



Out-of-school childcare: Exploring availability and quality in EU member states

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esp.sagepub.com**Janneke Plantenga and Chantal Remery**

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Abstract

While a large number of studies focus on childcare facilities for preschool children, attention for out-of-school facilities is limited. The implicit assumption seems to be that facilities to combine work and care activities are less relevant once children reach the schoolgoing age. Yet, in most countries school hours are only part-time and not compatible with a full-time working week. This study adds to the literature by providing the first overview of the availability and quality of out-of-school childcare in 27 European Union (EU) member states. The results show that only a few EU countries have a well-developed infrastructure of out-of-school care services. In addition, the (structural) quality of out-of-school care varies across the member states. Given the importance of a supportive infrastructure, a further investment in comprehensive out-of-school care system remains important, both from the perspective of the (female) participation rate and the well-being of children.

Keywords

Availability, comparative analysis, EU member states, out-of-school childcare, quality

Introduction

During the last decades, most European Union (EU) member states have invested in childcare services to facilitate the reconciliation of work and private life. By subsidising childcare, the costs of children in terms of career and income opportunities are decreased, thereby stimulating (female) labour supply. Investing in childcare services might also be part of a policy focusing on social inclusion, as higher labour force participation is likely to reduce the risk of poverty. This is particularly important for children as poverty has a significant impact on well-being, with

possibly negative long-term effects on educational achievement and the future life chances (European Commission (EC), 2011). A third argument to invest in good-quality childcare services is that these services may serve a child-development purpose as they contribute to the social, emotional and cognitive

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development of children (see, for example, Cleveland and Krashinsky, 2004 for an overview).

Until now, the attention of policy makers and academic studies has focused mainly on childcare for preschool aged children. The role of childcare services for schoolgoing children has received relatively little attention. The EU Barcelona targets on childcare, for example, focus on the youngest age groups (0- to 2-year-olds) and children in the age group 3 years to compulsory school age. No target has been set for schoolgoing children. Apparently, the 'child-minding' activities are assumed to be taken over by the educational system. However, in most countries, school hours are part-time and not compatible with a full-time working week. Therefore, most parents need additional facilities. The academic literature also seems to focus mainly on childcare for preschoolers (e.g. Adema et al., 2014; Organisation for Economic Co-operation and Development (OECD), 2007, 2011; Plantenga and Remery, 2009; Szelewa and Polakowski, 2008). The relationship between childcare services and labour market achievements has been studied extensively, with the central theme being the impact of (subsidising) the provision of services on female participation rates. Generally, a positive impact is found for all age categories, although effects seem to be small (e.g. Blau and Currie, 2004; Jaumotte, 2003). Also in the field of social inclusion and child development, the main focus is on the impact of services for the youngest age group (e.g. Friendly and Lero, 2002; OECD, 2007). Relatively few studies on out-of-school care (OSC) are available, most of which refer to the United States (see, for example, Durlak et al., 2010).

Eurofound has published two studies on OSC in Europe. One focuses on employment developments in OSC services for school-age children in 25 EU member states. An important conclusion is that 'childcare policy for school-going children is either in the developing stages or not yet developed across much of the EU' (Eurofound, 2006: 69). Only Denmark and Sweden (and to a lesser extent France) seem to have a comprehensive OSC system (OECD, 2007). Moreover, the quality of service often seems secondary to the provision. Important in this respect are the employment standards in the

sector, which do not seem to be favourable: jobs are low paid, working conditions are poor, and working in childcare has a poor image. Another study by Eurofound (2007) focuses on the role of OSC services in disadvantaged areas and for disadvantaged groups in six EU member states. It concludes that OSC in disadvantaged areas provides social, economic and health benefits to both children and their families. Both studies do not provide systematic information on the availability and quality of OSC in all EU member states.

Given this state of affairs, the aim of this article is to assess the availability and quality of OSC services in the EU member states. As harmonised data are lacking, mainly national sources will be used. The analysis focuses on the situation in 2011 and covers 27 member states (Croatia not included). Our results indicate clear differences between EU member states, with regard to both availability and quality. Studies on childcare facilities for the youngest age group (0- to 2-year-olds) show that the availability of childcare is strongly related to the female participation rate, the flexibility of working hours, (pre-) school opening hours and the availability of (informal) alternatives (e.g. Blau and Currie, 2004; Thévenon, 2013). This seems also to be the case for childcare for schoolgoing children. The differences in quality are more difficult to explain. A first exploration suggests that quality is a spillover effect of the childcare system: countries that spend more on childcare for the youngest age group are also more likely to invest in high-quality OSC.

The structure of the article is as follows: first, we will describe the availability of (formal and informal) OSC services in the European member states, showing the complexities involved. Second, the quality of OSC will be assessed on the basis of three indicators: child-to-staff ratio, maximum group size, and qualification level of staff. Finally, the main conclusions will be summarised.

OSC services: measuring availability

Providing an overview of the availability of OSC services is a rather complicated matter. There is, for example, no clear definition in the literature.

