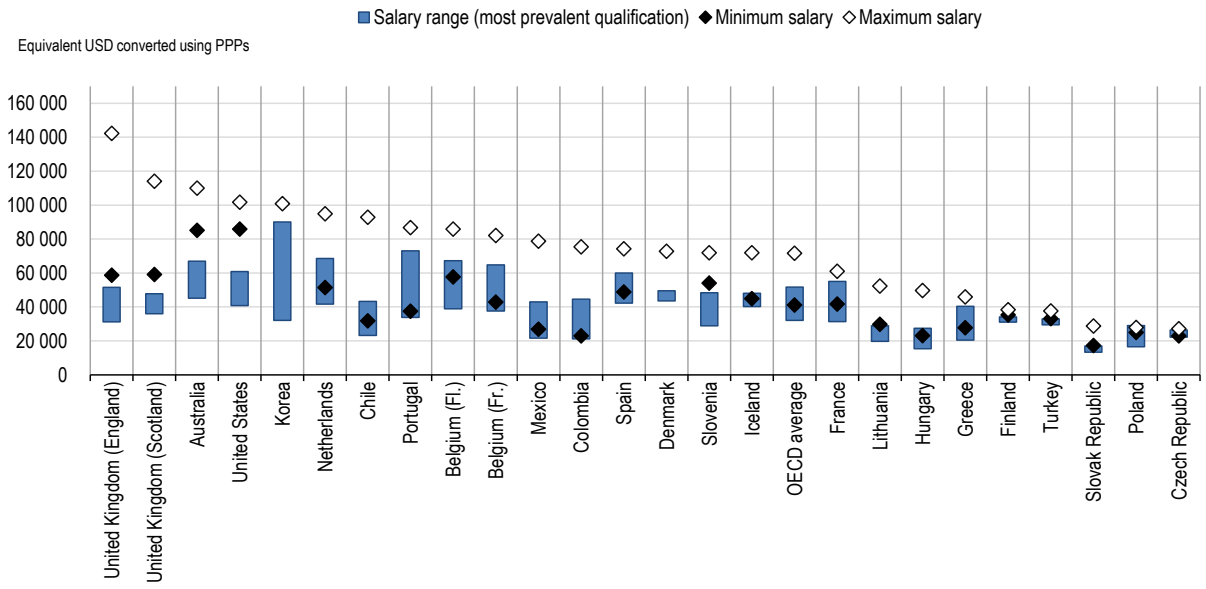
Source: Information on country practices and policies provided by the respective national authorities as of July 2020.

Too much administrative work, such as filling out forms, represents a significant source of stress for large shares of centre leaders in many countries participating in the survey. Policy may thus need to pay greater attention to how to relieve the administrative burden on leaders, for instance through investments in data management systems or the availability of administrative support.

While centre leaders are satisfied overall with their jobs, they would benefit from greater recognition of the importance of their work (see Chapter 3 on raising the status of the ECEC profession). This includes a review of remuneration and contract conditions, with which centre leaders report being less satisfied (see Figure 4.21). Data from OECD *Education at a Glance* provide another perspective on salary levels across OECD and partner countries with available data (Figure 4.23). As the figure shows, in a number of countries, opportunities for leaders to progress in the salary scale are very limited (e.g. Finland, Poland and Turkey). In other countries, such as Chile, Colombia and England in the United Kingdom, however, the maximum salaries of school leaders differ significantly from minimum salaries, which may help attract and retain staff in centre leadership roles. In these countries, maximum salaries are more than twice as high as minimum salaries. The figure also provides a comparison of leaders' salaries with those of teachers. In a number of countries, such as France or Greece, remuneration between both roles does not differ considerably, potentially making leadership positions less attractive.

Figure 4.23. Statutory salaries for pre-primary school leaders and teachers, 2019

Based on teachers with most prevalent qualifications and school leaders with minimum qualifications



Notes: *Education at a Glance* refers to school leaders as school heads. The definition of teachers' most prevalent qualifications is based on a broad concept, including the typical ISCED level of attainment and other criteria. In many cases, the minimum qualification is the same as the most prevalent qualification. Finland: Data on pre-primary teachers include the salaries of kindergarten teachers who are the majority. France: For 2018/19, the methodology was revised. The new data apply to school leaders in charge of schools with ten classes or more, i.e. with teaching responsibilities accounting for 50% or less of their working time, in line with the international guidelines. United States: Actual base salaries. For Denmark and Korea, data for minimum statutory school leader salaries are missing.
Countries and jurisdictions are ranked in descending order of maximum salaries of school leaders.
Source: OECD (2020[46]), *Education at a Glance 2020: OECD Indicators,* https://doi.org/10.1787/69096873-en.

StatLink https://doi.org/10.1787/888934207747

Table 4.4 shows the levels of decision making for setting pre-primary school leaders' salaries and the way compensation is structured in countries participating in TALIS Starting Strong. This gives an idea of avenues for making compensation more competitive (e.g. compared to other types of staff). While salaries are the result of collective bargaining processes in Iceland and Norway, they are centrally set in Chile, Israel, Korea and Turkey. In Japan, salaries are determined locally. In three countries, a separate salary scale is in place for leaders, while in another three countries, leaders receive a specific allowance in addition to their teacher salary.

Table 4.4. Structure of compensation system for pre-primary school leaders, 2019

Determining school leaders' base salaries and additional payments in public institutions

	Authority level for determination of statutory salaries	Statutory salaries: Differentiation from teachers	Amount of statutory salary varies according to characteristics of		Amount of school leader allowance varies according to characteristics of	
			Schools	School leaders	Schools	School leaders
Chile	Central/state	Teacher salary + leader allowance	No	Yes	Yes	No
Denmark	More than one	Leader salary (incl. allowance)	Yes	Yes	Yes	Yes
Germany	..	..	..	..	..	..
Iceland	Collective/other	Leader salary (incl. allowance)	Yes	Yes	No	No
Israel	Central/state	Teacher salary + leader allowance	No	Yes	No	Yes
Japan	Local	..	..	..	..	..
Korea	Central/state	Teacher salary + leader allowance	x	Yes	x	Yes
Norway	Collective/other	..	x	x	x	x
Turkey	Central/state	Leader salary (incl. allowance)	No	Yes	No	Yes

..: missing; x: not applicable.

Notes: *Education at a Glance* refers to school leaders as school heads. Israel and Norway updated information provided in *Education at a Glance*. In Israel, statutory salaries differ mainly by years of experience and participation in professional development, which affect teachers' rank. The school head allowance varies mainly by years of experience as leader managing a centre. In Norway, collective agreements are supplemented by local bargaining processes.

Source: OECD (2020[46]), *Education at a Glance 2020: OECD Indicators,* https://doi.org/10.1787/69096873-en.

