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Influence of local ECEC policy on the quality of ECEC centers in the Netherlands ☆

L. van de Kuilen [a,b,*], P.P.M. Leseman [c], I.M. de Wolf [b]

[a] Inspectorate of Education, St.-Jacobsstraat 200, 3511 BT Utrecht, the Netherlands
[b] Maastricht University, Minderbroedersberg 4-6, 6211 LK Maastricht, the Netherlands
[c] Utrecht University, Heidelberglaan 1, 3584 CS Utrecht, the Netherlands

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ABSTRACT

This study investigated the influence of local governance at the level of municipalities on the process quality of ECEC centers for 2- to 4-year-olds in the context of a privatized, marketized and decentralized ECEC system with both for-profit and not-for-profit providers. We studied the relation between local policy and ECEC-quality in a sample of 157 ECEC centers nested in 36 municipalities, with a total of 299 observations of process quality at two measurement waves. The results showed significant differences between municipalities in the observed emotional and behavioral support and engaged support for learning of the ECEC centers: 23% of the variance in emotional and behavioral support and 14% of the variance in engaged support for learning could be attributed to the municipal level. Contrary to our expectations, differences between municipalities in ECEC quality were not related to formal indicators of compliance with national legal requirements nor with formal indicators of coordination and quality assurance. However, exploratory analyses revealed that 'soft' horizontal governance of local networks of collaborating services was significantly associated with the engaged support for learning provided at ECEC centers. The local network governance measure included indicators of a mission-driven focus on reaching out to children and families with less financial resources, low educated parents or a migration background, collaboration of ECEC with other local social services to provide support for children and families with additional needs, and coordination of professional development and quality monitoring. Therefore, a more pronounced focus in ECEC policy on encouraging and monitoring local network governance is recommendable in hybrid, decentralized systems.

Introduction

Worldwide, as part of broader trends in public administration, national systems of early childhood education and care (ECEC) have been increasingly privatized and marketized in the past decades, while the heavy weight of ECEC governance has shifted from the national to the local level (OECD, 2017). Traditional hierarchical governance and quality assurance have been supplemented or replaced by new forms of multilayered 'soft' and 'horizontal' governance, using global curriculum guidelines and encouragements to collaborate locally rather than 'hard' legal requirements and detailed prescriptions. Yet, still little is known about the impact of these forms of governance on the quality of ECEC. The present study, conducted in The Netherlands, attempted to fill this gap by studying the relationships between the ECEC policies of municipalities and the quality of education and care provided by ECEC centers within these municipalities.

Ample research has shown that participating in high quality early childhood education and care can have important beneficial effects on children's cognitive and social-emotional outcomes later in life, especially regarding children from underprivileged families, that is, families with less financial resources, lower educated parents or a recent migration background (Melhuish et al., 2015; Zaslow et al., 2010; Shonkoff, 2011; Philips and Shonkoff, 2000). Investing in ECEC to increase access and uptake pays off in a high economic return for society, as has been found in a number of cost-benefit analyses (e.g., Heckman et al., 2010; Reynolds et al., 2011; Van Huizen et al., 2019). However, the beneficial impact on children and the rate of return on investment depend critically on the quality of ECEC (Elango et al., 2015; Burchinal et al.; 2010; Duncan et al., 2022; OECD, 2017; Van Huizen & Plantenga, 2018), particularly on the process quality (Howes et al., 2008; Philips & Lowenstein, 2011; Sabol et al., 2013).

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* Corresponding author
E-mail address: L.vandeKuilen@owinsp.nl (L. van de Kuilen).

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Process quality refers to the emotional and educational aspects of children's daily interactions in ECEC, and is thought to be a proximal determinant of child outcomes (Howes et al., 2008; Sabol et al., 2013; Slot et al., 2015). Structural quality, in particular the aspects group size, children-to-staff ratio and teachers' training level, is regarded conditional to process quality but not directly determining child outcomes (Dennis & O'Connor, 2013; Slot et al., 2015; Zaslow et al., 2010). Structural quality aspects are typically regulated at the national state level by statutory quality frameworks in most countries (Lokteff & Piercy, 2012; Rao & Li, 2009). Awareness is increasing that, in addition to this, process quality is also influenced by the organizational structure and culture of the ECEC center, the center's investment in professional development, orientation on the local community, and network relationships with other local social services for children and families, such as primary schools, health services and welfare services (Bayly, et al, 2021; Moore, 2020; Van der Werf et al., 2020; Van der Werf et al., 2021). In particular the center's commitment to supporting socioeconomically underprivileged communities and endorsement of an inclusive-emancipatory mission shared with local network partners, were found to distinguish ECEC centers of high quality from those of lower quality in two recent studies in the Netherlands (Van der Werf et al., 2020; Van der Werf et al., 2021) and one in the USA (Bayly et al., 2021), pointing to policy mechanisms at the local level that may influence ECEC quality.