Eurofound (2007) describes childcare services for schoolgoing children rather elaborately as

any arrangement for school-age children outside compulsory schooling that children use on a regular basis, so as to enable their parents or carers to participate in employment, training or some other activity. It provides care or activities that start at the end of the school day and continue until the parent or carer collects the child. The school or out-of-school activity is responsible for the children when they travel from school to the out-of-school activity. The activity can include physical care, socialisation, play and education. It includes care during the school holidays. OSC includes formal care or activities provided by organisations, agencies, services or individuals who are registered as child minders or child carers, or otherwise provide care on a regular basis, usually for payment. It does not include informal, irregular care. (p. 5)

The OECD does not provide a real definition but refers to formal OSC services, which may be provided

at some point during the day as well as during school holidays, although availability and nature of such services may differ. They are frequently, but not always, based in school facilities or youth centres, and provide recreational activities and/or help with homework. (OECD, 2011: 145)

At any rate, the reference ‘out-of-school’ implies that the school hours are a significant factor in the organisation of care services. Depending on the specific opening hours, OSC services might be offered before, between (during lunch) and after school hours, as well as during school holidays. This implies that, when assessing the availability of OSC services, the education sector needs to be taken into account.

This interaction with the school system complicates the assessment of OSC services extensively, as each country has its own unique educational constellation, with varying opening hours and ages covered. As a result, OSC services are also likely to vary, with some countries having a more elaborated formal care system, whereas others may rely more on informal services. In addition, the dividing line between

educational and out-of-school activities may not always be very clear and may differ between countries. For example, in some countries OSC services may be integrated within schools, whereas in other countries schools and childcare systems operate more separately; the education systems provide care during school hours, while childcare systems serve the children’s needs outside these hours. The complexities in defining and charting OSC services are only partly solved by the European Survey on Income and Living Conditions (EU-SILC). EU-SILC is based on a household questionnaire and contains data on childcare services. Eurostat offers aggregated data on the use of formal services, the use of other types of care and the number of hours per week for children aged 12 years and under. According to Eurostat (n.d.), formal childcare services cover the following services: education at preschool, education at compulsory school, childcare at centre-based services outside school hours (before/after) and childcare at day care centres. This implies that there is no distinction between (the use of) educational services provided by the school system and childcare services provided by the care system.¹ The impact of this specific situation is demonstrated by Figure 1, which provides EU-SILC data on the use of formal childcare services in 2011 for the age group compulsory school age to 12-year-olds, by hours.

Combining the use of compulsory education and the use of childcare services for this particular age category implies that all EU member states score relatively high on this indicator, as the use of compulsory schooling is, by its very nature, very high in almost all EU member states. Only in a few countries (Slovakia, Romania, Bulgaria, Hungary, Germany and the Czech Republic) is the coverage rate 90 percent or less. The backdrop of these lower coverage rates is unclear. The figures might reflect measurement errors; for example, respondents have interpreted the questions in a way which leads them to discount compulsory schooling in their answer (see also Keck and Saraceno, 2011). In some countries, a relatively high share of Roma population might translate into lower coverage rates as the enrolment rate of Roma children in education is relatively low (Unicef, 2011). However, the impact on national figures seems limited. Another factor might

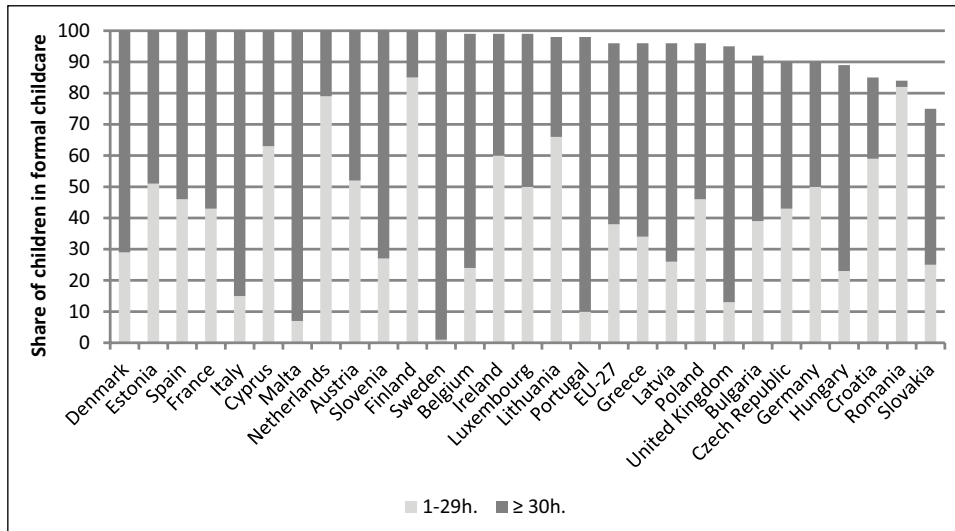


Figure 1. Use of formal childcare services, compulsory school age to 12-year-olds, by hours, 2011.

Source: Eurostat, EU-SILC 2011: *ilc_caindformal* (update August 2015).

be home education; the available evidence indicates, however, that the share of children educated at home is negligible in Europe (Blok and Karsten, 2011). In any case, the differences between the EU member states are relatively small because at the compulsory school age all children make use of formal childcare services if these include the educational system.