Supporting the professional learning of centre leaders, by investing in innovative models of leadership development

Preparing ECEC centre leaders effectively for their different functions and roles, and providing them with opportunities to further develop their skills according to their needs, is a further important step to ensure high-quality leadership in administrative, pedagogical and other functional areas.

As analyses in this chapter suggest, while the levels of qualification generally do not seem associated with leadership practices (see Table 4.1), the content of initial training and education for centre leaders may help emphasise specific leadership functions over others. In some countries, leaders whose education and training included a course on early childhood reported spending less time on administration. In other countries, leaders trained in early childhood or pedagogical leadership reported spending more time on their pedagogical leadership function than those not trained in these areas (see Table 4.1).

Given the importance of pedagogical leadership for process quality, leaders should have opportunities to learn about issues related to pedagogical leadership, such as the observation of staff practices with children, effective feedback based on observations and collaborative culture, as well as early childhood development, as part of their preparation and continuing professional development. As highlighted in Chapter 2, there seem to be benefits for broad training of staff, that is ambitious curricula for initial preparation and in-service training that cover a range of thematic areas and the possibility for in-service training to update knowledge and skills in areas covered as part of pre-service training.

Concerning in-service training, responses from centre leaders suggest that more traditional forms of training, such as courses and conferences, are more widespread than models that involve observation of leadership practices and learning among peers. This is also evident from some research from national contexts. In Germany, for example, short courses of up to 3 days made up 91% of provision according to a survey, while quality circles or team supervision made up only 20-33% (Beher and Walter, 2010[47]).

However, while formats such as peer observation and mentoring are associated with stronger engagement in pedagogical leadership, this is not the case for more traditional forms of training. This suggests ECEC centre leaders may benefit from different forms of professional learning, although more still needs to be understood about effective leadership development. Box 4.4 provides some examples of practices of leadership development in countries participating in the survey.

Moreover, leadership development does not seem to differentiate sufficiently between the needs of novice and experienced leaders. For instance, the share of novice leaders taking part in induction or mentoring activities does not differ from that of experienced leaders, although arguably, novice leaders may benefit the most from such activities as they take on a leadership role. Time resources represent an important barrier to leaders' participation in professional learning (see Table 4.3). To enable leaders to participate in professional development, policy should consider ways to create time in leaders' schedules for engaging in continuous learning. Where costs or incentives appear to hinder ECEC centre leaders from engaging in professional learning, policy may review existing financing mechanisms and how participation can become more attractive to centre leaders.

Box 4.4. Leadership development strategies for early childhood education and care centre leaders

Israel

Teachers are the leaders of the early childhood education and care (ECEC) centre in all regards. In their first year in the ECEC system as teachers (where they are referred to as "interns"), the transition from the training phase to actual work occurs. There are four main routes to support novice teachers in the ECEC system, some of which are limited to the first year in the profession:

- Interns are required to attend a teaching specialisation workshop (internship). These groups are usually guided by professional and senior mentors from the field of educational counselling and pedagogical training at the college. Recently, the internship has been jointly led by the Ministry of Education and teacher training colleges (HAMAMA, Greenhouse Project), which has enabled the integration of expertise from both organisations.
- Interns are also supervised, supported and evaluated by a mentor teacher during their working days in the ECEC centre. Mentor teachers, who have undergone a dedicated course during their pre-service training, observe the interns and provide weekly feedback and guidance, as well as an annual assessment.
- In another project (BERESHIT, Genesis), teachers in their first years are supported by instructors, who observe them in the kindergarten and conduct workshops and seminars.
- Leading teachers also support novice teachers in their first years.

These four routes, combined and separately, provide novice teachers with support and solutions tailored to their local and personal needs, related to pedagogy, administrative, practice, management and procedural aspects of their role.

In addition, assessment tools have been developed for the evaluation of both interns and more experienced teachers, which can be viewed as both a practical guide and professional standards.

Promotion or advancement of teachers to higher leadership roles (such as mentor teacher, leading teacher, instructor, supervisor) is contingent on professional rank and meeting pre-determined criteria relating to formal education and years of experience as well as accomplishing professional development and training activities dedicated to and focusing on the leadership role.

Japan

ECEC staff, including centre leaders, in Japan have a deep-rooted tradition of "lesson study" in which they observe each other's practices, then discuss them to improve their knowledge, skills and practices. While they are also provided with other opportunities for in-service training, this constitutes an important activity for their professional development. In addition, some practices are widely open to other ECEC centres' staff, supervisors and college professors ("open lesson study").

In addition to in-house workshops of ECEC centres, many local governments and ECEC associations organise professional development activities to observe ECEC practices, reflect on and discuss them, in which other ECEC centres' staff, supervisors and college professors participate. Since both ECEC staff and other participants have merits, these kinds of professional development activities have been widely adopted in local governments and ECEC associations.

Norway

Almost all ECEC centre leaders have a kindergarten teacher education as part of their pre-service education. As part of their in-service training, centre leaders can apply to participate in a dedicated ECEC leader training programme. The Directorate for Education and Training funds the place in the programme, while the ECEC provider/owner pays for their employees' travel and expenses. The programme is part time over 3 semesters and results in 30 study credits and can be included as part of a Masters in leadership. The centre leader continues to work in the kindergarten while attending the programme. The programme's content emphasises organisational development and pedagogical and administrative leadership. Evaluations of the programme show that participants are satisfied with the programme, which they perceive as useful.

Source: Information on country practices and policies provided by the respective national authorities as of July 2020.

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Notes

1 Centre leaders are defined as those individuals with the most responsibility for the administrative, managerial and pedagogical leadership in their ECEC centre. In smaller centres, centre leaders might also spend part of their time working with children (Sim et al., 2019[12]).

2 A publicly managed centre is a centre whose leader reported that it is managed by a public education authority, government agency or municipality. A privately managed centre is a centre whose leader reported that it is managed by a non-governmental institution (e.g. a church, synagogue or mosque; a trade union; a business; or any other private institution or person). Privately managed centres may be publicly subsidised or not. For more details, see Box 5.1 in the first volume of TALIS Starting Strong 2018 (OECD, 2019, p. 188[4]).

3 Based on national data provided by the Ministry of Education of Chile, in 2019, all of the country's 3 521 leaders of early childhood centres for children under age 3 were female. In pre-schools and schools for children aged 4-6, 3 366 or 36% of the country's 9 341 leaders were male, 5 975 or 64% were female.