If, to what extent, and how local ECEC policy influences ECEC quality is a largely understudied topic to date, yet highly relevant given the shift of ECEC governance from the national to the local level (OECD, 2017). Local ECEC policy may matter for process quality in ECEC through effective governance of local networks in which ECEC centers participate, including shared mission building with partners in the local network, raising common professional standards and creating commitment to educational equity. The influence of local policy on the quality of ECEC centers is the topic of the present study.

Decentralized governance

ECEC is in many countries privatized (state withdrawal), marketized (competition) and decentralized (execution and governance at the local level), fitting in with general trends in public administration in the past decades (Hague & Harrop, 2016; UCLG, 2010). As a consequence, ECEC is often provided in hybrid systems by a mix of public and private organizations, either for-profit or not-for-profit (e.g., Lloyd, 2020; Robinson, 2016; Van der Werf et al., 2021). These general trends and the hybrid systems of supply that have emerged as a consequence, have called for a new role of local and national governments. While state-withdrawal and marketization of social services, including ECEC, were dominant approaches under the New Public Management philosophy, the increased interest in social services as contributing to the public good has fueled a shift from traditional centralized 'government' to new multilayered horizontal 'governance' (Bryson et al., 2014; Provan & Kenis, 2008).

In this *New Public Governance* approach, (local) governments stimulate coordination and cooperation of services in the function of addressing significant (local) social goals, which require collaborative decision-making of several actors under auspices of the local government (Bryson et al., 2014; Denters & Rose, 2005; Hague & Harrop, 2016). While the expectations are that local network collaboration allows for more integrated and effective public services tailored to the local context (Fleurke, 1997; Denters, 2011; UGLC, 2010), the quality of the service delivery will depend on the degree to which parties agree on common goals and professional quality standards, succeed in coordinating services and are able to reconcile potentially conflicting demands and interests, calling for effective local network governance (Noordegraaf, 2008; Provan & Kenis, 2008; Putters, 2009; Stoker, 2011). Regarding ECEC, in many countries, hierarchical prescriptive top-down approaches to quality assurance have been supplemented or even replaced by national quality frameworks and curriculum guidelines, while decision-making, regulation, monitoring and evaluation have become tasks for the local government (Neuman, 2005). However, there is still limited evidence on the impact of local governance on ECEC quality.

Context of ECEC and ECEC governance in the Netherlands

The Netherlands has a split, hybrid system for early childhood education and care for different age groups in the age range of 0 to 4 years, with different funding systems, different public tasks, and being subjected to different government bodies (for overviews, see Knijn & Lewis, 2017; Slot, 2018). Full day childcare for children from 0 to 4 years of age, to support parents in combining care and work, is provided by both for-profit and not-for-profit private childcare centers. Half day pre-kindergarten education for 2.5 to 4-year-old children from underprivileged communities used to be a task of public, municipality-run welfare organizations, but following successive privatization and harmonization reforms, this task is now carried out by private organizations as well, both for-profit and not-for-profit. At age 4, children in the Netherlands are eligible for full day kindergarten which is part of the publicly funded primary school system. Kindergarten is compulsory from age 5, but participation is already nearly 100% at age four (OECD, 2016).

In 2010, new legislation was implemented to harmonize the ECEC sector for under fours (OKE Act; Ministerie van Onderwijs, Cultuur en Wetenschap, 2010). A single statutory quality framework was introduced for all types of ECEC, regardless of the legal entity of the organization and type of funding. The harmonized quality framework specifies age-dependent equal structural quality, health and safety conditions, and defines equal developmental goals and global curriculum guidelines for all ECEC services. Furthermore, within this harmonized system, all services are equally eligible for additional subsidy within the national educational equity policy to reach out to underprivileged children and to provide them with high quality early education and care. Within the 2010 OKE Act, municipal governments are given a leading role in the implementation of the national educational equity policy. Municipalities have to set up agreements with ECEC providers regarding the enrollment of children of underprivileged backgrounds, to distribute subsidies following these children, and to assure high quality provision for them. However, to what extent municipalities succeed in fulfilling these requirements and tasks, and if local governance indeed, as is intended, relates to the quality of ECEC, is as yet unclear.

Current study

To the best of our knowledge no studies to date have addressed the impact of municipal ECEC policy on the quality of ECEC centers. This study fills this gap. The Dutch case is interesting because of the combination of a privatized hybrid ECEC system with a strong decentralized governance approach. In the Dutch system, municipalities have ample freedom to shape and implement ECEC policies, and to adapt national guidelines to the local context. However, this could result in variation in ECEC quality between municipalities depending on the extent to which (a) municipalities comply with the legal requirements of the national policy and (b) succeed in their role of monitoring and improving the quality of ECEC and coordinating the local services. With regard to the latter, specifically (c) the local implementation of governance strategies regarding the social mission and outreach to underprivileged communities, shared goal setting, and interservice collaboration of ECEC and related services are of interest.

