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# **Subjective Assessments of the Quality of Social Investment Interventions: Taking a Bottom-Up Approach to Childcare Services in European Countries**

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## **Abstract**

The topic of social investment (SI) in children through high-quality childcare provision remains high on the political and SI research agenda. It has generated research at both the individual and country level: childcare programme quality from a public funding angle (top-down) and individual experiences by parents/guardians as users of these services (bottom-up). To date, however, very little bottom-up research in the SI literature analyses how country-level variables influence users' evaluations of childcare quality. This article's main focus is to examine how user satisfaction with childcare quality at the individual level is related to objective childcare quality and contextual factors at the country-level. The study relies on a childcare satisfaction index (CSI) for EU (27) countries and the UK, constructed with data from Eurofound's European Quality of Life Survey. The findings demonstrate that childcare users' satisfaction with childcare quality is associated with trust in government, the intensity of childcare use, and SI reform strategies. The findings have important implications for SI research by showing the association between top-down factors and individual bottom-up satisfaction with childcare among formal childcare users. This research broadens existing childcare and SI literature by suggesting a multidimensional approach for analysing individual and country-level indicators.

## **Introduction**

The expansion of the social investment (SI) framework in recent decades has increased European Union (EU) Member States' engagement with child-centred policies (Pavolini and Van Lancker, 2018), which encouraged EU Member States to reform their welfare systems towards investment policies targeted at high-quality childcare provision. However, even though childcare is considered a backbone of SI interventions, current

academic research on childcare quality focuses on country-level variables such as welfare regime structure and financial efforts. This top-down perspective largely ignores service users' preferences and assessments. A small but growing SI literature adopts a bottom-up perspective (Author, 2025) by analysing the assessments of service users, e.g., individuals with small children. However, the literature on user satisfaction with childcare is limited and inconsistent (Kelesidou et al., 2017; Janssen et al., 2020), even when looking at objective and subjective indicators (Chung and Meuleman, 2017; Kulic, 2019). This is surprising despite recent attention to the SI framework and the rise of the 'quality childcare' imperative in academic and political debates (León et al., 2019). Another limitation of most existing studies is that they rely on single-country data, which makes it hard to generalize when individual and country factors overlap.

In light of these lingering questions, this article takes a bottom-up perspective, asking whether there is a difference between individual and country-level approaches by focusing on user satisfaction with childcare quality. The article focuses on formal childcare services, which include childcare facilities (e.g., kindergarten, creche, nursery, playground, day care centre) or after-school care (Eurofound, 2019). How is individual user satisfaction with childcare quality influenced by country-level indicators in the EU (27) and the UK? Answering this question addresses an important gap in the SI literature by incorporating a multidimensional approach and analysing childcare quality in Europe using the same indicators for all countries. This evidence gap is addressed by exploring how the childcare system, the intensity of childcare use and trust in the government influence formal childcare users' satisfaction with childcare quality. The article also investigates whether satisfaction with childcare quality is experienced differently depending on the welfare regime and relies on the SI reform strategies typology developed by Garritzmman et al. (2022a, 2022b). Using Eurofound's unique EQLS 2016 survey data, a childcare satisfaction index (CSI) for the EU (27) countries and the UK is compiled. The article demonstrates that individual satisfaction with childcare quality is associated with trust in government, childcare intensity, and the type of SI reform strategy. The findings show no association between user satisfaction and the institutional structure of childcare systems.

An important finding is that there is an association between country-level childcare indicators and user satisfaction with childcare quality. On a contextual level, findings show that higher user satisfaction with childcare is associated with higher government trust. The second core finding is an association between lower childcare intensity and higher satisfaction with childcare quality. Interestingly, there does not appear to be a relationship between how childcare systems are organised and user satisfaction. Lastly, the findings show that the SI reform strategy categories produce

similar results to the classical welfare state typology. Unsurprisingly, the findings show higher satisfaction with childcare quality in Inclusive/Scandinavian regimes compared with Stratified/Conservative countries. The results suggest that individual satisfaction with childcare quality is experienced as expected in relation to the intensity of welfare efforts.

The findings also carry implications for the field of SI research by showing the association between top-down childcare quality factors and individual bottom-up satisfaction with childcare among formal childcare users. Most importantly, the study broadens existing childcare research by showing an association between higher user satisfaction with childcare and the selected country-level indicators.

The remainder of the article is structured as follows. The next section reviews theoretical literature and defines four hypotheses. Section 3 presents the data and methodology. The following section presents descriptive and multilevel findings. The final section links these findings with theoretical literature and offers conclusions, limitations and suggestions for future research.

### **Theoretical Debates on Subjective and Objective Childcare Assessments**

While there is no agreement on the extent to which individual and country-level factors influence satisfaction with childcare quality, the OECD (2019a) suggests looking at the links between objective childcare performance measures and user satisfaction. Ünver et al. (2019) used objective and subjective indicators to analyse perceived childcare accessibility, while Kulic (2019) studied different aspects of parental satisfaction with childcare in relation to various country-level indicators. A similar approach was taken by Chung and Meuleman (2017), who examined European parents' support for public childcare provision through subjective and objective indicators.

However, subjective user assessments often provide a contradictory picture of when individual and country assessments overlap. There is no agreement on how individual perceptions of childcare are formed in relation to objective characteristics and contextual factors. The most common approach emphasizes individuals' ability to evaluate childcare quality accurately, i.e., that user satisfaction is positively related to performance on objective measures. Eg., Lehrer et al. (2015) investigated Canadian parental perceptions in relation to external quality ratings and found that parents had the ability to correctly assess childcare quality. Stahl et al. (2018) found that disadvantaged

households in Germany attend and experience lower-quality childcare services than better-off households. Speight et al. (2010) revealed that English households with multiple disadvantages were more likely to believe that childcare is of lower quality, less available and affordable compared with the better-off households.

Other studies illustrate a mismatch, i.e., that high/low subjective service quality ratings do not automatically reflect high/low objective childcare quality. Eg., Kulic (2019) found that higher government investments in ECEC were associated with lower satisfaction with childcare quality by more educated parents. A study by Mocan (2001) showed that parents overestimate childcare quality compared with external indicators in the USA. Studies in Portugal (Barros and Leal, 2014) and Greece (Grammatikopoulos et al., 2014) showed similar mismatching trends, indicating that parents overestimate childcare quality compared to external indicators.