Annex A. Technical notes on sampling procedures, response rates and adjudication for TALIS Starting Strong 2018

Sampling procedures and response rates

The objective of the Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) 2018 was to obtain a representative sample in each participating country of staff and leaders providing early childhood education and care (ECEC) for each level of ECEC in which the country participated. The international sampling plan for TALIS Starting Strong used a stratified two-stage probability sampling design. This means that staff (second-stage units, or secondary sampling units) were randomly selected from the list of in-scope staff in each of the randomly selected ECEC centres (first-stage units, or primary sampling units). The leader at each centre (i.e. the person with the most responsibility for administrative, managerial and/or pedagogical leadership) was automatically selected for participation as well. For countries with integrated ECEC systems that participated in data collection for both pre-primary education and settings for children under age 3, programmes serving both age groups were split between the two samples so that each programme could be selected for participation in only one level of ECEC. A more detailed description of the survey design and its implementation can be found in the *TALIS Starting Strong 2018 Technical Report* (OECD, 2019[1]).

Staff in pre-primary education settings (ISCED Level 02) are those who, as part of their regular duties in their centre, provide learning opportunities in programmes at ISCED Level 02. Staff for children under age 3 are those who, as part of their regular duties in their centre, provide learning opportunities for children in this age group. Staff who provide learning opportunities for both target populations in their centres are included in the TALIS Starting Strong universe. There is no minimum cut-off for how much time staff need to be engaged at either level of ECEC.

The international target population of TALIS Starting Strong restricts the survey to those staff and leaders who work in officially registered settings providing ECEC. Centres exclusively for children with special educational needs are deemed out of scope. Also considered out of scope are: short-term substitute educators (to replace staff on sick leave); nannies and other people involved in informal arrangements; volunteers who occasionally came in to provide a special activity; auxiliary staff (e.g. cleaners, cooking staff) who did not interact regularly in a pedagogical manner with the children; and medical and therapeutic staff (e.g. speech therapists, occupational therapists) whose work was primarily non-pedagogical.

For national reasons, participating countries could choose to restrict the coverage of their national implementation of TALIS Starting Strong. For example, all participating countries decided to exclude home-based settings (within the homes of the respective staff) from the pre-primary education universe, while some countries included these settings in the universe of settings providing services for children under age 3. This report excludes home-based programmes for children under age 3, focusing only on centre-based ECEC to enhance comparability across the two levels of ECEC provision. Participating countries were invited to keep sample exclusions to a minimum by keeping the national survey population

to at least 95% of ECEC staff. The national project manager for each country was required to document the reasons for any exclusions.

Sample size requirements

For both levels of ECEC, the same requirements for sample size and precision of estimates were established. To allow for reliable estimation and modelling while permitting some amount of non-response, TALIS Starting Strong 2018 set the minimum number of centres per country for each population of interest (pre-primary education and settings for children under age of 3) at 180. Within each centre, the minimum number of staff members selected was eight. If there were fewer than eight staff members in a centre, then all staff members were selected. Participating countries could choose to augment their national sample by selecting more centres, or by selecting more staff within each selected centre, or by increasing both. In some cases, because the average number of staff in the centres was lower than the number expected in the international plan, the number of centres sampled was increased.

Adjudication process

The basic principle that guided the adjudication was to determine, for each participating country and for each level of ECEC, whether the data released to the countries are fit to provide policy-relevant, robust international indicators and analysis on staff and leaders. To establish fitness for use, a number of quality assurance processes were designed and activated throughout the survey process. Some processes relied on expert advice and opinion, some on qualitative information and learned judgement, some on quantitative information. More detailed information is available in the *TALIS Starting Strong 2018 Technical Report* (OECD, 2019[1]).

During the adjudication session, each individual data set (i.e. the combination of participating countries and levels of ECEC) was submitted to the same examination. In addition, both staff participation and leader participation were adjudicated for each combination of participating countries and levels of ECEC.

The issues evaluated concerned the questionnaire's adaptation to national context, translation and verification, quality of the sampling frame, handling of out-of-scope and refusal units (i.e. staff and/or centres), within-centre sampling, data collection, data cleaning, the reports of quality observers, participation rates, and overall compliance with the technical standards (see the *TALIS Starting Strong 2018 Technical Report* (OECD, 2019[1])). Once each survey process was assessed, a recommended rating was formulated, accounting for the participation rates and for any unresolved issues. The adjudication rules, based on participation rates for leaders and staff, are shown in Tables A.1 and A.2.

Table A A.1. Adjudication rules for centre or centre leader data in TALIS Starting Strong 2018

Centre participation (returned leader questionnaires)		Risk of centre non-response bias	Rating
Before replacement	After replacement		
≥ 75%	≥ 75%		Good
≥ 50% but < 75%	≥ 75%		Fair (A)
	≥ 50% but < 75%	Low	Fair (C)
		High	Poor (D)
< 50%			Insufficient

Table A A.2. Adjudication rules for staff data in TALIS Starting Strong 2018

Centre participation (minimum of 50% staff participation)		Staff participation after centre replacement	Risk of staff non-response bias	Rating
Before replacement	After replacement			
≥ 75%	≥ 75%	≥ 75%		Good
		≥ 50% but < 75%		Fair (A)
≥ 50% but < 75%	≥ 75%	≥ 75%		Fair (B)
		≥ 50% but < 75%	Low	Fair (C)
			High	Poor (D)
≥ 50% but < 75%	≥ 50% but < 75%			Poor (E)
< 50%	≥ 75%			Poor (F)
< 50%	< 75%			Insufficient

The following is a guide to help data users appreciate the limitations on use or quality:

- **Good:** The participating country's data can be used for all reporting and analytical purposes and should be included in international comparisons.
- **Fair (A):** National and subnational estimates can be produced. Some staff characteristics may suffer from larger standard errors (s.e.), hence the warning "Fair". No additional warnings to users appear necessary.
- **Fair (B, only for staff data adjudication):** National and subnational estimates can be produced. Some subnational estimates may be of lower precision (larger s.e.) if sample size is locally low, hence the warning "Fair". No additional warnings to users appear necessary.
- **Fair (C):**
  - National and subnational estimates can be produced.
  - Some subnational estimates may be of lower precision (larger s.e.) if sample size is locally low, hence the warning "Fair". But a note on data quality could appear pointing to the outcome of the non-response bias analysis.
  - Since centre participation is somewhat lower than under (B), comparing subnational estimates should be done with care, as some of those results are based on few centres.
  - Comparing small subnational estimates with similar groups from other participating countries is unlikely to uncover any statistically meaningful differences, as s.e. are likely too large.
- **Poor (D):**
  - In addition to the warnings issued for the previous category, a note should warn users of indications of non-response biases in some estimates.
  - Comparisons of subnational estimates should be limited to groups with larger sample sizes.
  - At this point, the sample represents between 37% and 56% of the workforce, from a rather small sample of centres.
  - Comparisons with similar groups in other participating countries would not be encouraged.
- **Poor (E, only for staff data adjudication):** Subnational estimates would not be recommended. There should be a note pointing out the difficulty of obtaining a representative sample of centres.
- **Poor (F, only for staff data adjudication):** Limitations similar to those of line E, but there should be a note pointing out the difficulty of obtaining at least 50% participation of the selected sample of centres. There are risks of having a non-representative sample of centres.
- **Insufficient**: Weights should not be calculated for any official tabulations. Hence, data should not be incorporated in international tables, models, averages, etc.[1]

The participation rates and the adjudication rating per participating country and level of ECEC are presented in Tables A.3-A.6. These tables display the participation rate estimates that were the most favourable for the adjudication rating. The most favourable estimates could have been weighted or unweighted depending on the characteristics of the country, the staff and leader population, and the level of ECEC.