This paper addresses the following research questions:

(1) Are there systematic differences in ECEC quality between municipalities in the Netherlands?
(2) To what extent are these differences in ECEC quality related to municipal educational governance?

We expected systematic differences between municipalities in ECEC quality as a consequence of the decentralized governance of ECEC in

the Netherlands. To explain these differences, we first formulate two hypotheses that reflect the official governance view:

1 ECEC centers located in municipalities that comply stronger with the legal requirements municipalities have to fulfill, have on average higher observed process quality.
2 ECEC centers located in municipalities that comply stronger with the coordination and quality assurance task assigned to the municipalities, have on average higher observed process quality.

Following recent insights in the potential of horizontal governance of local networks of social services, we add a third, exploratory hypothesis:

1 ECEC centers located in municipalities with stronger mission-driven 'soft' local network governance, have on average higher ECEC process quality.

Method

This study focuses on the relation between municipal governance and the quality of the ECEC centers. Data on the quality of the ECEC-centers comes from the large-scale national cohort study pre-COOL on the quality and effectiveness of ECEC (pre-COOL Consortium, 2012; www.pre-cool.nl). Information on municipal ECEC governance comes from the ECEC policy monitor of the national Inspectorate of Education. Both studies were conducted in the same period, 2010-2012, allowing the linkage of both data sources.

ECEC centers

The national cohort study of preschool children (pre-COOL) was commissioned by the Dutch Ministry of Education, Culture and Science and the National Science Foundation to investigate the quality and developmental effects of half-day and full-day pre-kindergarten education and care for 2- to 4-year-old children, with a specific interest in the developmental effects on children from underprivileged families with a low socioeconomic status or migration background. The cohort started in 2010, when children were on average two years and three months of age. The children were followed during ECEC and primary school, with a final assessment at age 12, at the end of primary school. To facilitate the follow-up of the cohort through primary education, starting at age 4 in the Netherlands, a deliberate sample of 300 primary schools with a moderate to high representation of children from underprivileged backgrounds was drawn as first step, of which 139 (46.3%) schools agreed to participate. Next, the participating schools were asked to identify ECEC centers that were attended by most of their new students. Five hundred and two ECEC-centers were approached, of which 263 agreed to participate (52.4%). The participating centers did not differ from non-participating centers in terms of geographical distribution across the Netherlands (Slot et al., 2015).

The cohort study included information on the quality of the ECEC centers based on classroom observations. Classroom observations were conducted by trained research-assistants in two waves: in 2011 and in 2012. For logistic and methodological reasons, observations were only conducted in ECEC centers with at least four children participating in the child assessments of the pre-COOL study. Observations were conducted in 162 centers in 2011 (61.6% of the total center sample) and in 150 centers in 2012 (57.0% of the total center sample), largely overlapping with the centers observed at the first wave (Pre-COOL Consortium, 2012; 2014). At both waves, about 45% of the centers provided a full day program and 55% a half day program. Due to the deliberate oversampling of centers serving underprivileged children, centers in urban municipalities with a larger proportion of underprivileged families were overrepresented. Nonetheless, the sample covered representative variation regarding the main types of ECEC for 0- to 4-year-olds in the Netherlands, while also small and middle-sized urban municipalities and small rural municipalities were included. The children served by the centers in the current sample were roughly equally children with and without socioeconomic risks (Leseman & Veen, 2022).

Municipalities

The information on the ECEC policies of municipalities comes from the Dutch Inspectorate of Education. The inspectorate regularly monitors the compliance of the municipalities with the legal requirements set by the national government in the OKE Act (Ministerie van Onderwijs, Cultuur en Wetenschap, 2010). These legal requirements include setting up agreements with local parties about the children eligible for additional subsidy to participate in ECEC, referred to as target children. In addition, municipalities must ensure that the local supply of ECEC is sufficient to provide all target children with a place and initiate active outreach to encourage participation. Municipalities must also ensure that children are able to transition smoothly from ECEC centers to primary school and stimulate collaboration between ECEC centers and primary schools. Finally, municipalities, primary schools and ECEC centers have to agree upon the aspired outcomes in terms of children's development that should be achieved by ECEC.

The Inspectorate also monitors to what extent the municipalities carry out their coordinating role with regard to ECEC. This concerns policies to involve parents, the use of an accredited ECEC curriculum, and coordination of other services with ECEC, in particular public child and youth health care, and youth care. The Inspectorate also monitors the extent to which municipalities evaluate and systematically attempt to improve the quality of ECEC (Inspectie van het Onderwijs, 2010).