The grouping together of educational and care services may be justified by the fact that both are closely intertwined and help parents to combine their private and professional responsibilities. At the same time, this merger makes it more difficult to analyse the provision of 'genuine' OSC services, purely on the basis of the EU-SILC statistics. In order to get a more detailed picture of OSC services, additional information on school hours is necessary. Three aspects are relevant in this respect: school opening hours during the day, during the week and during the year. This information has been collected using information from Eurydice (an EU network which provides information on and analyses of European education systems and policies) and information provided by national experts (see Plantenga and Remery, 2013). The data used reflect as much as possible the situation of 2011.

In most countries, daily opening hours of schools are part-time, covering about 6 or 7 hours/day (for a

detailed overview per member state, see Plantenga and Remery, 2013). Starting time is generally between 08:00 and 09:00 and closing time between 13:00 and 15:00 (or later for the higher grades). Closing times are influenced by the organisation of the lunch break. Whereas in some countries, an example is Denmark, the lunch break is only 30 minutes; other countries may have breaks from 1.5 to even 2 hours. In Belgium, for example, the lunch break is between 12:00 and 13:30, whereas in France and Liechtenstein, it is between 11:30 and 13:30. In most countries, children seem to spend their lunch-time at school or have the opportunity to do so. Children may either bring their lunch to school, or have a (warm) lunch provided at school, as in Sweden and Finland. Lunch arrangements may also differ by region or town, which is, for example, the case in France and Italy. Another factor working parents may have to deal with is that opening hours are not always evenly spread over the week. In some countries, school is not open all week. In France, for example, there is no school on Wednesday, whereas in Belgium and (most schools in) the Netherlands, this is the case on Wednesday afternoon.

Figure 1 also illustrates the large variation within the EU in the use of formal childcare services by weekly hours. Sweden is the country with the highest

use of formal (education and OSC) services for 30 hours or more. After school, most children attend an OSC service. Swedish municipalities are obliged to provide leisure time centres or family care homes to children up to the age of 12 years, whose parents are working or studying. Portugal is another country where formal childcare is mainly used for 30 hours or more. This is related to the implementation of the full-time school schedule in 2006. As a result, primary schools are obliged to offer 'curriculum enhancement activities' between 15:30 and 17:30, resulting in a clear increase in school hours. In addition, centre-based childcare services offer before- and after-school care. About one-fifth of schoolgoing children aged between 6 and 10 years use these OSC services. Also in Malta, schools are open about 6 hours/day, between 8:00 and 14:00. As this translates into an average use of 30 hours/week, Figure 1 indicates that services are used for 30 hours or more. Yet, there is relatively little OSC in Malta and many working parents have to rely on informal services.

Countries with a high part-time user rate are the Netherlands, Lithuania, Romania and, interestingly, Finland. In Finland, the Basic Education Act regulates before- and after-school care, but local organisations are not obliged to provide such care. Most local authorities do provide before- and after-school services, yet the use is limited to the youngest children (Majamaa, 2012). This is partly related to the specific Finnish culture, which emphasises children's initiative and independence at an early age. In the Netherlands, school hours cover some 20 to 25 hours a week. The use of OSC services has increased quite dramatically after the introduction of the Childcare Act in 2005. Yet, the high female part-time employment rate seems to be largely compatible with a part-time use of formal services. In addition, a considerable group of parents rely on other forms of care (see below). The situation is rather different in Lithuania, where most of the formal services are also used part-time. While most schools offer OSC services, they are generally limited to only a few hours per week. In Romania, the high part-time user rate seems to reflect the rather short opening hours of school (between 8:00 and noon). OSC services are still in an early stage of development.

In addition to limited opening hours, working parents may be confronted with long school holidays. Again, variation between countries is large, particularly with respect to the summer holidays. The shortest summer holidays are 6 weeks (e.g. Germany and the United Kingdom), the longest about 3 months (Bulgaria and Lithuania). In addition to summer holidays, most countries have autumn holidays (1 week), Christmas/New Year holidays (2 weeks), Carnival holidays (1 week) and Easter holidays (1 week; see Eurydice, 2010 for more details).

Other services

Working parents may also rely on other services. The EU-SILC database provides information on the use of other services which are defined as childcare by a professional childminder at the child's home or at the childminder's home and childcare by grandparents, other household members (aside from parents), other relatives, friends or neighbours (often unpaid care; Eurostat, n.d.). As these 'other services' do not include educational services, we can presume that a high user rate indicates an informal network of childcare services; see Figure 2 for more details, which combines information of the use of formal services (see also Figure 1) with information on the use of other services. It has to be taken into account, though, that the data on other services are less reliable. With this in mind, the data seem to suggest that the use of other services is (almost) absent in Sweden, Denmark and Finland, which is in line with the extended use of formal services. In Latvia, where the use of other services is also very low, until 2009 more than 70 percent of schools offered prolonged day groups for children. However, in 2009, after budget cuts, the number of schools that offered childcare services after classes decreased considerably. Grandparents have a very important role in providing informal childcare. It is likely that, because of this development, the importance of other services will increase in the Latvian case.