Notes regarding use and interpretation of the data

This section lists issues to be noted regarding the sampling or field operations that should be considered when interpreting the data reported for the following countries:

- **Denmark**
  - Low response rates during the survey may have resulted in bias in the estimates reported, thus limiting comparability of the data.
  - The data collection period was extended due to a public strike.
- **Germany**
  - The data collection period was reopened for a few weeks to encourage additional centres and staff to participate.
  - Non-response bias analysis failed to show that there is not a high risk of centre and staff non-response bias.
  - In two centres serving children under age 3, staff listings were found to be incorrect; these centres were considered as “non-participant”.
- **Iceland**
  - In Iceland, a shortage of certified ECEC teachers means that staff without this credential (i.e. assistants) may be serving as teachers in some settings. Although data were collected on these role divisions, the distinction was unclear in many instances. Therefore, this overall role distinction is not used in TALIS Starting Strong because it is not meaningful for Iceland.
- **Israel**
  - For pre-primary education settings (ISCED Level 02), ultra-Orthodox centres were excluded after the survey because of the low participation rates in this sector. The exclusion rate therefore exceeded 5%.
  - The data collection period was extended for centres serving children under age 3 to accommodate the split system in Israel.
- **Korea**
  - The data collection period was extended to encourage additional centres and staff to participate.
- **Norway**
  - Home-based ECEC settings were excluded. The exclusion rate therefore exceeded 5%.
- **Turkey**
  - Centres under the responsibility of the Ministry of Family, Labour and Social Services were excluded. The exclusion rate therefore exceeded 5%.

Table A A.3. Settings for children under age 3: Centre leader participation rates and recommended ratings

Participating country	Number of participating leaders	Estimated size of leader population	Leader participation before replacement (%)	Leader participation after replacement (%)	Recommended rating
Germany	273	48 699	50.7	57.2	Poor
Israel	226	5 042	93.3	97.4	Good
Norway	163	4 916	66.8	92.6	Fair
Denmark**	93	2 852	35.4	47.5	Insufficient

** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.

Table A A.4. Settings for children under age 3: Staff participation rates and recommended ratings

Participating country	Number of participating centres	Number of participating staff in participating centres	Estimated size of staff population	Centre participation before replacement (%)	Centre participation after replacement (%)	Staff participation in participating centres (%)	Overall staff participation (%)	Recommended rating
Germany	272	1 171	268 310	50.3	57.0	89.7	51.1	Poor
Israel	225	1 113	23 201	90.7	95.3	97.4	92.8	Good
Norway	161	938	35 514	67.1	91.1	86.5	78.8	Fair
Denmark**	87	563	28 303	31.7	43.7	86.1	37.6	Insufficient

** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.

Table A A.5. Pre-primary education (ISCED Level 02): Centre leader participation rates and recommended ratings

Participating country	Number of participating leaders	Estimated size of leader population	Leader participation before replacement (%)	Leader participation after replacement (%)	Recommended rating
Chile	228	9 426	94.8	98.6	Good
Germany	247	51 942	52.8	69.0	Poor
Iceland	178	236	75.4	75.4	Good
Israel	416	12 175	97.4	98.3	Good
Japan	216	35 577	87.2	98.6	Good
Korea	188	22 722	61.5	76.1	Fair
Norway	152	4 877	64.6	83.8	Fair
Turkey	340	22 380	99.8	99.8	Good
Denmark**	102	3 034	40.9	55.3	Insufficient

** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.

Table A A.6. Pre-primary education (ISCED Level 02): Staff participation rates and recommended ratings

Participating country	Number of participating centres	Number of participating staff in participating centres	Estimated size of staff population	Centre participation before replacement (%)	Centre participation after replacement (%)	Staff participation in participating centres (%)	Overall staff participation (%)	Recommended rating
Chile	228	1 349	58 060	94.0	98.3	98.8	97.1	Good

Germany	250	1 401	404 202	50.3	57.0	89.7	51.1	Poor
Iceland	204	1 378	3 624	87.0	87.0	84.8	73.8	Good
Israel	409	1 987	43 478	95.7	96.7	97.4	94.1	Good
Japan	216	1 616	307 070	87.2	98.6	99.6	98.2	Good
Korea	182	927	91 586	59.7	75.4	96.8	72.9	Fair
Norway	144	815	39 107	60.7	78.7	83.8	65.9	Fair
Turkey	340	1 605	65 191	99.7	99.7	99.6	99.2	Good
Denmark**	85	544	28 831	32.8	45.7	84.3	38.5	Insufficient

** Low response rates in the survey may result in bias in the estimates reported and limit comparability of the data.

References

OECD (2019), *TALIS Starting Strong 2018 Technical Report*, OECD Publishing, Paris, http://www.oecd.org/education/talis/TALIS-Starting-Strong-2018-Technical-Report.pdf. [1]

Note

1 At its November 2018 meeting in Paris, the TALIS Starting Strong 2018 Technical Advisory Group recommended that data from participating countries that had not reached 50% participation should nonetheless be weighted and displayed in tables.

Annex B. Technical notes on analyses in this report

Use of staff and centre weights

The statistics presented in this report were derived from data obtained through samples of centres, centre leaders and staff (see Annex A). For these statistics to be meaningful for a country, they need to reflect the whole population from which they were drawn and not merely the sample used to collect them. Thus, survey weights must be used in order to obtain design-unbiased estimates of population or model parameters.

Final weights allow the production of country-level estimates from the observed sample data. The estimation weight indicates how many population units are represented by a sampled unit. The final weight is the combination of many factors, reflecting the probabilities of selection at the various stages of sampling and the response obtained at each stage. Other factors may also come into play as dictated by special conditions to maintain the unbiasedness of the estimates (e.g. adjustment for staff working in more than one centre). A detailed description of the sampling and weighting procedures can be found in the *TALIS Starting Strong 2018 Technical Report* (OECD, 2019[1]).

Statistics in this report that are based on the responses of centre leaders and that contribute to estimates related to centre leaders were estimated using centre weights (CNTRWGT). Results based only on responses of staff or on responses of staff and leaders (i.e. responses from centre leaders were merged with staff responses) were weighted by staff weights (STAFFWGT).