The literature also highlights several methodological and evidence gaps in the field. Firstly, most studies rely on single-country data, making it difficult to generalise childcare user perspectives. Secondly, there is no consensus on which indicators to use; different studies use subjective and objective childcare indicators, often resulting in a contradictory picture. Lastly, the literature still lacks a comprehensive understanding of multidimensionality when it comes to the quality of childcare.

At a contextual level, part of the literature finds links between trust in government and individual satisfaction with public services. Kampen et al. (2006) state that trust in government is an essential component of public service reforms and functions as a vital element of the legitimacy of democracies, where increased quality in public services leads to increased trust (Van de Walle and Bouckaert, 2003). It is a dynamic concept (OECD, 2022) and building up trust is much more difficult than breaking it down (Kampen et al., 2006). A study by Van Oorschot and Arts (2005) showed that countries with social democratic welfare regimes have higher political trust due to lower social inequality. In contrast, countries with higher inequality can experience a loss of trust to implement inclusive reforms (OECD, 2019a). In countries with a low-trust climate, individuals prioritize immediate, short-term benefits instead of long-term reforms because they doubt that interventions can have long-term benefits despite promising returns (OECD, 2022). Therefore, satisfaction with public services and trust in government are mutually correlated as individuals 'update' their preferences and expectations based on the behaviour of public institutions. Garritzmann et al. (2023) state that higher childcare interventions are more feasible in countries with higher trust in government; political trust is essential for future-oriented SI reforms as they imply uncertainties and risks. High government trust can help to stimulate support for childcare reforms and can be used as

a proxy for willingness to ensure/sustain the quality of childcare services. These findings frame the articles first hypothesis which expects that **satisfaction with childcare quality is higher in countries that have higher trust in government (H1).**

On an institutional level, the literature finds that childcare intensity (measured as the number of hours of childcare use per week) is important for childcare support and user satisfaction, often due to parents' ability to enter the labour market (Schmitz, 2020). Studies show a positive relationship between full-time childcare service use and views towards childcare services (Ellingsæter et al., 2016). High childcare intensity reduces the tension between desired and actual employment (Schmitz, 2020) and increases positive views about overall services (Janssen et al., 2020). Its availability also reflects a more comprehensive provision of childcare services. Therefore, the second hypothesis is that **higher childcare intensity enhances subjective childcare quality (H2).**

Scholars have also been studying how childcare quality depends on whether services have a unitary (for children aged 0–6 years) or split (for 0–3- and 3–6-year-olds) structure. Research shows that countries with unitary and mixed (both unitary and split structures that vary by region) settings have a single authority model, usually the Ministry of Education (MoE) (European Commission/EACEA/Eurydice, 2019), while countries with separate settings usually have a dual authority model. In such a model, the MoE is responsible for the education of children above 3 years, while the settings for children below the age of 3 falls under other ministries, eg, those dealing with children and family affairs (European Commission/EACEA/Eurydice, 2019). Even though most European countries have split or mixed settings, over one-third have unitary settings<sup>2</sup> (European Commission/EACEA/Eurydice, 2019). Studies suggest that countries with unitary systems ensure more balanced service provision and foster childcare services of higher quality (Moss, 2012; OECD, 2012). Furthermore, other studies suggest that age-dependent childcare settings lack equal quality standards and can negatively affect teachers' working conditions (León et al., 2019). Therefore, a third hypothesis states that **individuals in countries with unitary childcare systems are more satisfied with childcare quality (H3).**

Finally, it is known that welfare regimes shape attitudes, expectations, and political and ideological beliefs. Thus, differences in subjective and objective childcare quality assessments can manifest in public policy reforms and changes in welfare generosity. One recent advance in the SI literature offers a SI-oriented typology that allows for comparisons with Esping-Andersen's traditional welfare regime typology (1990). In *The World Politics of Social Investment Volume I and II*, edited by Garritzmann et al. (2022a, 2022b), the authors propose a new approach by categorising countries into five SI reform strategies and three distributive profiles. Palier et al. (2022) classify

countries into inclusive, stratified, targeted and social protectionist countries. Apart from four main welfare reform strategies, Toots and Lauri (2022) also propose the Anglo-Saxon+ model, which covers the Baltic States (see Table 1). Table 1 illustrates the key ideas of each type of welfare reform strategy. Inclusive SI reform strategies reduce inequality, stratified SI reinforces it by segregating benefits to specific social groups and targeted SI reform strategies seek to reduce the transmission of poverty. Protectionist countries mainly focus on compensation-oriented policies with little SI-oriented policies. The Anglo-Saxon+ countries also promote small compensatory welfare states, though investments in education and skills are relatively high. Given the differences in SI reform strategies, it is expected that **individuals in countries with inclusive SI reform strategies will be more satisfied with childcare quality (H4).**

**Table 1.** SI reform strategies, key ideas

<b>Inclusive</b>	Egalitarian Encompassing Equal benefit distribution Policies are inclusive and cover wide part of the society Reduces inequality Both compensatory and investment policies are widely developed
<b>Stratified</b>	Vertical welfare distribution Different benefits to different segments of the society Fragmenting groups of beneficiaries based on social class Reinforces inequality Predominantly compensatory policies with investment policies benefiting certain social groups
<b>Targeted</b>	Welfare efforts focused on the most disadvantaged groups Needs-based criteria Focus on lower social class Fights transmission of poverty
<b>Protectionist</b>	Compensation-oriented policies; Social investment policies are mainly disregarded
<b>Anglo-Saxon+</b>	Small compensatory welfare state Relatively high public investments in education, including childcare Skill-focused family and labour market policies

**Source:** compiled by the author based on Garritzmann et al. (2022a, 2022b)

## Data and Methods

**Data.** Wave 4 of Eurofound's European Quality of Life Survey (EQLS) allows an investigation of formal childcare users. The survey asks all respondents with children aged 12 or younger about the main type of childcare received by the youngest child. The EQLS survey data, however, does not distinguish between public and private childcare use. The total sample size is 1,545 observations. To cope with non-response information on income (around 15 per cent), multiple imputation techniques were applied to predict missing income values.