In the period between 2010 and 2012, the Inspectorate assessed the local ECEC governance in all 338 municipalities in the Netherlands with ECEC provisions serving underprivileged children and receiving subsidy within the national educational equity policy (Inspectie van het Onderwijs, 2013). Merging the data of the municipal ECEC governance monitor of the Inspectorate with the data of the pre-COOL study on the quality of the ECEC centers, resulted in a sample of 157 centers, 96% of all centers of the pre-COOL study with group-based observations of process quality, that could be matched to the policy data of 36 municipalities, 11% of the nation-wide sample of the Inspectorate. This included 142 centers with process quality scores at both waves, 14 with quality scores at wave 1 and 1 with quality scores at wave 2 only. On average, 1.7 groups were observed at the centers at both waves, which concerned partly different groups at the two waves or the same groups but with different teachers. Group-level quality scores were aggregated to the center-level at both waves, resulting in 299 datapoints. To increase the statistical power of the analyses, all 299 datapoints were used, while wave was added as a control variable.

Measures and procedures

ECEC classroom process quality

Classroom observations were used to evaluate the quality of the ECEC centers, with the Classroom Assessment Scoring System Toddler (CLASS; La Paro, Hamre & Pianta, 2011). Observers were trained by a licensed CLASS trainer and achieved at least 80% agreement within one scale-point deviation on a 7-point scale with the trainer on an online test before they were admitted to do the classroom observations (the average agreement was 86.2%; agreement by chance was 33%). Prior to the data collection, all observers were asked to conduct one live observation together with the trainer. Inter-observer agreement with the trainer within one scale-point deviation was on average 83.3%. Each classroom observation was conducted in the morning, during a three-month period in the Spring 2011 and Spring 2012. Classroom processes were, in accordance with the guidelines of the CLASS, observed during four 15 to 20 minutes cycles on the observation morning, covering child-managed play, teacher-led instruction, creative activity and snack time, but not outdoor play.

Table 1
Dimensions of Compliance With Legal Requirements and Coordination and Quality Assurance

Legal requirements	
Local agreement on the definition of eligible underprivileged children	Clear definition was formulated in line with the national education equity policy and the definition was well-explained and justified.
Ensuring sufficient outreach	The number of eligible children was known and sufficient supply for these children was created in terms of child places.
Encouragement to use ECEC facilities	Overview of the eligible children who did not use ECEC, implemented targeted measures to encourage eligible children and their parents to participate in ECEC, and agreements with local partners to share the responsibility for reaching out to the children and their parents and to implement effective measures.
Transition from ECEC centers to primary school	Agreements with the local partners in ECEC and primary education about the transition between ECEC and kindergarten departments of primary school to span the entire 2.5 to 6 years age range, and about the transfer of information about the child.
Agreements on the results of ECEC	Determined what the results of ECEC should be in terms of child outcomes (e.g., regarding language skills).
Coordination and quality assurance	
Parental involvement	Policy implemented at the municipal level that included collecting information about the targeted population, informing parents about ECEC, providing activities for parent and stimulating parental participation in ECEC centers.
Use of an ECEC curriculum	Encouragement of ECEC centers to work with an officially approved ECEC curriculum, based on evaluations by the National Youth Institute or explicitly justified if the ECEC curriculum used was not officially approved.
Extra care for children	Overview of the care institutions that could be called upon by ECEC centers and primary schools and of the type of care these institutions could provide, agreements for collaboration and responsibility were clear.
Quality assurance system of ECEC and primary school	Shared view on quality and how to assess quality, and implemented a quality assurance system for ECEC and primary education.
Municipal ECEC coordination	Network of ECEC partners was well coordinated. There had to be coordination for the (central) city, as well as for the city districts, boroughs, neighborhoods, etc., as well as for the welfare organizations and school boards. Coordination did not only include ECEC strictly, but it included also the coordination with consultation bureaus, the Youth and Family Center, and the municipal care structure in total.
Systematic evaluation and improvement of ECEC	Local agreements regarding ECEC and attainment of the desired results were evaluated annually, the findings were fed back to the field and any issues for improvement were identified and measures for improvement were implemented.

The CLASS framework reflects the social-emotional and educational features of teacher-child and child-child interactions in the classroom that have been found to be positively related to children's development of self-regulation, pre-academic and social skills (La Paro et al., 2011). Classroom quality was assessed on the eight CLASS-dimensions, using 7-point scales ranging from 1 or 2 (classroom is low on that aspect); 3 to 5 (classroom is in the midrange); to 6 or 7 (classroom is high on that aspect). Following the CLASS manual, two overarching domains were distinguished (La Paro et al., 2011): (1) Emotional and behavioral support and (2) Engaged support for learning. Scores were computed as the mean of the dimension scores for each domain.

Local educational governance

Municipal ECEC policy was assessed by experienced primary school inspectors. The inspectors were specifically trained for ECEC inspections and conducted at least two municipal ECEC governance inspections together with an experienced ECEC inspector. The inspectors interviewed the local policy staff responsible for ECEC policy, interviewed managers of ECEC services and studied the ECEC policy documents. The results of the assessments of the municipal ECEC policies were reported in a national report on the quality of municipal ECEC policies (Inspectie van het Onderwijs, 2013).