Standard errors and significance tests

Standard errors

The statistics in this report represent estimates based on samples of staff and centres, rather than values that could be calculated if every staff member and leader in every country had answered every question. Consequently, it is important to measure the degree of uncertainty of the estimates. In TALIS Starting Strong, each estimate has an associated degree of uncertainty that is expressed through a standard error. The use of confidence intervals provides a way to make inferences about the population statistics in a manner that reflects the uncertainty associated with the sample estimates. From an observed sample statistic and assuming a normal distribution, it can be inferred that the corresponding population result would lie within the confidence interval in 95 out of 100 replications of the measurement on different samples drawn from the same population. The reported standard errors were computed with a balanced repeated replication methodology.

Differences between sub-groups

Differences between sub-groups among staff (e.g. teachers and assistants) and centre characteristics (e.g. centres with a high concentration of children from socio-economically disadvantaged homes and centres with a low concentration of children from socio-economically disadvantaged homes) were tested

for statistical significance. All differences marked in bold in the data tables of this report are statistically significantly different from 0 at the 95% confidence level. In the case of differences between sub-groups, the standard error is calculated by taking into account that the two sub-samples are not independent.

Use of scales and complex variables

Scales

In this report, several scales are used in descriptive and regression analyses. All these scales are the result of extensive construction and evaluation processes using guidelines and experience from TALIS 2018 and prior cycles.

The scaling construction process summarises responses from multiple items related to the same dimension into a single indicator. Because TALIS Starting Strong measures the self-reported practices and beliefs of staff and leaders from countries with different cultural backgrounds and in different settings (i.e. pre-primary education and centres for children under age 3), building the scales entails a number of methodological issues. In particular, individual and cultural factors affect the interpretation of questions. This may produce differences in levels of endorsement or frequency in survey responses and it may also affect the item correlation structure used to summarise the information and thus limit the comparability of the resulting indicators. In order to effectively use these scales for further analysis, it is important to consider the specific scale properties, such as their reliability and validity in a cross-cultural context.

To understand whether scales from TALIS Starting Strong could be considered comparable across countries and levels of ECEC, measurement invariance was tested. The most restrictive level of measurement invariance, scalar invariance, is reached once the indicator satisfies three properties:

1. The structure of the scale is the same across groups, meaning that the scale is built using the same set of items across groups.
2. The strength of the associations between the scale and the items (factor loadings) are equivalent. This property makes it possible to claim that one unit of change in the scale will lead to the same amount of average change in the items that constitute the construct across different groups.
3. The intercepts/thresholds for all items across groups are equivalent. If the intercepts of the items for all groups are equivalent, then the expected value of the items becomes the same across groups when the value of the indicator is zero and means can be compared across groups.

If only properties (1) and (2) are satisfied, then the scale reaches metric invariance. This means that these scales can be used for comparison within countries and comparisons across countries of the strength of the association between the scales and other factors. However, the means of these scales cannot be compared across countries. If only property (1) is satisfied, the scale reaches configural invariance. This means that results using these indicators are meaningful within countries, but cannot be compared across countries.

By design, all scales have a midpoint of 10 and a standard deviation of 2. This means that scales with values above 12 can be considered high. The fact that all scales have the same midpoint helps interpret the level of prevalence of a specific practice or attitude, regardless of the frequency with which it is expected to occur in the centre (or target group) or be held by staff. Additional information on the construction and validation of the scales included in this report can be found in Chapter 11 of the *TALIS Starting Strong 2018 Technical Report* (OECD, 2019[1]).

A number of scales from TALIS Starting Strong assess different dimensions of process quality; that is, the quality of the various interactions between the ECEC workforce, children and parents. These scales are described in detail in Chapter 2 and Annex C of the first volume of TALIS Starting Strong (OECD, 2019[2]). Scales used for the first time in the current volume are described below.

Staff engagement in collaborative professional practices

The scale of staff engagement in collaborative practices (S1COLL) summarises staff reports on the frequency with which they engage at their centre in several activities involving collaboration with other staff (SS1G23). It reached metric invariance for target populations at both the pre-primary level (ISCED Level 02) and in settings for children under age 3. For more details, see Chapter 11 of the *TALIS Starting Strong 2018 Technical Report* (OECD, 2019[1]).

Staff sense of self-efficacy in supporting children's development, learning and well-being

The staff scale of self-efficacy for supporting children's development, learning and well-being (S1SECD) summarises staff reports on the extent to which they feel they can do different activities with children at their centre (SS1G24). It reached metric invariance for target populations at both the pre-primary level (ISCED Level 02) and in settings for children under age 3. The scale was not part of the first data release in 2019, but was added to the database in 2020. The construction and validation processes followed the same procedures as the main scaling for the TALIS Starting Strong Survey 2018. For more details, see Chapter 11 of the *TALIS Starting Strong 2018 Technical Report* (OECD, 2019[1]) and Annex on the scale.

Centre leader support for pedagogical learning

The scale of leader support for pedagogical learning (S1LEADS) summarises centre leaders' reports about areas of pedagogical leadership within their ECEC setting (SL1G32). It reached metric invariance for target populations at both the pre-primary level (ISCED Level 02) and in settings for children under age 3. For more details, see Chapter 11 of the *TALIS Starting Strong 2018 Technical Report* (OECD, 2019[1]).

Table A B.1 lists all the scales used in this publication and their levels of measurement invariance.

Complex variables

Number of staff and children in the centre

TALIS Starting Strong asks leaders to indicate the number of staff in different categories working in their ECEC centres (leaders, teachers, assistants, staff for individual children, staff for special tasks, interns and other staff) (SL1G17) and the number of children enrolled in the centre (SL1G19).

This information is used to derive several indicators describing the staff and children in the centre: the share of different types of staff working at the centre (i.e. leaders, teachers, assistants and other staff); the number of teachers and leaders compared to the total number of staff at the centre; the number of staff per child at the centre. If the centre covers pre-primary education (ISCED Level 02) and provision for children under age 3, children and staff at both levels are considered in those numbers.

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.

These indicators differ from administrative data capturing similar constructs, for instance because TALIS Starting Strong data do not allow differentiation between part-time and full-time employment at the centre level. Furthermore, regulations often refer to staffing requirements at the group or classroom/playgroup/group level, rather than for the centre as a whole.