In three countries, the Netherlands, Cyprus and Romania, the use of other services is fairly common for schoolgoing children. In the Netherlands, the high part-time employment rate of women, on one hand, lowers the demand for childcare services while

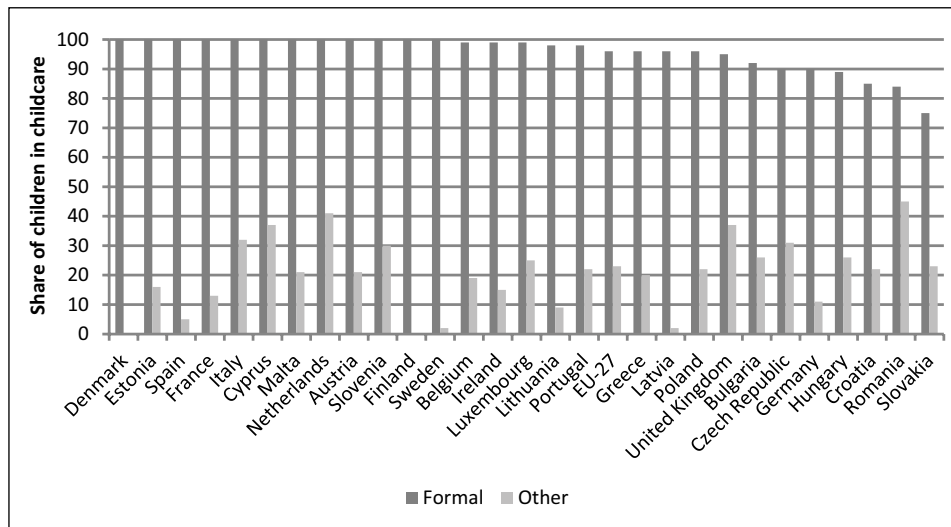


Figure 2. Use of formal and other childcare services, compulsory school age to 12-year-olds, 2011.

Source: Eurostat, EU-SILC 2011: *ilc_caindformal* and *ilc_caindoth* (update August 2015).

Data on other services have low reliability in Belgium, Czech Republic, Denmark, Germany, Estonia, Latvia, Malta, the Netherlands, Austria, Slovakia, Finland and Sweden.

increasing the supply and demand of family (grandparents) and friends as informal care givers, on the other hand. In Cyprus, grandparents traditionally play an important role in providing unpaid childcare. Also in Romania, grandparents are important in the provision of (out-of-school) care. The use of other services is also fairly high in the United Kingdom. Despite the expansion of formal childcare services under the National Childcare Strategy, informal services remain important. At a more general level, there appear to be significant country differences in the occurrence and intensity of care provided by grandparents (Igel and Szydlik, 2011).

Exploring national differences in availability

Given that OSC services are mainly targeted at working parents, the differences in the national user rate are related to the participation rates of parents, the extent of working time flexibility, levels of unemployment, school opening hours and availability of alternative forms of care such as grandparents. A low user rate as such is therefore difficult to interpret. It may indicate limited availability, but also

refer to a situation in which demand meets supply, simply because demand is not very high.

On the basis of national assessments, it appears that there are a few countries where supply and demand are more or less balanced. In Denmark and Sweden, municipalities are obliged to provide OSC services. In Sweden, however, there is no universal right to OSC for children of parents who are unemployed or on parental leave. In Portugal, the situation has improved considerably after the implementation of full-time school. Now the demand for OSC has more or less been met. In the Netherlands, there has been an enormous increase in the supply of OSC services in recent years. Waiting lists are decreasing and the increased supply now seems to cover most of the demand. Also in Slovenia and Slovakia, supply and demand seem more or less balanced. Other countries report a large unmet demand. In countries as diverse as Belgium, France, Ireland, Italy, Cyprus, Lithuania, Luxembourg, Malta, Poland, Romania, Finland and the United Kingdom, supply does not seem to meet demand (for a full overview, see Plantenga and Remery, 2013).

Summarising the current state of affairs, we can conclude that charting the provision of OSC services

is complicated. The EU-SILC is the only data source with harmonised data on childcare services but is less suitable for analysing OSC services as no distinction is made between the educational and care system. On the basis of additional, more qualitative information, it appears that the variation in OSC services is rather large – partly as a result of differences in the educational system and partly as a result of differences in (female) participation rate. In most countries, however, OSC services remain underdeveloped, thereby complicating the life of working parents.

Out-of-school childcare services: measuring quality

In addition to availability, quality is a very important aspect of OSC services. Whereas analysing the availability is already a difficult matter, assessing the quality is even more complicated as harmonised data are largely unavailable. Experts generally define the quality of childcare rather broadly as those aspects that contribute to the social, emotional and cognitive development of the child (e.g. OECD, 2007; Philips et al., 1987, 2001). It may refer to different aspects such as hygiene and safety, size of groups, child-to-staff ratios, activities offered and parental involvement. Often, a distinction is made between structural and process quality (Kreader et al., 2005; Little, 2007; Philipsen et al., 1997). Process quality refers to the childcare environment in which children play, learn and experience teacher–child interactions. This concept is often used in developmental psychology and measured by trained observers in onsite observations of childcare activities. In contrast, structural quality refers to structural features of childcare that can be regulated by the (local) government. They include, for example, child-to-staff ratios and group sizes, programme management, safety regulations, staff qualifications, wages of childminders and length of time in service. Structural quality is easier to measure and more harmonised data are available (see, for example, OECD, 2007), though it remains complicated due to the fact that many countries have different care services with different quality measures and requirements. There is some debate on the exact relationship between structural and process