**Dependent variable.** The survey asks five questions about formal childcare services, i.e., childcare satisfaction:<...> with 1) quality of the facilities; 2) expertise and professionalism of staff/carers; 3) personal attention child was given; 4) being informed or consulted about childcare; and 5) the curriculum and activities. Each of these variables is evaluated on an 11-point scale, with 1 indicating total dissatisfaction and 10 indicating total satisfaction with the quality, with some 'don't know' (DK) cases. The Cronbach's alpha coefficient demonstrates that a single index can be developed ( $\alpha > 0.92$ ) and used as a barometer of satisfaction with childcare quality. Consequently, a childcare satisfaction index (CSI)<sup>3</sup> has been compiled, varying from 5 to 50, with a higher score indicating higher satisfaction with childcare quality. As it is often the case with subjective data, the CSI index data is very skewed. Experiments with a log transformation of the dependent variable produced similar results compared to the original version. Therefore, the original variable was retained since both original and log-transformed results showed similar trends.

**Independent variables.** To test the role of trust in government, Eurobarometer data, which gathers information about the percentage share of people who 'tend to trust' the national government in each country, is used. For each country, the average data<sup>4</sup> from the 2014-2016 period has been calculated and used to classify countries into three (low/medium/high) categories in relative terms. To measure childcare intensity, Eurostat's 2014-2016 average data has been selected to include the proportion of children participating in formal childcare and education full-time (30 hours or more) (Eurostat, 2021). Considering national childcare systems, Eurydice collects information about how childcare systems are designed and governed around the EU. Using Eurydice national information sheets for 2014-2015, countries have been classified into three system categories: split, mixed, and unitary systems (European Commission/EACEA/Eurydice, 2019). While split systems correspond to separate age-



dependent childcare settings, countries with unitary (integrated) systems provide integrated services of both early childhood educational development and pre-primary education functions, irrespective of the age group. The mixed systems, on the other hand, provide both unitary and separate settings. Finally, for welfare regimes, the classical welfare state typology provided by Esping-Andersen (1990) is used alongside the new typology suggested by Garritzmann et al. (2022a, 2022b). These are used in separate models, allowing an assessment of SI reform strategies and whether the new and old welfare typology makes a difference in satisfaction with childcare quality. Appendix 1 shows detailed information about all selected country-level variables.

**Control variables.** The EQLS provides detailed education information (lower secondary and below/upper secondary or post-secondary/ tertiary) and income quartiles (1<sup>st</sup>/2<sup>nd</sup>/3<sup>rd</sup>/4<sup>th</sup>) by country in PPP terms. Detailed educational and income information is useful from a comparative point of view since SI-oriented policies often benefit individuals belonging to the higher social class and result in a Matthew effect (ME) (Pavolini and Van Lancker, 2018). While there is no consensus on how to classify employment status, due to the nature of the data, the variable is aggregated into those in employment and other (employed/other). Employed respondents include those at work, while those belonging to the other group include respondents who are unemployed for less than 12 months, more than 12 months, those who are unable to work due to illness or disability, retirees, homemakers, and students. To measure migration background, individuals were classified as either with a migrant background (1-2<sup>nd</sup> generation migrant) and those who were born in the surveyed country (otherwise). To control for household structure, individuals were categorised into three main household categories (couple with children/single with children/other types of households). The study also includes other variables based on previous examinations on childcare (Chung and Meuleman, 2017; Kulic, 2019), namely the number of children (1 child/multiple children/have children outside the household) and gender (male/female).

**Methods.** Mixed-effects linear multilevel models are used in this study, which examine the links between policy instruments at the country level and individual satisfaction at the individual level. However, a challenge with such models is that there is a chance of heterogeneity in childcare organisations at the country level, i.e., the use of country-level FEs might not solve the heterogeneity problem. The use of regional/local-level data would solve this issue. Unfortunately, the limited sample size prevents multilevel models at the regional level, highlighting potential for future research with a more expansive dataset. After running analysis with the null model with no control variables, the intra-class correlation (ICC) coefficient shows that only around 5.2 per cent of the CSI is explained at the country level, meaning that most variables are located at the

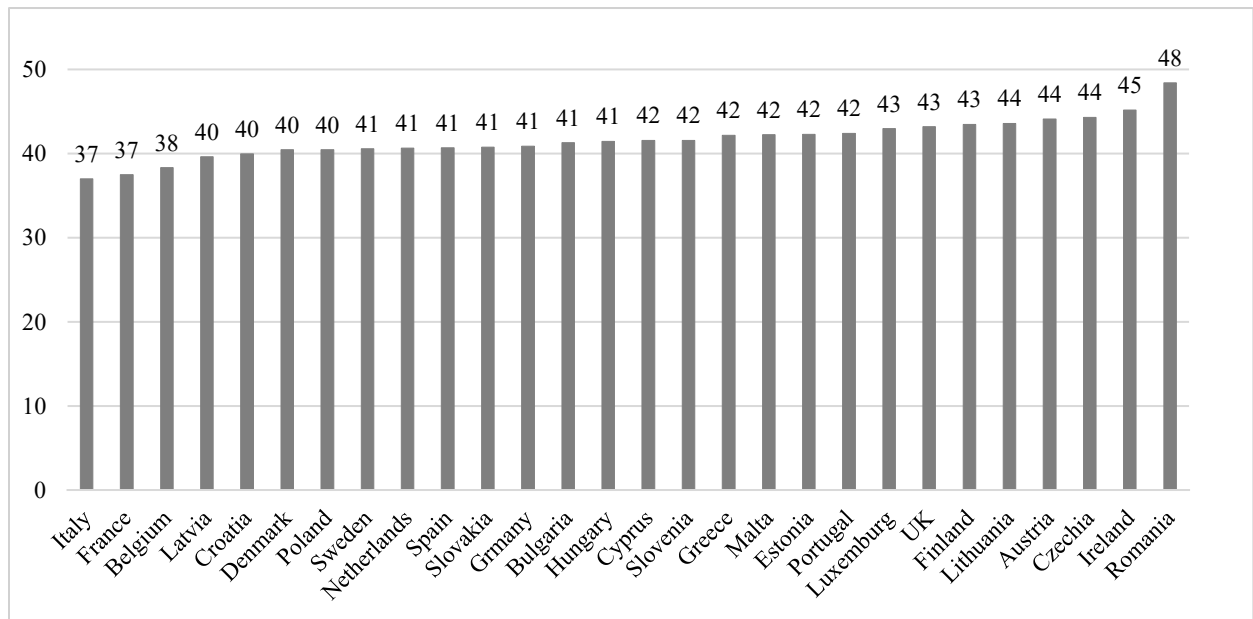
individual level. Other regression models have been tested for robustness (see Appendix 2). Fixed and random effects show that results are similar; therefore, multilevel models are used in this study.