The inspectors assessed the municipal ECEC policy on 11 aspects; five aspects addressing compliance with the legal requirements, six aspects corresponding to the coordination and quality assurance task of the municipalities (Table 1).

Each aspect was scored on a four-point scale, where a score of 1 stands for 'inadequate', 2 for 'moderate', 3 for 'adequate' and 4 for 'good'. Each aspect described one or more criteria that had to be met. An aspect was scored 'inadequate' if none of the criteria were met. An aspect was assessed 'moderate' if one or more criteria were met, but others were not. An aspect was assessed 'adequate' if all criteria were sufficiently met. A 'good' was given if an aspect was met excessively well and the municipality could serve as an example for others on this aspect.

Based on the assessments of the municipal ECEC policies by the Inspectorate, two constructs were created for municipal ECEC policy quality: (1) Compliance with legal requirements and (2) Coordination and quality assurance. The internal consistency of the two quality measures was good (Cronbach's $\alpha = .719$ for compliance with legal requirements and $\alpha = .729$ for coordination and quality assurance). Principal components analysis was conducted with a forced two components solution. The two constructs were created as averages of the items weighted by the component scores.

For a further exploration, given the specific interest in the role of governance strategies to enhance shared social mission setting, orientation on the needs of the local community and interservice collaboration, 5 items of the original measurement instrument were selected, covering

specifically mission-driven strategies to increase outreach to underprivileged families and to encourage these families to use ECEC facilities, the provision of additional care and family support for children with special and additional needs through collaboration with other social services, and the coordination of professional development and quality monitoring. The internal consistency of the construct local network collaboration, covering a heterogeneous set of policy actions deemed relevant for local ECEC network functioning, was sufficient for the current purpose (Cronbach's $\alpha = .541$).

Control variables

A number of municipal context characteristics were included to control for possible confounds. The control variables included the *size* of the municipality (defined by the number of inhabitants), the *number of all two-and three-year-old children* living in the municipality, the *number of socioeconomically underprivileged children* eligible for ECEC and the *annual municipal budget* for educational equity policy in ECEC. This budget is assigned by the national government, based on weighted disadvantage scores per primary school, which are then aggregated to the municipal level. The disadvantage score reflects the proportion of children at a primary school with low to very low educated parents (lower prevocational education at most) above a certain threshold. The aggregated disadvantage score, therefore, indicates the severity of concentrated disadvantages among children in a municipality. Because of the high intercorrelations among these variables, we used *size* of the municipality and a combined variable *budget per target child* as control variables.

Analyses

The analyses focused on the relation between the quality of municipal ECEC policy with the quality of the ECEC centers in the municipalities. Given the hierarchical structure of the data, a multi-level linear regression was conducted, using R (Wickham & Grolemund, 2017; Hox, 2017). Two levels were distinguished: level 1 concerned the 299 quality observations at the two waves, which were nested in level 2, the 36 municipalities. The average cluster size based on datapoints nested within municipalities was 8.31. Two outcome measures were used in the analyses: (1) Emotional and behavioral support and (2) Engaged support for learning. These two outcome measures were highly intercorrelated ($r = .599$, $p < .001$). Therefore, we estimated separate models for both measures.

The analyses started with an intercept-only model (Model 0). This model was specified to estimate the amount of variance at the municipal level and to calculate the intra-class correlation (ICC). In Model 0, wave (1 or 2) was added as a fixed variable to control for the variance at the two measuring points. Model 1 includes the other control variables as well. The variables of interest, the two measures of municipal ECEC policy (compliance with legal requirements and coordination and quality assurance) were included in Model 2. Because the measures were highly intercorrelated ($r = .772$, $p < .001$), they were added in separate models (models 2a and 2b). Model 3 includes the measure of local network collaboration.

Relative model fit was compared using the AIC (with a decrease of the AIC indicating improved fit) and the pseudo R^2. Adding random slopes to the models did not result in a decrease of the AIC.

Results

Descriptives

The mean scores for emotional and behavioral support were in all centers, and in all municipalities above the conventional benchmark of 3, while most centers in most municipalities scored above the conventional benchmark of 5, indicating overall sufficient to good quality (La Paro et al., 2011). With regard to engaged support for learning, the variance within and between municipalities was larger, while the mean scores were lower than for emotional and behavioral support, which is a common finding in studies in the Netherlands and elsewhere using the CLASS Toddler (Slot et al., 2019). It is also noteworthy that both measures indicated on average higher quality at wave 1 than at wave 2 (the standardized difference for emotional and behavioral support is medium-sized, for engaged support for learning small to medium-sized). We will return to this finding in the Discussion Section. Second, the mean score of the municipal indicators, based on raw scores, indicated overall implementation of the policy requirements just below 'adequate' (score 3) regarding all three indicators, but with large variation between municipalities. Third, the variance in budget per target child stands out. This budget varied from €374 to €16,593, which can be explained by the way these budgets are calculated (see Method): if disadvantages among children are comparatively mild and more equally distributed over schools (low degree of concentration), municipalities receive less budget per underprivileged child.