quality. A study of Philipsen et al. (1997) shows that structural measures are better predictors of process quality in preschool classrooms than in infant/toddler classrooms. Yet, Cryer et al. (1999) conclude that separate structural measures generally have weak correlations with process quality but that ‘there seem to be many structures that work together to create process quality’ (p. 356). As comparative data on process quality are simply not available, we will focus on structural quality, presuming a positive relationship between structural and process quality. More specifically, structural quality in OSC will be charted along three different lines: (1) child-to-staff ratio, (2) maximum group size and (3) qualification of staff.

Child-to-staff ratio is defined as the maximum number of children who can be placed under the responsibility of one adult. A strict ratio is essential to ensure adequate supervision of children and individual attention and therefore critical for high-quality childcare (e.g. Philips et al., 2001; Thomas Coram Research Unit, 2002). As a result, in this study, a higher child-to-staff ratio is interpreted as reflecting lower quality. Maximum group size is the maximum number of children situated in one group in a day care or OSC facility. In the literature, there is no consensus on whether and how the maximum group size positively influences the quality; from the three structural factors, group size is thought of as the least important (Blau, 2000). Despite this, most studies conclude that the requirement of a maximum group size has a positive influence because it assures that there is enough supervision and individual attention (e.g. Philips et al., 2001; Thomas Coram Research Unit, 2002). Qualification of staff takes into account ‘the general education and specialised training of the staff’ (Kreader et al., 2005: 2). Examples are education degrees, youth worker certification, on the job training and previous work experience. Callender (2000) points out that the qualification of staff has important positive implications for the quality of care. Compared to the other two factors, the qualification of staff is presumed to be the most important determining factor of quality. At the same time, it is also the most difficult factor to measure because there is a wide variety of education degrees which are difficult to compare (e.g. Scarr et al., 1994; Thomas

Coram Research Unit, 2002). For this report, the required level of education of (caring) staff is chosen based on the assessment of the national expert.

National scores

For each country, data on the three aspects, that is child-to-staff ratio, maximum group size and qualification level of staff, are collected (see Appendix 1 for more details). Again, data come from different sources; the OECD family database has been used for data on child-to-staff ratio and qualification of staff. Information provided by national experts has been used for the non-OECD countries and for the information on group size, which is not included in the OECD database (see Plantenga and Remery, 2013 for more details). With regard to *child-to-staff ratio*, the lowest values (and thus the highest quality scores) are found in Finland, the Netherlands, Germany and Italy, where the ratio is about 10 children per staff member. It should be noted, though, that the scores for Finland, Germany and Italy are average scores, as reported by national experts; the ratio is not officially regulated. The highest child-to-staff ratio (and thus the lowest quality score) is found in Lithuania and Hungary, where the ratio is 30:1. In several countries, the child-to-staff ratio is not regulated at all or regulated at the decentralised level. Large variation is also visible in *maximum group size*. The largest value is found in Sweden. Here, the maximum is not regulated and the average group size is almost 37. It appears to have increased gradually over the years; in 2000, the average group size was still about 30 children. High maximum group sizes are also found in the Czech Republic and Hungary (30). Small groups are found in Italy, Austria and Romania, where the average group size is 20. The third aspect of quality is the *qualification level of staff*. Although OSC services may employ a variety of staff, each requiring different qualification levels, the focus here is on the qualification of the main staff who provides the actual care. Detailed information is, however, not always available. Again, there appears to be large variations across the European countries. In some countries, such as Poland, educational requirements are as high as a university degree. Other countries have not

formulated formal requirements, notably Spain, Italy and Ireland.

Towards an OSC quality index

The above overview already suggests that the quality of OSC services still lacks clear standards. In effect, the diversity is large, perhaps partly explained by the public profile of childcare services, the overall educational system and the financial restrictions of social policy. In addition, it is difficult to assess the scores on the different dimensions. In Sweden, for example, the educational qualification for the childcare staff is rather high (which should be rated positively from a quality point of view), yet the maximum group size is clearly above average (which should be rated negatively). In order to make an inter-country comparison and to rank the countries on quality scores, the three indicators have been integrated into one measure.

As the indicators are measured in different ways, they have to be standardised so that they can be combined in one measure. Given the limited data and the nature of the measurements, the three aspects have been indexed with a value between 1 and 5. The child-to-staff ratio is indexed as follows: first, ratios in the member states are arranged in a numerical sequence from high to low. Second, this sequence is equally divided into five categories. The first category includes the 20 percent highest numbers in the sequence; if the ratio of a member state falls within this category, the child-to-staff ratio is indexed as one. The last category includes the 20 percent lowest numbers in the sequence; if the ratio of a member state falls within this category, it is indexed as five (see Aalbers, 2012; Stoel, 2011). The maximum group size follows the same index method as the previous factor. The first category (receiving the score of 1) includes the highest numbers in the sequence; the last category (receiving the score of 5) includes the lowest numbers. The index method for the qualification of staff is a little different to the other two variables. Qualification of staff is not measured numerically; therefore, it is not possible to simply rank countries. Nevertheless, it is possible to divide the qualification into five categories. Scarr et al. (1994), for example, categorised the qualification of

Box 1. Indicators and measurement of quality of OSC services.