Table A B.1. Items and levels of measurement invariance for the scales used in the second volume of TALIS Starting Strong

Dimension	Scale	Items from questionnaire	Level of measurement invariance	
			Settings for children under age 3	Pre-primary education (ISCED Level 02)
Facilitating literacy and numeracy development (practices used at the centre level, according to staff)	**Facilitating literacy development**	Play word games with the children; play with letters with the children; sing songs or rhymes with the children	Configural	Metric
	Facilitating numeracy development	Use sorting activities by shape or colour; play number games; sing songs about numbers; help children to use numbers or to count; refer to groups of objects by the size of the group	Metric	Metric
Facilitating socio-emotional development (practices used at the centre level, according to staff)	**Facilitating emotional development**	Hug the children; talk with children about feelings; help children to talk about what makes them happy; help children to talk about what makes them sad	Configural	Metric
	Facilitating prosocial behaviour	Encourage sharing among children; encourage children to help each other; encourage children playing in small groups to include other children; encourage children if they comfort each other	Metric	Metric
Group organisation and individual support (practices used with the target group, according to staff)	**Behavioural support**	I help children to follow the rules; I calm children who are upset; when the activities begin, I ask children to quieten down; I address children's disruptive behaviour that slows down other children's learning; I help children understand the consequences if they do not follow the rules	Configural	Metric
	Adaptive practices	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 level of development; I give different activities to suit different children's interests; I adapt my activities to differences in children's cultural background	Metric	Metric
Facilitating engagement of parents/guardians (practices used at the centre level, according to staff)	**Staff engagement with parents and guardians**	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	Metric	Metric
Professional collaboration (practices used at the centre level, according to staff)	**Staff engagement in collaborative practices**	Provide feedback to other ECEC staff about their practice; engage in discussions about approaches to children's development, well-being and learning; engage in joint activities across different groups, including age groups; exchange learning or pedagogical materials with colleagues; engage in discussions about planned activities; engage in discussions about the development or needs of specific children; work with other ECEC staff to discuss the evaluation of children's development and well-being	Metric	Metric
Self-efficacy	**Staff sense of self-efficacy in supporting child development, learning and well-being**	Help children develop their capacity to learn independently; help children to interact with each other and show good social behaviour (e.g. sharing, helping others); calm a child who is upset, monitor and observe children's development; help children to develop self-confidence; help children develop creativity and problem solving; provide all children with a feeling of security	Metric	Metric
Pedagogical leadership (practices used at the centre level, according to leaders)	**Leader support for pedagogical learning**	I collaborated with staff to improve how children play together; I took actions to support co-operation among staff to develop new approaches to ECEC practice; I took actions to ensure that staff take responsibility for improving their skills in working with children; I took actions to ensure that staff feel responsible for children's development, well-being and learning; I worked on developing a vision for this centre; I facilitated the use of the indoor or outdoor space for learning	Metric	Metric

Number of staff and children in the target group

A similar set of variables is also built at the level of the target group. TALIS Starting Strong asks staff to take the example of the target group (the first group of children they were working with on the last working day before the day of the survey). Respondents indicate the category that best represents their role when working with this group of children (leader, teacher, assistant, staff for individual children, staff for special tasks, interns and other staff) (SS1G36), as well as the number of girls and boys who made up the group (SS1G37).

This information is used to derive three indicators: 1) the number of children per target group; 2) the number of staff working with the same target group on the same day; and 3) the number of staff per child working with the same target group on the same day.

The number of staff per child with the same target group on the same day refers to the number of staff working with the same target group, regardless of their role, divided by the number of children in the target group. 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.

The number of staff per child working with the same target group on the same day reflects a specific situation and is, therefore, different from the number of staff per child at the centre level. Staff may be working with the same target group at different moments of the day and not together, or may work part time. Children in the same group may also change over the day into different group compositions, and children’s attendance hours can differ. This concept also differs from the regulated maximum numbers of children per staff member, as that could include some restrictions on the staff to be included (depending on their qualifications or role) and can be specific to the age group of children.

As there is no indicator clarifying which target group each staff member referred to, several staff members may have referred to the same target group. This can result in a bias, as some target groups may be overrepresented in the data.

Share of staff who left their ECEC centre in the previous year

Leaders participating in TALIS Starting Strong reported on the number of staff who left the ECEC centre in the previous year (SL1G18B). The share of staff who left their ECEC centre in the previous year is obtained by dividing this variable by the total number of staff at the centre at the time leaders responded to the survey.

Novice and experienced staff and leaders

The novice and experienced staff variables were calculated by using staff reports about their total years working as an ECEC staff (SS1G06B). Respondents were considered novice staff if they had worked for three years or less in the ECEC sector in staff roles (i.e. teachers, assistants, staff for individual children, staff for special tasks and interns), and experienced staff if they had worked for more than three years in the sector in staff roles.

The novice and experienced centre leader variables were calculated by using centre leader reports about their total years working as an ECEC centre leader (SL1G05B). Respondents were considered novice centre leaders if they had worked for three years or less in the ECEC sector in a centre leader role, and experienced centre leaders if they had worked for more than three years in the sector in a centre leader role.

Staff's weekly hours spent without children

The number of weekly working hours without children was calculated by using staff reports to questions about their weekly total weekly working hours (SS1G18) and about their weekly hours spent with children (SS1G19). To calculate this indicator, the number of hours spent with children (SS1G19) was subtracted from the total number of hours worked (SS1G18). Negative values, resulting from staff who reported more hours spent with children than overall working hours, were excluded.

Percentage of working hours spent without children

The percentage of working hours without children variable was calculated by multiplying the number of weekly working hours spent without children (see above) by 100 and divided by the total number of weekly working hours using staff reports about their total weekly working hours (SS1G18). Some analysis required this continuous variable to be split into national quarters (see below).

Percentage of working hours spent with children

The percentage of working hours without children variable was calculated by using staff reports about their total weekly working hours (SS1G18) and about their weekly working hours spent with children (SS1G19). To calculate this indicator, the number of weekly working hours spent with children was multiplied by 100 and divided by the total number of weekly working hours. All values that exceeded 100%, resulting from staff who reported more hours spent with children than overall working hours, were excluded. Some analysis required this continuous variable to be split into national quarters (see below).

Leaders' weekly working hours

The number of weekly working hours of ECEC centre leaders was calculated by using centre leader reports about their usual working hours per week in this centre (SL1G06). To calculate this indicator, all values of 10 weekly hours or below (equivalent to 2 hours per day, on average, for a 5-day work week) and above 60 weekly hours (equivalent to 12 hours per day, on average, for a 5-day work week) were excluded to reduce the impact of outliers on the analysis of national averages and percentiles.

Level of ECEC centre autonomy for tasks

This set of indicators was derived from ECEC centre leader reports about who has significant responsibilities for eight different tasks related to curriculum, policies, staffing and budgeting (SL1G21): "deciding which activities for children are offered" and "choosing which materials/toys are used" (curriculum-related tasks); "establishing monitoring plans for children's development, well-being and learning" and "approving children for admission to the centre" (policies-related tasks); "appointing or hiring staff" and "dismissing or suspending staff from employment" (staffing-related tasks); and "establishing staff salaries" and "deciding on budget allocations within the centre" (budgeting-related tasks).