Multi-level analysis

A multi-level analysis was conducted to account for the nested structure of the data. We tested two series of multi-level models, based on the two outcome measures (emotional and behavioral support and engaged support for learning). In addition, we conducted an exploratory analysis.

Table 2

Emotional and behavioral support

Table 3 shows the results of the multi-level analysis with emotional and behavioral support as dependent variable. Model 0 is the random intercept model, with only the measurement wave included as level 1 predictor to control for the observed difference in quality scores between the two waves. Model 0 shows that 23.4% of the variance in emotional and behavioral support of ECEC centers can be attributed to the municipal level, considering wave as fixed effect. Model 1 includes two main characteristics of the municipalities; size and ECEC budget per target child. The results of model 1 show that municipal size and municipal ECEC-budget per target child were not significantly related to emotional and behavioral support. The model fit index AIC increased to 803.50, indicating worse model fit, and the explained variance was negative (-2.7%). Model 2 includes the ECEC policy indicators of the municipalities. Model 2a focuses on coordination and quality assurance, Model 2b on compliance to legal requirements. The results in Table 3 show that none of the indicators of municipal ECEC policies were significantly related to emotional and behavioral support. Adding these variables to the model led to a decrease of the AIC (Model 2a: AIC = 805.49; Model 2b: AIC = 805.39). Furthermore, the explained variance was negative (model 2a: R^2 = -4.2%, model 2b: R^2 = -4.0%). Therefore, Model 0 was considered the final model. In this model, only wave had a significant negative effect on emotional and behavioral support ($\beta = -.690$, $p < .001$). The other variables, municipal size, municipal budget per target child, and both municipal policy variables had no significant effect on emotional and behavioral support.

Engaged support for learning

Table 4 shows the results of the multi-level analysis with engaged support for learning as dependent variable. Model 0 shows that 14.2% of the variance in engaged support for learning of ECEC centers can be attributed to the municipal level, considering wave as fixed effect. Model 1 shows that municipal size and municipal ECEC-budget per target child were not significantly related to engaged support for learning. The AIC increased to 825.76, indicating a worse model fit, and the explained variance was negative (-.5%). Coordination and quality assurance, added in Model 2a, and compliance to legal requirements, added in Model 2b, neither significantly related to engaged support for learning. The explained variance in Model 2a was slightly positive (.9%), and

Table 2
Means, Standard Deviations and Score Range of ECEC Quality, Municipal Characteristics and Municipal Governance Indicators

Variables	N	Mean	SD	Range
Process quality measures - Wave 1				
Emotional and Behavioral Support	156	5.38	.52	3.60-6.55
Engaged Support for Learning	156	3.30	.81	1.83-5.88
Process quality measures - Wave 2				
Emotional and Behavioral Support	143	5.03	.40	3,95-6.00
Engaged Support for Learning	143	3.06	.61	1.75-4.33
Municipal characteristics				
Municipal size (number of inhabitants)	36	138,424	161,291	20,579-755,605
Budget per target child (in €)	36	€8,419.25	€4,882.71	€374-16,593
Municipal policy measures				
Compliance with legal requirements*	36	2.58	.37	2.00-3.33
Coordination and quality assurance*	36	2.52	.47	1.80-3.60
Local network collaboration	36	2.65	.38	2.00-3.80

* In the table, we have included the unweighted average score so that the municipal constructs are comparable. In the models, we used the weighted average for the constructs Compliance with legal requirements and Coordination and quality assurance.

Table 3
Multilevel-analysis Emotional and Behavioral Support

Emotional and Behavioral Support	Model 0	Model 1	Model 2a	Model 2b
Fixed effects				
Intercept	.307**	.307*	.309*	.313*
Wave	-.690***	-.690***	-.690**	-.690**
Municipal size		-.030	-.032	-.020
Municipal ECEC-budget per target child		.023	.023	-.010
Coordination and quality assurance			.006	
Compliance legal requirements				.047
AIC	799.52	803.50	805.49	805.39
Variance partitioning ICC	23.4%			
Explained variance pseudo R^2		-2.7%	-4.2%	-4.0%