Indicator	Definition	Scores
Child-to-staff ratio	The maximum number of children that can be placed under the responsibility of one adult	1. 28 or higher 2. 23–27 3. 18–22 4. 14–17 5. 13 or less
Maximum group size	The maximum number of children situated in one group in an out-of-school service	1. 31 or more 2. 28–30 3. 25–27 4. 22–24 5. 21 or less
Qualification of staff	The general education and specialised training of the staff	1. No training or degree/informal schooling 2. Primary or lower secondary education 3. Upper secondary schooling (vocational) 4. Post-secondary non-tertiary schooling 5. Tertiary education

OSC: out-of-school care.

staff by developing a sequence in the level of training and education. Subsequently, this sequence is divided into several categories. The first category considers no or very little training or education, and the last includes the highest level of training and education possible. In principle, the country figures refer to legal regulations; where these do not exist, an average figure is included based on available empirical research. When this information is not available, the EU average is imputed. A summary of the measures is included in Box 1; the country scores on each of the measures and the average score on the index are included in Appendix 1.

To calculate the structural quality index, the average score is calculated by simply taking the arithmetic mean of the three scores. The results are mapped in Figure 3. Based on this calculation, Austria has the highest level of quality of OSC in Europe, followed by Denmark, Germany, Greece and Romania. Austria

and – to a lesser extent – Germany score high on child-to-staff ratio and maximum group size. Denmark and Greece have high scores for child-to-staff ratio and qualification of staff, whereas Romania does well on group size and qualification of staff. In this calculation, Spain and Ireland have the lowest score, particularly due to the low qualification of staff. The scores are also low in Ireland, Hungary, Lithuania and the Czech Republic.²

Exploring national differences in quality

Whereas differences in the availability of OSC services are relatively easy to explain by differences in the (female) participation rate, working hours and educational system, differences in quality are more puzzling, partly because of a lack of research. Some arguments seem worth exploring. A first hypothesis might be that high-quality services are a spillover effect of the overall educational system: countries that perform well with regard to the educational system are also likely to invest in the quality of OSC services. A second argument might be that the quality of OSC is a spillover effect of the childcare system: countries that spend more on childcare for the youngest age group are also likely to invest in high-quality OSC. A third factor might be the particular welfare state regime. As social-democratic welfare state regimes are more inclined to invest in public services, the argument could be made that high-quality childcare is more likely to be found in countries in which social-democratic parties are important. A final argument might be that quality is a luxury good and as such related to the gross domestic product (GDP) per capita.

To explore the relationship, we plotted the results and calculated bivariate correlations.³ For the quality of the overall educational system, we used the average Programme for International Student Assessment (PISA) score of 2009 (average score on three subscales: the reading scale, mathematics scale and science scale, OECD, 2010). Public funding of childcare was measured by the public expenditure on child day care as a percentage of GDP. As an indicator of the welfare state regime, we used the average share of social democrats in parliament over the last two decades (1990–2010). Finally, GDP per capita (at market prices) was taken as an indicator of general wealth.

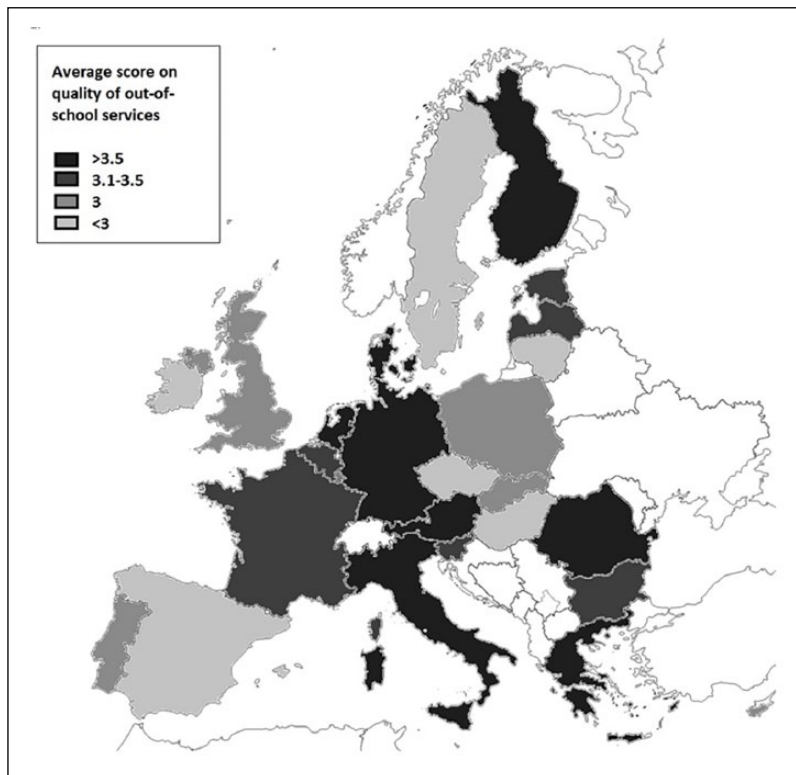


Figure 3. Average score on quality of out-of-school care services of European member states.