## Findings

### *Descriptive findings*

Figure 1 illustrates average CSI scores among formal childcare users in the EU (27) and the UK. The overall CSI scores are high, with scores above 40 (out of 50) in most of the selected countries. The highest index scores are found for Romania and Ireland, with the lowest observed in Italy, France, and Belgium. Overall, the results suggest that the satisfaction of formal childcare users is not a matter of concern. However, it is interesting to examine why people in different countries are generally pleased with childcare quality despite having different childcare systems. To comprehend this complex relationship between welfare efforts and user satisfaction, a more comprehensive analysis is necessary.

**Figure 1.** Childcare Satisfaction Index (CSI) among formal childcare users, average scores by country



**Note:** 50-point scale, where 5 indicates the lowest satisfaction, 50 indicates the highest satisfaction

Table 2 shows average CSI scores and percentage composition for each selected variable. Though p-values indicate no statistically significant differences between CSI

scores and individual-level variables, they do indicate that there is a relationship between the CSI and all selected country-level variables.

**Table 2.** Average Childcare Satisfaction Index (CSI) score, EU (27) and the UK

<b>Variables</b>	<b>Average score</b>	<b>% distribution</b>
Individual-level variables		
<b>Gender</b>		
Man	41.0	48
Woman	40.4	52
<b>Employment status</b>		
Employed	40.4	84
Other <sup>a</sup>	42.0	16
<b>Educational background</b>		
Lower secondary or below	41.1	15
Upper secondary or post-secondary	41.4	40
Tertiary	40.0	45
<b>Income quartiles</b>		
1 <sup>st</sup>	41.2	20
2 <sup>nd</sup>	39.1	24
3 <sup>rd</sup>	40.9	29
4 <sup>th</sup>	42.0	27
<b>Household structure</b>		
Couple with children	40.0	76
Single with children	41.8	6
Other <sup>b</sup>	43.0	18
<b>Number of children</b>		
1 child	40.8	27
Multiple children	40.6	57
Have children outside the household	40.7	16
<b>Migration background</b>		
1-2 <sup>nd</sup> generation migrant	41.2	24
Otherwise <sup>c</sup>	40.6	76
Country level variables		
<b>Trust in government</b>		
Low	38.9***	38
Medium	43.3***	20

	High	41.0***	42
<b>Childcare system</b>			
	Unitary	42.3***	35
	Mixed	40.8***	18
	Split	40.0***	47
<b>SI profile</b>			
	Inclusive	41.0***	13
	Stratified	40.0***	43
	Substitutive	43.3***	12
	Protectionist	40.0***	30
	Anglo-Saxon+	42.2***	2
<b>Welfare regime</b>			
	Scandinavian	41.0***	12
	Conservative	40.0***	42
	Liberal	43.3***	11
	Southern	38.9***	14
	Post-Socialist	41.8***	21
Observations		1,545	

**Notes:** significant at \* p < 0.10 level, \*\* p < 0.05 level, \*\*\* p < 0.01 level, \*\*\*\* p < 0.001 level; <sup>a</sup>Unemployed, student, retired, homemaker, sick or disabled, other; <sup>b</sup>Extended families, single people or those that are in couples and have children outside the household; <sup>c</sup>Born in the surveyed country.

### ***Multilevel findings***

To examine the data further, the following models investigate the influence of the selected country-level variables. First, before hypothesis testing, the impact of individual-level indicators on the CSI is examined using a multilevel analysis with country-level random intercepts (Model 1). Control variables are then added across subsequent models: trust in government (Model 2), childcare intensity (Model 3), childcare systems (Model 4), SI reform strategies (Model 5), and welfare regimes (Model 6). The results of the multilevel analysis are presented in Table 3<sup>5</sup> (and discussed in the sections below).

The findings show that higher income individuals are more satisfied with childcare quality than those belonging to the 1<sup>st</sup> income quartile, i.e. middle- and upper-income individuals experience higher satisfaction with childcare quality. Similarly, employed individuals are less satisfied with childcare quality compared with those not in paid work. Looking at household structure, single parents and other types of households tend to be more satisfied with childcare quality compared to couples with children. There is a negative relationship between those who have children outside the household, who tend

to have lower satisfaction with childcare, compared with those with multiple children. Nonetheless, there is no statistically significant effect on satisfaction and educational background, migration, and gender. Overall, even though higher income groups tend to be more satisfied with childcare quality, the initial trends suggest that individuals who are more likely to experience multiple disadvantages tend to have a higher level of satisfaction with childcare quality, i.e., single parents and those not at work.

Does trust in government impact satisfaction with childcare quality? Evidence shows that individuals living in countries with medium and high trust report a higher CSI score (see Models 2-6). In other words, in countries with low trust in government, formal childcare service users report lower satisfaction with quality. Therefore, it can be stated that the first hypothesis (H1) cannot be rejected. These results suggest that individuals in countries with higher levels of trust feel more supported by their government and generally feel more positively about government decisions. Unsurprisingly, the majority of protectionist<sup>6</sup> countries are in the low trust category, indicating lower government support for childcare. Overall, the multilevel results indicate that the public climate in relation to the government matters for satisfaction with childcare quality.

Looking at the intensity of childcare use, the models identify a negative association between higher CSI and lower childcare intensity. This implies that individuals in countries with higher childcare intensity experience lower satisfaction with childcare quality than those living in countries where, on average, childcare is used for less hours each week. The direction of these results is unexpected, as one would assume that countries with a higher percentage of children attending childcare facilities for 30 plus hours per week would lead to more satisfactory perceptions of quality. Thus, the second (H2) hypothesis is rejected. Countries with less than 20 per cent of full-time childcare intensity include Romania, the Netherlands, the UK, Ireland, Austria, and Greece. Despite lower levels of full-time childcare intensity, individuals in these countries report a high average CSI (see Figure 1). This is likely the case because the majority of children in Austria, the Netherlands, and Ireland attend childcare services for 1-29 hours per week. Among children aged 3 years and older in those countries, more than 60 percent attend childcare services for less than 30 hours per week<sup>7</sup>, indicating that full-time childcare use (30 plus hours and more) is less widespread compared with other EU countries.