For each task, a new indicator was calculated by recoding the original responses into three categories: 1) "full autonomy", which corresponds to original responses that only indicate that "me and/or other members of staff" have significant responsibility; 2) "partial autonomy", which corresponds to the responses that indicate that "me and/or other members of staff", plus the "centre governing board" and/or the "local municipality/regional, state or national/federal authority" have significant responsibility; 3) "no autonomy", which corresponds to responses that indicate that only the "centre governing board" and/or "the local municipality/regional, state or national authority/federal authority" have significant responsibility.

For Japan, the indicator was calculated separately since the response categories to the questions about who has significant responsibilities were adapted to the national context. For each task, the indicator was created by recoding the original responses into the following three categories: 1) “full autonomy”, which corresponds to original responses that only indicate that “me and/or other members of staff” have significant responsibility; 2) “partial autonomy”, which corresponds to the responses that indicate that “me and/or other members of staff”, plus the "Incorporated/social institutes" and/or the “local, municipality/regional, state, or national/federal authority” have significant responsibility; 3) “no autonomy”, which corresponds to responses that indicate that only the “incorporated/social institutes"' or the “local municipality/regional, state or national /federal authority” have significant responsibility.

Scope of ECEC centre autonomy for resources and pedagogy

To describe the scope of ECEC centre autonomy for resources and pedagogy, two indicators were derived from centre leader reports about who has significant responsibility for such tasks (SL1G21).

Centre autonomy for resources refers to these four items: 1) “appointing or hiring staff”; 2) “dismissing or suspending staff from employment”; 3) “establishing staff's salaries”; and 4) “deciding on budget allocations within the centre”. Centre autonomy for pedagogy refers to the following four items: 1) “establishing monitoring plans for children's development, well-being and learning”; 2) “approving children for admission to the centre”; 3) “choosing which materials/toys are used”; and 4) “deciding which activities for children are offered”.

For each specific task, centre leaders’ responses were recoded into the category “full autonomy”, where centre leaders responded only that “me and/or other members of staff” have significant responsibility.

For each group of tasks (i.e. resources and pedagogy), an indicator “full autonomy in the majority of tasks” was then created based on centre leaders reporting only that “me and/or other members of staff" have significant responsibility in at least three of the four items.

Centre-level indices of human and material resources

TALIS Starting Strong 2018 asked ECEC centre leaders about the extent to which the lack of various human and material resources hindered their centres’ capacity to provide a quality environment for children’s development, learning and well-being (SL1G34).

Two centre-level indicators of resources were based on these reports. The index of shortage of human resources was 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 needs”. The index of shortage of material resources was 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)”.

Both indices were recoded to have three values: “not a problem of shortage” (value=1) if leaders responded “not at all” to 3 or 4 items (allowing “to some extent” for 1 item); “problematic shortage” (value=3) if leaders responded “quite a bit” or “a lot” to 3 or 4 items; and “minor problem” (value=2), an intermediate category for all other combinations of leader responses.

Higher values on these indices therefore mean that ECEC centre leaders view the amount and/or quality of resources in their centres as an obstacle to providing quality environments for children.

National quarters

Some analysis using complex continuous variables required these variables to be transformed into interval categories. To accommodate for this need, the report makes use of national quarters. In each country, the weighted distribution of the continuous variable is split into equally sized categories, following the rank order. For instance, the cut-off point between the first quarter and the second quarter of the scale of staff engagement in collaborative professional practices is the 25th percentile of the distribution of the scale in a specific country. As a result, the range of these intervals will differ across countries and vary with the properties of the distribution in each country.

Statistics based on regressions

Country-specific regression analyses were performed to examine the associations between different variables. Multiple linear regression was used in those cases where the dependent (or outcome) variable was considered continuous, for example with the process quality indicators. Binary logistic regression was employed when the dependent (or outcome) variable was a binary categorical variable, for example a high versus a low level of stress (see Chapter 3).

When interpreting results from regressions, it is important to keep in mind that each regression coefficient represents the additional effect of adding that variable to the model, if the effects of all other variables in the model are already accounted for. It is also important to note that, because cross-sectional survey data were used in these analyses, no causal conclusions can be drawn.

The centre (or staff, or target group) characteristics of interest can relate to one another and with other characteristics of the staff member or centre leader who is reporting. Thus, the regression analyses were performed through an estimation of the associations of interest, holding all other characteristics constant. In the models, the associations between a specific centre (or staff, or target group) feature and the outcome variable were examined after accounting for a set of centre and staff characteristics, described below. Control variables included in the regression models were selected based on theoretical reasoning and to ensure comparability of the model across countries. For some countries, the number of staff or centres in a particular category was too low to draw conclusions. Results are presented only when they are based on a minimum of 30 staff or 10 centres.

Staff and centre characteristics used in the models

The typical regression model used in this report includes the following set of variables as independent variables. In some cases, additional variables of interest are added depending on the purpose of the analysis, while in other cases fewer variables are used as controls. Footnotes to tables for all models presented in the report provide specific information on the variables included in respective models (see Annex C). Table 3.5 in Chapter 3 provides specific information on the variables included in models analysing sources of stress.

- Staff education level is aggregated into three categories: 1) secondary education or below (ISCED Level 3 or below); 2) post-secondary non-tertiary education or short-cycle tertiary education (ISCED Level 4 or 5); and 3) bachelor degree or equivalent or more (ISCED Level 6 or more), which is set as the reference.
- Staff specifically trained to work with children versus staff without specific training (without specific training as the reference).
- Staff experience refers to the number of years of experience in any ECEC centre, in three categories: 1) less than five years; 2) between five and nine years; and 3) more than nine years, which is set as the reference.

- Permanent employment versus fixed-term contracts/self-employment (two categories with fixed-term contracts as the reference).
- Working full time versus part time (part time as the reference).
- Leader/teacher: the respondent is either a leader or a teacher in the target group. All other categories, including assistants, are grouped and taken as the reference.
- Centre in city: the centre is in a municipality with more than 15 000 people, with a location with fewer people taken as the reference.
- Public management versus private management (private management as the reference).
- Number of children in the centre (or target group), in quarters. In each country, the distribution of answers from leaders on the number of children can be divided into four equal quarters with increasing numbers of children per centre. The first quarter is set as the reference: the respondent works in a centre (or target group) with a number of children among the 25% lowest of the country distribution.
- Number of staff per child, in quarters: the total number of staff working in the centre (or target group), regardless of their role, divided by the number of children in the centre (or target group). The first quarter is set as the reference: the respondent works in a centre (or target group) with a number of staff per child among the 25% lowest of the country distribution.
- Concentration of children from socially disadvantaged homes: the proportion of children from socio-economically disadvantaged homes in the centre (target group) is greater than or equal to 11%, with a proportion of 10% or less set as the reference.