Of the four factors considered, only public expenditure on childcare has a clear, positive relation with quality of OSC (Pearson's $r=0.43$, $p=0.000$). In countries where expenditures on child day care are higher, the average quality of OSC is also higher. This suggests that the quality of OSC is a kind of spillover effect of the overall childcare system with less impact of the educational system, the welfare state regime and the overall wealth. As a robustness check, we recalculated the quality index by giving the qualification level of staff more weight, given the presumed importance of this quality dimension. It appears that the correlations with the four factors hardly change. As before, the only significant relationship is the relationship between OSC quality and the expenditure on childcare (Pearson's $r=0.39$, $p=0.000$). Of course, the results have to be interpreted with caution as they are based on bivariate relationships and do not give solid information on the causality. Moreover, the specific results might

be related to the indicators used. They should, therefore, be interpreted as a first exploration of national differences in the quality of OSC services.

Summarising, we have to conclude that the quality of OSC is still a largely unexplored issue. An index based on indicators of structural quality shows that Austria has the highest level of quality among the EU member states, followed by Denmark, Germany, Greece and Romania. Spain and Ireland are at the lower end of this ranking. A first investigation of the national differences seems to suggest that the variation in quality is a spillover effect of the overall childcare system. Apparently, countries that invest in a childcare infrastructure also seem to take account of the quality of OSC.

Conclusion

Many working parents in Europe rely on formal childcare services during the hours they are at work.

Although there are a substantial number of studies available on childcare services for children of pre-school age, much less is known on OSC services for schoolgoing children. The implicit assumption seems to be that facilities to combine work and care activities are less relevant once children reach the schoolgoing age. Yet, in most countries, school hours are only part-time and not compatible with a full-time working week. OSC is therefore an important element of care infrastructure for working parents. This study fills a gap by providing a first comprehensive analysis of the availability and quality of OSC in the European member states (Croatia excluded). Given the lack of reliable, harmonised EU data, additional, more qualitative national information has been used. The outcome of the analysis seems to suggest that the variation in OSC services in European member states is large, partly as a result of differences in the educational system and partly as a result of differences in (female) participation rates.

An important aspect of OSC services is quality. In addition to a safe place where children can relax, high-quality childcare may contribute to further social, emotional and cognitive development of children. This article provides a first exploration of national differences in the quality of OSC, based on three structural indicators: child-to-staff ratio, maximum group size and qualification of staff. Our results indicate that Austria scores highest, followed by Denmark, Germany, Greece and Romania. At the lower end of the ranking are Spain and Ireland. A first exploration of the national differences seems to indicate that they are related to the public funding of childcare. Apparently, the quality of OSC is more related to the overall childcare system than to the educational system, while the welfare state regime and the general wealth do not seem to have an impact. Future research should investigate these relationships in more depth.

Given the number of children and the amount of public funding involved, it is remarkable that there is still so little information on OSC. An important conclusion is therefore that more detailed (harmonised) data is necessary to assess the availability and quality of OSC. On the basis of the available information, it seems that only few EU countries have a well-developed, high-quality infrastructure of OSC

services. As a result, many working parents have to rely on other, informal, services or rather work part-time. Given the importance of a supportive infrastructure, further investments in comprehensive OSC systems remain important, both from the perspective of the (female) participation rate and the well-being of children.

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Notes

1. In principle, a complete investigation might be possible on the basis of the micro-data. However, due to the national variation in governance of the education and care sector, this is likely to be a very complicated exercise. Moreover, national samples, particularly of the smaller member states, are probably not large enough.
2. In the case of missing values, the EU average has been used. As an alternative, we also calculated the index using the lowest value. Obviously, this has an impact on the values of the countries and the ranking, yet the changes in the ranking are small and the correlation between the two rankings is high (0.84, $p=0.000$).
3. See Figures a–d (Online Appendix) for the graphs of the scatterplots.

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Appendix I

Table I. Overview of structural quality of out-of-school services: child-to-staff ratio, maximum group size and qualification of staff (country score in bold).

	Child-to-staff ratio	Maximum group size	Qualification of staff (carers)	Average score on quality index
BE (Fl) ^a	Differs by and within community 14:1 (Flanders) (4)	Not regulated (3)	Vocational secondary education (Flanders) (3)	3.33
BG	22:1 (3)	22 (4)	Fixed qualification requirements including secondary or higher educational level for the respective position (3)	3.33
CZ	22:1 (average; not regulated) (3)	30 (2)	Minimum is high school degree with focus on (social) pedagogy or university degree (3)	2.67
DK	11:1 (average; not regulated) (5)	Not regulated (3)	3/4 pedagogic education, 1/4 not educated (4.5)	4.17
DE	Varies by Länder; 10.5:1 (average) (5)	Varies per Länder; highest average: 23.6 (Hamburg) (4)	Varies per Länder; Vocational based training (majority); university training and informal training (3)	4.00
EE	24:1 (long day group) (2)	24 (long day group) (4)	Pedagogic higher education (4)	3.33
IE	Only regulated for children up until the age of 6 (3)	Not regulated (3)	Not regulated; personnel have a wide range of skills and knowledge and must go through a process of (garda) police vetting (1)	2.33
EL	25:2 (5)	25 (3)	Higher education or lower level professional degree (4)	4.00
ES	Not regulated; varies by activities, region and parents' associations' decisions; 10–25:1 (3)	25 (not regulated) (3)	Not regulated; usually parents' associations organise activities with carers or companies offering activities (1)	2.33