Models 4-6 examine whether different childcare systems influence perceptions of childcare satisfaction. Even though the literature suggests that unitary and mixed settings usually ensure higher childcare quality standards and more harmonious childcare provision, the findings show no significant pattern. Therefore, the third hypothesis (H3) cannot be accepted. The findings imply that while childcare systems matter for objective

childcare quality standards from a governance point of view, this does not translate into different subjective assessments by formal childcare users.

The last hypothesis asks whether the type of SI reform strategies affects satisfaction with childcare quality, incorporating the classical welfare regimes for comparative reasons (Models 5-6). The regression results show that SI reform strategies matter, but only when comparing inclusive countries with stratified countries, i.e., individuals in inclusive countries report higher CSI scores than those in stratified ones. Inclusive countries cover Sweden, Denmark, and Finland, while stratified ones include Austria, Belgium, Germany, France, and the Netherlands. The models also find no significant difference between stratified countries and substitutive, protectionist and Anglo-Saxon+ countries. Thus, the fourth hypothesis (H4) is neither confirmed nor rejected. Stratified countries are known to be more selective in providing public services and are more reliant on social transfers, which makes them more similar to substitutive, protectionist and Anglo-Saxon+ countries. Similar trends were observed when looking at the classical welfare state classification (Model 6). The findings show that individuals living in Scandinavian countries experience higher childcare satisfaction than those in Conservative ones. Interestingly, individuals in post-Communist welfare regimes also experience higher satisfaction with childcare quality compared to those living in countries with Conservative regimes (see Appendix 1). Within this post-Communist cluster, there is an Anglo-Saxon+ cluster, which includes the Baltic States. According to Garritzmann et al. (2022a, 2022b), while the Baltic States have residual welfare states, they have larger investments targeted towards childcare, distinguishing them from the rest of the post-Communist country cluster. Overall, the regression results suggest that when it comes to satisfaction with childcare quality, classifying countries into new SI reform strategies produces somewhat similar results to the classical welfare regime typology.

**Table 3.** Multilevel regression models on determinants of the CSI

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<b>Educational background (ref= lower secondary or below)</b>						
Upper-sec or post-sec	0.097	0.130	0.133	0.135	0.103	0.094
Tertiary	-1.353	-1.337	-1.311	-1.296	-1.364	-1.305
<b>Income quartile (ref=1<sup>st</sup> quartile)</b>						
2 <sup>nd</sup> quartile	-1.232	-1.215	-1.217	-1.230	-1.205	-1.261
3 <sup>rd</sup> quartile	1.187*	1.193*	1.188*	1.177*	1.400**	1.167*
4 <sup>th</sup> quartile	1.870*	1.897*	1.919*	1.897*	2.058*	1.886*
<b>Gender(ref=man)</b>						
Woman	-0.780	-0.760	-0.769	-0.774	-0.811	-0.777
<b>Employment status (ref=employed)</b>						
Otherwise <sup>a</sup>	1.625**	1.622**	1.586**	1.584**	1.635**	1.534**
<b>Household structure (ref=couple with children)</b>						
Single with children	1.482*	1.390*	1.380*	1.371*	1.464*	1.420*
Other	3.498****	3.464****	3.460****	3.464****	3.383****	3.407****
<b>Number of children (ref=multiple children)</b>						
1 child	-0.503	-0.469	-0.474	-0.464	-0.404	-0.439
Have children outside hhld	-2.114*	-2.092*	-2.070*	-2.050*	-2.090*	-2.033*
<b>Migration background (ref=otherwise<sup>c</sup>)</b>						
1-2 <sup>nd</sup> generation migrant	0.414	0.401	0.376	0.367	0.492	0.472
<b>Trust in government (ref=low)</b>						
Medium		3.247***	2.826***	2.632***	2.118*	2.204**
High		1.776*	1.949**	1.787*	2.541***	2.501***
<b>Childcare intensity</b>						
			-0.041*	-0.045*	-0.063	-0.062*
<b>Childcare system (ref=unitary)</b>						
Mixed				-0.382	0.604	0.333
Split				-0.746	0.732	0.211
<b>SI reform strategy (ref=Stratified)</b>						
Inclusive					2.840*	
Substitutive					2.370	
Protectionist					1.431	
Anglo-Saxon+					2.370	
<b>Welfare regime (ref=Conservative)</b>						
Scandinavian						2.419**
Liberal						1.881
Southern						1.441

	Post-communist					1.983**
_cons	41.895*** *	40.186*** *	41.689*** *	42.438****	40.255*** *	40.816***
Level 1 indiv. (res. var.)	61.527*** *	61.546*** *	61.544*** *	61.602****	62.560*** *	61.650*** *
Level 2 cntr. (inter. var.)	3.764****	3.468***	2.574**	1.415	0.699	0.820
AIC	10347.9	10343.9	10342.9	10346.2	9903.9	10349.9
BIC	10428.0	10434.7	10439.0	10453.1	10006.4	10478.1
Intra-class correlation (%)	5.8	3.1	2.5	2.3	1.1	1.3
Level 1, N	1545	1545	1545	1545	1236	1545
Level 2, N	28	28	28	28	21	28

Standard errors in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01, \*\*\*\* p < 0.001

**Notes:** <sup>a</sup>Unemployed, student, retired, homemaker, sick or disabled, other; <sup>b</sup>Extended families, single people or those who are in couples and have children outside the household; <sup>c</sup>Born in the surveyed country.

## Discussion and Conclusions

A large proportion of the SI literature has been devoted to studying childcare programme quality from a public funding effectiveness or top-down angle. In general, empirical childcare quality findings are limited because they lack the user satisfaction, or a bottom-up, perspective. The present study departs from the dominant approach, taking a bottom-up user satisfaction with childcare quality perspective to assess how subjective user satisfaction with childcare quality is influenced by country-level factors in the EU (27) and the UK. Using the childcare satisfaction index (CSI), the empirical part of this study considered four country-level indicators: (1) trust in government, (2) childcare intensity, (3) childcare systems, and (4) SI reform strategies. The overall results highlight five core findings.