Note. *** $p < .001$; ** $p < .010$; * $p < .050$

Table 4
Multilevel-analysis Engaged Support for Learning

Engaged Support for Learning	Model 0	Model 1	Model 2a	Model 2b
Fixed effects				
Intercept	.127	.118	.152	.130
Wave	-.339**	-.338**	-.337**	-.337**
Municipal size		-.160	-.186	-.135
Municipal ECEC-budget per target child		.099	.069	.019
Coordination and quality assurance			.163	
Compliance legal requirements				.111
AIC	823.09	825.76	825.24	826.98
Variance partitioning ICC	14,2%			
Explained variance pseudo R^2		-.5%	.9%	-.7%

Note. *** $p < .001$; ** $p < .010$; * $p < .050$

the explained variance in Model 2b was negative (-.7%). Adding coordination and quality assurance and compliance to legal requirements to the model led to an increase of the AIC (Model 2a: AIC = 825.24; Model 2b: AIC = 826.98). Therefore, Model 0 was considered the final model. In this model, only wave had a significant negative effect on engaged support for learning (β = -.339, $p < .010$). The other variables, municipal size, municipal budget per target child, and both municipal policy variables had no significant effect on engaged support for learning.

Exploratory analysis

A final analysis was conducted to explore the influence of the municipal ECEC network governance on ECEC quality, with the construct local network collaboration included as predictor. Table 5 shows the results of the multilevel analyses on emotional and behavioral support (Model 3). The Table shows that local network collaboration was not significantly related to emotional and behavioral support nor did the construct add to the strength of the model (AIC = 805.29). The explained variance was negative (-3.9%).

Table 6 shows the results of the multilevel analyses on engaged support for learning, including the local network collaboration variable (Model 3). Local network collaboration was significantly positively related to engaged support for learning (β = .292, $p < .05$). Adding local network collaboration led to a decrease of AIC (model 0: AIC = 823.09, model 3: AIC = 822.13) and a positive explained variance (R^2 = 3.7%), indicating improved model fit.

Discussion

ECEC systems have been increasingly privatized and marketized in the past decades, while traditional hierarchical governance and quality assurance have been supplemented and even replaced by new forms of multilayered 'soft' and 'horizontal' governance at the local level, using global guidelines, process recommendations and encouragements to

Table 5
Multilevel-analysis Emotional and Behavioral Support and Network Items

Emotional and Behavioral Support	Model 0	Model 1	Model 3
Fixed effects			
Intercept	.307**	.307*	.323*
Wave	-.690***	-.690***	-.690***
Municipal size		-.030	-.027
Municipal ECEC-budget per target child		.023	-.009
Local network collaboration			.074
AIC	799.52	803.50	805.29
Variance partitioning ICC	23.4%		
Explained variance pseudo R^2		-2.7%	-3.9%

Note. *** $p < .001$; ** $p < .01$; * $p < .05$

Table 6
Multilevel-analysis Engaged Support for Learning and Network Items

Engaged Support for Learning	Model 0	Model 1	Model 3
Fixed effects			
Intercept	.118	.118	.173
Wave	-.338**	-.338**	-.337**
Municipal size		-.160	-.143
Municipal ECEC-budget per target child		.099	-.033
Local network collaboration			.292*
AIC	823.09	825.76	822.13
Variance partitioning ICC	14.2%		
Explained variance pseudo R^2		-.5%	3.7%

Note. *** $p < .001$; ** $p < .010$; * $p < .050$

collaborate locally rather than 'hard' legal requirements and detailed prescriptions (cf. Denters & Rose, 2005; Hague & Harrop, 2016). Yet, still little is known about the impact of these forms of governance on the quality of ECEC. The present study, conducted in The Netherlands, provides first tentative evidence on this issue.

Dutch ECEC presents an interesting case. ECEC in The Netherlands is provided by both public and private for-profit and not-for-profit organizations, while the governance of ECEC is strongly decentralized to the municipal level. Within this hybrid system, ECEC centers have a high level of autonomy, while local governments, in turn, also have ample freedom to shape and implement ECEC policies, thereby risking wide variation in quality both at the center and the municipal level. To ensure sufficient accessibility and quality, especially for children from families with less financial resources, low educated parents or a migration background, and to prevent strong differentiation between municipalities, the national government has issued a number of legal requirements and guidelines that should be observed, respectively encouraged locally. The national Inspectorate of Education, has the task to monitor the compliance of the municipalities with these requirements and guidelines. The overarching question of the present study was whether this form of governance impacts ECEC quality.

The present study is to the best of our knowledge one of the first to examine this form of decentralized governance of a hybrid ECEC system. The two questions addressed in this study were: *(1) Are there systematic differences in ECEC quality between municipalities in the Netherlands?; (2) To what extent are these differences in ECEC quality related to municipal educational governance?* To answer these questions, we merged observational data on the emotional and behavioral support and engaged support for learning of ECEC centers nested within municipalities, collected in a large-scale national cohort study in 2011 and 2012, with data on the ECEC policies in these municipalities collected within the same time frame by the Dutch Inspectorate of Education as part of the Inspectorate's monitoring task.