(Continued)

Table 1. (Continued)

	Child-to-staff ratio	Maximum group size	Qualification of staff (carers)	Average score on quality index
FR	14:1 (4)	Not regulated (3)	Activity organisers generally have the BAFA diploma (<i>Brevet d'aptitude aux fonctions d'animateur</i> ; Certificate of Aptitude for the Functions of Activities Organisers) or a related diploma (3)	3.33
IT	9:1 (average; not regulated) (5)	19 (average; not regulated) (5)	No legal requirement of qualification, often lower qualification and training on the job (1)	3.67
CY	25:1 (2)	25 (3)	Primary school teacher requirement, higher education (4)	3.00
LV	23:1 (average; not regulated; refers to prolonged day group) (2)	23 (average; not regulated) (4)	School teacher as childminder: professional higher pedagogic education (4)	3.33
LT	30:1 (average; not regulated) (1)	Not regulated (3)	No special training, generally staff is trained as social workers and primary school teachers (4)	2.67
LU	Not regulated (3)	Not regulated (3)	Qualified employees with training (3)	3.00
HU	30:1 (average; not regulated) (1)	30 (average; not regulated) (2)	4 years of academic education and practical training (5)	2.67
MT	Not regulated (3)	Not regulated (3)	Recognised level of training and education in childcare (3)	3.00
NL	10:1 (5)	20 (age group 4–8 years) 30 (age group 8–12 years) (3)	Intermediate vocational level (lower than BSc) (3)	3.67
AT	Varies between Länder, average 13:1 (5)	Varies between Länder, average 20 (5)	Specific 5-years secondary school or 2 years of specific college or teachers' degree (secondary or tertiary level) (3)	4.33
PL	25:1 (2)	25 (guideline); 30 on average (2)	Tertiary level degree in the subject area or equivalent tertiary teacher qualifications (5)	3.00
PT	20:1 (teacher aids); in addition teacher/ animator: 40:1 (3)	25 (20 in case one of the children has special needs) (3)	Teacher aids: secondary education; Teachers: a 4-year master degree; Teaching staff also receives additional training (3)	3.00
RO	20:1 (average; not regulated) (3)	About 20 (not regulated) (5)	Graduate in pedagogic high school (4)	4.00
SI	16:1 (average; not regulated) (4)	28 (based on information of Ministry of Education) (2)	Teachers: higher education or university degree (50%), assistants: upper secondary education (50%) (3.5)	3.17
SK	25:1 (average 23:1) (2)	25 (3)	Secondary pedagogic or tertiary education (4)	3.00

Table 1. (Continued)

	Child-to-staff ratio	Maximum group size	Qualification of staff (carers)	Average score on quality index
FI	Locally defined; average 9.2:1 (5)	Not regulated (3)	University degree or post-secondary vocational diploma or a vocational qualification suitable for tasks, as well as competence to function as leader of a group of children, achieved either by education or work experience (3.5)	3.83
SE	9:1 (6- to 8-year-olds; OECD) 21:1 (9- to 11-year-olds; OECD) 20.9:1 (average) (3)	36.7 (average; not regulated) (1)	University pedagogic degree (60%), other education 40% (upper secondary level) (4.5)	2.83
UK	Only regulated for children under 7; Age group 3–7 years: 8:1; the ratio for those aged 3 years or older is 13:1 between 8:00 and 16:00 where the setting employs a Graduate leader. For children aged 8 years, a ratio of 10:1 is recommended (3)	Not regulated (3)	National standards set minimum qualification levels with a focus on level 2 (intermediate; approx. 1 year of workplace-based training), and level 3 (advanced; two more years of training) (3)	3.00

BE: Belgium; BG: Bulgaria; CZ: the Czech Republic; DK: Denmark; DE: Germany; EE: Estonia; IE: Ireland; EL: Greece; ES: Spain; FR: France; IT: Italy; CY: Cyprus; LV: Latvia; LT: Lithuania; LU: Luxembourg; HU: Hungary; MT: Malta; NL: the Netherlands; AT: Austria; PL: Poland; RO: Romania; SI: Slovenia; SK: Slovakia; FI: Finland; SE: Sweden; OECD: Organisation for Economic Co-operation and Development; UK: the United Kingdom.

Bolditalic values indicate no additional data available, European Union (EU) average imputed.

For OECD countries data on child-to-staff ratio and qualification of staff are from the OECD family database; data on group size and data for non-OECD countries are based on information provided by national experts (see Plantenga and Remery, 2013).

^aNo information available for the French and German communities.