First, the results showed that formal childcare satisfaction levels differ depending on the level of trust in the government. In line with previous studies (Oorschot and Arts, 2005), empirical findings indicate that higher satisfaction with childcare quality is experienced in countries with medium and high levels of trust in the government. These results are in an unsurprising direction as countries with high trust include Scandinavian and Conservative countries, which have matured welfare states and well-developed and more universal formal childcare services. The findings show the interaction between trust in the government and satisfaction with childcare quality, indicating the dynamic



relationship between the two (Van de Walle and Bouckaert, 2003). While increased satisfaction with the quality of childcare services aligns with increased trust in government, lower satisfactions in countries where there is low trust in the government signals the dynamic nature of general satisfaction with the government's performance and actual welfare interventions.

Second, another important finding is that individuals living in countries with lower childcare intensity tend to have higher satisfaction with childcare quality. While studies show stronger positive views towards full-time childcare (Ellingsæter et al., 2016) and increased subjective maternal well-being (Schmitz, 2020), results in the present study illustrate higher satisfaction with childcare quality among individuals living in countries with lower full-time childcare use. Countries with lower levels of full-time childcare use include the Netherlands, Austria, the UK, Ireland and Greece (Eurostat, 2022). However, countries like Ireland and the UK both represent the liberal, market-oriented welfare states, known for privately funded childcare. According to Eurofound (2019), Ireland, Greece, and the UK are among the countries where childcare users experienced the greatest difficulties regarding childcare costs. Thus, the results might indicate that users living in households with small children have more difficulties in accessing and affording quality childcare, but when they do, they are more satisfied with it compared to countries with different childcare systems. Future research could investigate the relationship between working patterns, childcare intensity, and childcare satisfaction.

Third, the findings further show that the way childcare systems are organised (unitary, mixed or split system) does not seem to affect childcare user satisfaction with the services provided. In line with Kulic (2019), users are satisfied with the services equally regardless of childcare system. Even though multiple studies show that countries with unitary and mixed childcare settings are often governed by a single authority (e.g., the MoE) who tend to ensure better objective childcare quality standards (Moss, 2012; OECD, 2012), it does not affect satisfaction with different aspects of childcare quality. The findings suggest that while the way childcare systems are organised matters to objective childcare quality indicators at the cross-country level, it does not translate into user satisfaction. High satisfaction irrespective of the type of childcare system is unsurprising because, despite government efforts, finding accessible and high-quality childcare can still be quite challenging in many countries. Future research could look at individuals with small children and compare their satisfaction with childcare quality among those who use public childcare services with those who do not.

Fourth, the present study applies a new welfare typology based on SI reform strategies suggested by Garritzmann et al. (2022a, 2022b) and compares it with Esping-Andersen's classical welfare regime typology. Applying the former to assessments of

childcare satisfaction is innovative. The findings demonstrate that individuals in Inclusive countries experience childcare satisfaction differently from those in Stratified countries. Higher satisfaction in Inclusive countries is not surprising since it covers Scandinavian countries, long known for their welfare generosity, which extends to the provision of universally available childcare services. In Stratified countries, SI investments towards childcare favour middle-class service users due to policymakers' support for increasing parents' skills and labour market participation (Palier et al., 2022). With respect to the classical welfare regime typology, the research findings show similar trends, i.e., Scandinavians are more likely to score highly than individuals in Conservative countries. Taken together, both typologies produce similar results and highlight that a welfare regime dimension plays an important contextual role in determining user satisfaction with childcare quality. However, it is important to note that not all EU (27) countries have been classified according to their SI reform strategies. Future research could analyse missing countries (e.g. Bulgaria, Cyprus, Hungary, Luxemburg, Malta, Romania and Slovenia) and classify them under new SI profiles. This could contribute to a better understanding of SI reform strategy profiles and ensure a more comprehensive typology.

Finally, the findings present evidence that formal childcare users who belong to a lower socioeconomic status and experience higher levels of multiple disadvantages are associated with higher satisfaction with childcare quality, which complements the mismatching trends in the literature. Those individuals are not at work due to unemployment, disability, single parenthood etc. Even though these groups are more likely to experience multiple challenges in the labour market and more gender gaps, they might be more satisfied with childcare quality due to practical considerations of relief from care duties. Nonetheless, the results are not fully conclusive and more research is needed. Overall, this study is innovative in multiple ways and contributes to a broader SI literature by including a multidimensional approach to analyzing childcare quality from the user perspective. The current study challenged prior assumptions by presenting the inverse associations between higher childcare intensity and individual satisfaction with childcare quality. This suggests that childcare costs might shape individual satisfaction in some lower childcare-intensity countries. The organizational structure of childcare systems (unitary, mixed, or split) does not directly influence user satisfaction, despite variations in objective quality standards. Individual satisfaction with childcare quality is also found to be influenced by a broader welfare context, i.e., by trust in the government and SI/welfare regimes. The study's findings revealed a significant link between satisfaction with childcare and governmental trust, notably higher satisfaction in countries with greater trust in the government, particularly in Scandinavian and Conservative countries with well-developed formal childcare settings. The study challenges the traditional Esping-Andersen (1990) welfare regime typology by examining

it in relation to new SI reform strategies established by Garritzmann et al. (2022a, 2022b). It indicated higher satisfaction in Inclusive/Scandinavian regime countries due to their comprehensive welfare provision for childcare services. Finally, the socioeconomic dimension also shapes satisfaction measures and indicated higher satisfaction among individuals with a higher risk of socioeconomic disadvantage, suggesting the mismatch approach. In sum, building on previous studies to analyse childcare quality from a two-way approach (Ünver et al., 2019; Kulic, 2019; Chung and Meuleman, 2017), this study adds a more comprehensive understanding of how subjective assessments and selected country-level indicators overlap using the same data for all selected countries.