Strength of association from multiple linear regression models

Multiple linear regression analysis provides insights into how the value of a continuous dependent (or outcome) variable changes when any one of the independent (or explanatory) variables varies while all other independent variables are held constant.

In tables and figures in this report, the strength of association between two variables relates to the magnitude of the unstandardised coefficient corresponding to the independent variable of interest, when predicting the dependent variable in a multiple linear regression model, while all other independent variables are held constant.

Regression coefficients in bold in the data tables presenting the results of regression analysis are statistically significantly different from 0 at the 95% confidence level.

Odds ratios from binary logistic regression models

Binary logistic regression analysis enables the estimation of the relationship between one or more independent (or explanatory) variables and the dependent (or outcome) variable with two categories. The regression coefficient of a logistic regression is the estimated increase in the log odds of the outcome per unit increase in the value of the predictor variable.

In tables and figures in this report, these coefficients are transformed into odds ratios by being exponentiated to make results more interpretable in terms of probability. The odds ratio is a measure of the relative likelihood of a particular outcome across two groups. An odds ratio indicates the degree to which an explanatory variable is associated with a categorical outcome variable, while all other independent variables are held constant. An odds ratio below 1 denotes a negative association, and thus a lower likelihood of observing the outcome; an odds ratio above 1 indicates a positive association, and thus a higher likelihood of observing the outcome; and an odds ratio of 1 means that there is no association.

The odds ratios in bold in the data tables indicate that the odds ratio is statistically significantly different from 1 at the 95% confidence level. To compute statistical significance around the value of 1 (the null hypothesis), the odds ratio statistic is assumed to follow a log-normal distribution, rather than a normal distribution.

Pearson correlation coefficient

Correlation coefficients measure the strength and direction of the statistical association between two variables. Correlation coefficients vary between -1 and 1; values around 0 indicate a weak association, while the extreme values indicate the strongest possible negative or positive association. The Pearson correlation coefficient measures the strength and direction of the linear relationship between two variables.

International averages

Cross-country averages are provided for pre-primary (ISCED Level 02) settings throughout the report. These averages correspond to the arithmetic mean of the nine country estimates. Comparisons between a single country and the international average are not used because the averages reflect only nine countries. Each country makes a substantial contribution to the overall average and therefore a comparison between the averages and a single country may overestimate the similarity of that country's results with those from the other countries.

References

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OECD (2019), *TALIS Starting Strong 2018 Technical Report*, OECD Publishing, Paris, http://www.oecd.org/education/talis/TALIS-Starting-Strong-2018-Technical-Report.pdf. [1]

Annex C. List of tables available on line

The following tables are available in electronic form only:

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Chapter 4. Leadership and management in early childhood education and care centres

Annex D. List of TALIS Starting Strong 2018 contributors

TALIS Starting Strong is a collaborative effort, bringing together expertise from participating countries that share an interest in developing a survey project to inform their policies about the early childhood education and care (ECEC) workforce and quality of provision. This report is the product of collaboration and co-operation among the member countries of the OECD participating in the first round of TALIS Starting Strong. Engagement with bodies representing teachers (Education International) and regular briefings and exchanges with the Trade Union Advisory Council (TUAC) at the OECD have been very important in the development and implementation of TALIS Starting Strong. In particular, the co-operation of staff and leaders in the participating centres has been crucial in ensuring the success of TALIS Starting Strong.

In the context of OECD objectives and the programme of work and budget of the OECD Education Policy Committee, the Extended ECEC Network on TALIS Starting Strong, a sub-group of the OECD Network on Early Childhood Education and Care, has driven the development of the project and its policy objectives. This includes the objectives of the analysis and reports produced, the conceptual framework and the development of the TALIS Starting Strong questionnaires. The Extended ECEC Network has also overseen the implementation of the survey and the preparation of this report.

Participating countries implemented TALIS Starting Strong at the national level at national project centres through, among others, national project managers (NPMs), national data managers (NDMs) and national sampling managers (NSMs), who were subject to rigorous technical and operational procedures. The NPMs played a crucial role in helping to secure the co-operation of ECEC centres, to oversee the national adaptation, translation and validation of the questionnaires, to manage the national data collection and processing and to verify the results from TALIS Starting Strong. The NDMs co-ordinated data processing at the national level and liaised in the cleaning of the data. The NSMs were responsible for implementing TALIS, respecting sampling procedures and other rigorous technical and operational procedures. In addition to the nine participating countries, the United States, United Arab Emirates and Kazakhstan contributed to the development of the questionnaires.

A Questionnaire Expert Group (QEG) was established to translate the policy priorities into questionnaires to address the policy and analytical questions that had been agreed by the Extended ECEC Network. A Technical Advisory Group (TAG) was assembled to advise during the decision-making process for technical or analytical issues. A group of subject-matter experts and analysts were also critical in the analytical phase and drafting of the initial reports.

The co-ordination and management of implementation at the international level was the responsibility of the appointed contractors, the International Association for the Evaluation of Educational Achievement (IEA), its consortium member Statistics Canada (Ottawa, Canada), and Rand Europe (Cambridge, United Kingdom). The TALIS Starting Strong Consortium included staff from the IEA offices in Amsterdam and Hamburg, Statistics Canada and Rand Europe. The IEA Hamburg was responsible for the overall survey planning, sampling, survey administration and the international data management. The IEA Amsterdam was responsible for overseeing the verification of the translation and for quality control in general. Rand Europe managed the development of the survey instruments and conceptual framework. Statistics Canada, as a subcontractor of the IEA Hamburg, served as the sampling referee.

The OECD Secretariat had overall responsibility for managing the project, monitoring its implementation on a day-to-day basis and serving as the secretariat of the Extended ECEC Network on TALIS Starting Strong.

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TALIS

Building a High-Quality Early Childhood Education and Care Workforce

FURTHER RESULTS FROM THE STARTING STRONG SURVEY 2018

The work of early childhood education and care (ECEC) professionals is the major driver of the quality of an ECEC system. As evidence accumulates on the strong benefits of investing in early education, countries need effective policies to attract, maintain and retain a highly skilled workforce in the sector. This report looks at the makeup of the early childhood education and care workforce across countries, assessing how initial preparation programmes compare across different systems, what types of in-service training and informal learning activities help staff to upgrade their skills, and what staff say about their working conditions, as well as identifying policies that can reduce staff stress levels and increase well-being at work. The report also looks at which leadership and managerial practices in ECEC centres contribute to improving the skills, working conditions and working methods of staff.

The OECD Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) is the first international survey that focuses on the early childhood education and care workforce. It offers an opportunity to learn about the characteristics of ECEC staff and centre leaders, their practices at work, and their views on the profession and the sector. This second volume of findings, *Building a High-Quality Early Childhood Education and Care Workforce*, examines factors that influence the skills development of ECEC professionals, their working conditions and well-being at work, and leadership in ECEC centres.

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