As in every empirical study, this research encountered some limitations. Firstly, there are large differences in childcare use between children aged 0-2 and 3-6 across EU countries. Ideally, these groups would be analysed separately, but the EQLS data does not distinguish between them. Many households have multiple children aged 0–6, and the data does not identify which child is using formal childcare. As a result, a broad childcare intensity categorisation based on country averages was used. Future research should explore satisfaction across different childcare intensity groups. Another data limitation is the inability to distinguish between public and private childcare provision or assess actual care fees. OECD (2019b) data show a wide variation in private enrolment, but EQLS lacks this detail. This gap leaves avenues for future research to examine the cost of childcare per household. Thirdly, this study also touches on the two-way relationship between trust in government and satisfaction with childcare services. Higher satisfaction might lead to greater trust, not necessarily the other way around. The potential for reverse causality exists, but it cannot be fully addressed due to the cross-sectional nature of EQLS data. Panel data with lagged variables would help resolve this, but it was unavailable using the EQLS data. Most importantly, this study does not analyse causal relationships. Lastly, the CSI combines several quality indicators into one measure, limiting analysis of individual components. However, prior research and computations suggest that the CSI gives a reliable overall view of childcare quality, outweighing the aforementioned disadvantage.

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## Appendices

### Appendix 1. Country-level variables, the EU (27) and the UK

	<b>Trust in government</b>	<b>Childcare intensity</b>	<b>Childcare systems</b>	<b>SI reform strategies</b>	<b>Welfare regimes</b>
<b>AT</b>	High	16.6	Split	Stratified	Conservative
<b>BE</b>	High	51.6	Split	Stratified	Conservative
<b>BG</b>	Low	38.8	Mixed	-	Post-Communist
<b>CY</b>	Medium	27.9	Split	-	Southern
<b>CZ</b>	Medium	28.0	Split	Protectionist	Post-Communist
<b>DE</b>	High	36.1	Mixed	Stratified	Conservative
<b>DK</b>	High	75.9	Mixed	Inclusive	Scandinavian
<b>EE</b>	High	51.2	Unitary	Anglo-Saxon+	Post-Communist
<b>ES</b>	Low	31.1	Mixed	Protectionist	Southern
<b>FI</b>	High	41.4	Unitary	Inclusive	Scandinavian
<b>FR</b>	Low	42.2	Split	Stratified	Conservative
<b>UK</b>	Medium	14.3	Unitary	Targeted	Liberal
<b>GR</b>	Low	19.5	Split	Protectionist	Southern
<b>HR</b>	Low	27.8	Unitary	-	Post-Communist
<b>HU</b>	Medium	43.0	Split	Protectionist	Post-Communist
<b>IE</b>	Medium	15.7	Split	Targeted	Liberal
<b>IT</b>	Low	43.2	Split	Protectionist	Southern
<b>LT</b>	Medium	41.4	Unitary	Anglo-Saxon+	Post-Communist
<b>LU</b>	High	41.6	Split	-	Conservative
<b>LV</b>	Medium	50.4	Unitary	Anglo-Saxon+	Post-Communist
<b>MT</b>	High	33.6	Split	-	Southern
<b>NL</b>	High	10.5	Split	Stratified	Conservative
<b>PL</b>	Low	21.7	Split	Protectionist	Post-Communist
<b>PT</b>	Low	64.0	Split	Protectionist	Southern
<b>RO</b>	Medium	7.7	Split	-	Post-Communist
<b>SE</b>	High	54.2	Unitary	Inclusive	Scandinavian
<b>SI</b>	Low	58.4	Unitary	-	Post-Communist
<b>SK</b>	Medium	31.1	Split	Protectionist	Post-Communist

**Notes:** Trust in government calculated using Eurobarometer's 2014-2016 data. Calculated averages represent average percentage share of people who 'tend to trust' the national government (average for DE-E and DE-W and for UK-GBN and UK-NIR was calculated) (GESIS data archive). Childcare intensity is calculated using Eurostat's 2014-2016 average percentage data on children in formal childcare or education (per cent over the population of children aged 0 to minimum compulsory school), who participate in formal childcare services 30 hours or more per week [ilc\_caindformal] (Eurostat, 2021). Childcare systems

classified using Eurydice's national information sheets from 2014-2015 on Early childhood education and care systems in Europe (European Commission/EACEA/Eurydice, 2015). SI reform strategies have been assigned based on Garritzmann *et al.* (2022a, 2022b). Welfare regimes have been classified using Esping-Andersen (1990), Bonoli (1997) and Fenger (2007).



**Appendix 2. Regression models on determinants of CSI (unweighted)**

	<b>Model 1 (MLM)</b>	<b>Model 2 (FE)</b>	<b>Model 3 (RE)</b>
<b>Educational background (ref= lower secondary or below)</b>			
Upper secondary or post-secondary	-1.312**	-1.492**	-1.237**
Tertiary	-1.383**	-1.590**	-1.298**
<b>Income quartile (ref=1<sup>st</sup> quartile)</b>			
2 <sup>nd</sup> quartile	-0.260	-0.264	-0.257
3 <sup>rd</sup> quartile	0.330	0.378	0.308
4 <sup>th</sup> quartile	0.164	0.187	0.154
<b>Gender(ref=man)</b>			
Woman	0.370	0.350	0.385
<b>Employment status (ref=employed)</b>			
Otherwise <sup>a</sup>	0.974*	0.944*	0.978*
<b>Household structure (ref=couple with children)</b>			
Single with children	-0.108	-0.165	-0.091
Other <sup>b</sup>	1.531**	1.460**	1.552**
<b>Number of children (ref=multiple children)</b>			
1 child	-0.231	-0.247	-0.229
Have children outside the household	-1.575***	-1.529***	-1.592***
<b>Migration background (ref=otherwise<sup>c</sup>)</b>			
1-2 <sup>nd</sup> generation migrant	-0.546	-0.557	-0.527
_cons	41.991****	42.269****	41.896****
AIC	10593.4	10524.5	
BIC	10673.6	10593.92	
Intra-class correlations (%)	5.5		
Adj-R <sup>2</sup>		-0.011	
R <sup>2</sup>		0.015	
F		1.9	
Observations	1545	1545	1545

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ , \*\*\*\*  $p < 0.001$

**Note:** MLM - multilevel modelling. FE- Fixed-effects. RE – random effects. Notes: <sup>a</sup>Unemployed, student, retired, homemaker, sick or disabled, other; <sup>b</sup>Extended families, single people or those live in couples and have children outside the household; <sup>c</sup>Born in a surveyed country.

**Appendix 3.** Multilevel regression models on determinants of the CSI

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
<i>Individual-level</i>						
<b>Educational background (ref= lower secondary or below)</b>						
Upper secondary or post-secondary	0.097 (0.872)	0.130 (0.873)	0.133 (0.859)	0.135 (0.868)	0.103 (0.912)	0.094 (0.865)
Tertiary	-1.353 (0.904)	-1.337 (0.867)	-1.311 (0.871)	-1.296 (0.881)	-1.364 (0.915)	-1.305 (0.891)
<b>Income quartile (ref=1<sup>st</sup> quartile)</b>						
2 <sup>nd</sup> quartile	-1.232 (1.542)	-1.215 (1.536)	-1.217 (1.538)	-1.230 (1.541)	-1.205 (1.609)	-1.261 (1.545)
3 <sup>rd</sup> quartile	1.187* (0.663)	1.193* (0.660)	1.188* (0.655)	1.177* (0.656)	1.400** (0.676)	1.167* (0.661)
4 <sup>th</sup> quartile	1.870* (1.033)	1.897* (1.033)	1.919* (1.031)	1.897* (1.030)	2.058* (1.060)	1.886* (1.022)
<b>Gender(ref=man)</b>						
Woman	-0.780 (0.711)	-0.760 (0.712)	-0.769 (0.712)	-0.774 (0.709)	-0.811 (0.750)	-0.777 (0.716)
<b>Employment status (ref=employed)</b>						
Otherwise <sup>a</sup>	1.625** (0.758)	1.622** (0.756)	1.586** (0.756)	1.584** (0.753)	1.635** (0.788)	1.534** (0.734)
<b>Household structure (ref=couple with children)</b>						
Single with children	1.482* (0.769)	1.390* (0.780)	1.380* (0.779)	1.371* (0.777)	1.464* (0.792)	1.420* (0.783)
Other	3.498**** (0.835)	3.464**** (0.846)	3.460**** (0.848)	3.464**** (0.851)	3.383**** (0.925)	3.407**** (0.858)
<b>Number of children (ref=multiple children)</b>						
1 child	-0.503 (1.150)	-0.469 (1.154)	-0.474 (1.152)	-0.464 (1.155)	-0.404 (1.236)	-0.439 (1.160)
Have children outside the household	-2.114* (1.095)	-2.092* (1.097)	-2.070* (1.100)	-2.050* (1.094)	-2.090* (1.144)	-2.033* (1.096)
<b>Migration background (ref=otherwise<sup>c</sup>)</b>						
1-2 <sup>nd</sup> generation migrant	0.414 (0.757)	0.401 (0.756)	0.376 (0.757)	0.367 (0.760)	0.492 (0.764)	0.472 (0.766)
<i>Country-level</i>						
<b>Trust in government (ref=low)</b>						
Medium		3.247*** (1.033)	2.826*** (0.870)	2.632*** (0.929)	2.118* (1.203)	2.204** (0.930)

	High	1.776*	1.949**	1.787*	2.541***	2.501***
		(0.925)	(0.969)	(0.929)	(0.951)	(0.832)
<b>Childcare intensity</b>			-0.041*	-0.045*	-0.063	-0.062*
			(0.025)	(0.026)	(0.047)	(0.033)
<b>Childcare system (ref=unitary)</b>						
	Mixed			-0.382	0.604	0.333
				(0.848)	(1.154)	(0.744)
	Split			-0.746	0.732	0.211
				(0.777)	(0.973)	(0.715)
<b>SI reform strategy (ref=Stratified)</b>						
	Inclusive				2.840*	
					(1.689)	
	Substitutive				2.370	
					(1.843)	
	Protectionist				1.431	
					(1.185)	
	Anglo-Saxon+				2.370	
					(1.475)	
<b>Welfare regime (ref=Conservative)</b>						
	Scandinavian					2.419**
						(1.010)
	Liberal					1.881
						(1.601)
	Southern					1.441
						(1.494)
	Post-communist					1.983**
						(0.903)
<b>_cons</b>		41.895***	40.186***	41.689***	42.438****	40.255***
		*	*	*	(1.707)	*
		(1.405)	(1.573)	(1.638)		(1.617)
Level 1 individuals (residual variance)		61.527***	61.546***	61.544***	61.602****	62.560***
		*	*	*	(6.608)	*
		(6.568)	(6.570)	(6.583)		(6.856)
Level 2 countries (intercept variance)		3.764****	3.468***	2.574**	1.415	0.699
		(1.417)	(1.517)	(1.058)	(0.857)	(1.401)
<i>AIC</i>		10347.9	10343.9	10342.9	10346.2	9903.9
<i>BIC</i>		10428.0	10434.7	10439.0	10453.1	10006.4
Intra-class correlation (%)		5.8	3.1	2.5	2.3	1.1
						1.3

### Sample size

Level 1, <i>N</i>	1545	1545	1545	1545	1236	1545
Level 2, <i>N</i>	28	28	28	28	21	28

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ , \*\*\*\*  $p < 0.001$

**Notes:** <sup>a</sup>Unemployed, student, retired, homemaker, sick or disabled, other; <sup>b</sup>Extended families, single people or those who are in couples and have children outside the household; <sup>c</sup>Born in a surveyed country.

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<sup>2</sup>Unitary settings - for the whole age range (usually for children from around age 1, or soon after childcare leave).

<sup>3</sup> In a small number of cases (17 obs.), where respondents indicated 'don't know' (DK) in one or more CSI indicators, DK values were replaced with the individual's mean value of the CSI in each case to preserve the data.

<sup>4</sup> For 2016 year 85.2 and 86.2 surveys were used; for 2015, 84.3 and 83.3 survey, for 2014 year 81.2. 81.4 and 82.3 surveys (GESIS data archive)

<sup>5</sup> See Appendix 3 for the results with the standard errors in parentheses.

<sup>6</sup> Protectionist countries include Spain, Greece, Italy, Portugal, and Poland. Other countries with low trust in government countries include Slovenia, France, Croatia, and Bulgaria.

<sup>7</sup>50 per cent in Romania and the UK, 30 percent in Greece.