The results showed, as expected, considerable systematic differences in observed ECEC quality between municipalities: 23.4% of the variance in emotional and behavioral support and 14.2% of the variance in engaged support for learning was located at the level of the municipalities. This amount of municipal level variance can be considered large compared to, for instance, the variance at the municipal level found for primary schools in a related study in partly the same municipalities, which amounted to 4% at most on several quality indicators (Van de Kuilen et al., in prep.). Thus, the findings suggest ample room for influence of local policy in ECEC. However, contrary to the expectations and also to the assumptions underlying the Dutch governance approach to ECEC, the variance at the municipal level could not be explained by the degree in which municipalities complied with the legal requirements (hypothesis 1) and fulfilled their legally required coordination and quality assurance task (hypothesis 2), as assessed with the standard monitoring instrument of the Inspectorate of Education. Thus, despite substantial variance at the municipal level, the governance approach, reflected in the indicators used to monitor local ECEC, was apparently not effective. There are several possible explanations. Most of the requirements and guidelines are formulated in terms of formal agreements and procedures that have to be established between local partners, or in terms of definitions and targets that have to be agreed upon locally. However, the content of these agreements and their implementation are not specified and thus not monitored, nor is the adequacy of the specific agreements and definitions reached at the local level tested. Possibly, this procedural, formal, and 'content-free' approach allows for too much variation when it comes to actual implementation.

As a further exploration, we selected, from the monitoring instrument of the Inspectorate, a subset of indicators that most closely reflected current scholarly views on effective network governance in decentralized systems (cf. Bryson et al., 2014; Provan & Kenis, 2008). This involved specifically indicators concerning mission-driven strategies to increase parent and community involvement, interservice coordination in order to provide extra care and family support for children with additional needs in ECEC, the presence of a comprehensive intersectoral services network including public infant and child health care, youth care, family support and other social services, and a well-established coordination role. A composite measure of these indicators was found to significantly predict municipal variance in the observed engaged support for learning of the ECEC centers, but not in emotional and behavioral support, thus partly confirming our exploratory hypothesis 3. The latter can possibly be explained by the overall high level of emotional and behavioral support of Dutch ECEC found in the current study, in line with the findings in a nationally representative ECEC quality monitoring study (Slot et al., 2019). Likely, emotional and behavioral support may have had less priority in the local policy context than engaged support for learning, where further improvement was, and still is, clearly needed in most municipalities (Slot et al., 2019).

Thus, our additional exploratory analysis seems to indicate that effective local network governance can have an impact on, at least, the engaged support for learning of ECEC centers. This finding is in line with the findings of recent research using nationally representative data on Dutch ECEC collected in 2017 and 2018 (Van der Werf et al., 2021), suggesting that network governance at the local level, with a relational approach based on a shared social mission, mutual trust and equality of parties, can achieve public goals more effectively than traditional sectoral top-down governance. A recent study in the USA also points to the positive effect of ECEC centers' engagement with the local community

on the provided quality (Bayly et al. 2021). With regard to monitoring the quality of ECEC, as a task of the Inspectorate of Education in The Netherlands, the findings, therefore, also suggest that more emphasis on the structure, dynamics and governance of local networks around ECEC could result in a more valid assessment of the quality of the local educational policy.

As a large part of the variance in observed quality at the municipal level could not be explained by the current policy measures, other factors at the municipal level have likely influenced ECEC quality as well. A possibly important factor is the (additional) local quality monitoring of ECEC by the municipal Health Authority, focusing on compliance with statutory regulations regarding heath, physical and emotional safety, and structural quality. Part of the variance at the municipal level may have reflected differences in monitoring by the local Health Authorities. However, no measurements were available to test this hypothesis. It should be noted that, although decentralized to the local level, all local Health Authorities apply the same statutory quality framework and coordinate their monitoring nationally. Thus, while other, unobserved factors at the municipal level may have caused additional variance in ECEC process quality, at least a significant part of the variance found in this study could be related to local network governance.

Another finding of the present study is that the budget per child did not explain variance in the observed emotional and behavioral support and engaged support for learning of ECEC. This may point to compensatory effects of the variation in budget, as is intended by policy. In the Dutch system, the budget per child available to a municipality reflects the aggregated severity and concentration of children's socioeconomic disadvantages: the less severe and concentrated the disadvantages based on socioeconomic indicators, the smaller the budget. If the severity of disadvantage causes *ceteris paribus* lower quality of ECEC centers due to the accumulation and concentration of risks (e.g., Lee et al., 1998; see also Condron et al., 2013, for a similar analysis regarding school segregation in the USA), higher budgets per child accrued at the center level may facilitate measures to counteract this negative effect on quality. In an analysis of the socioeconomically segregated Dutch primary school system with additional budget per student based on similar disadvantage indicators, Ladd and Fiske (2011) reached exactly to this conclusion. To the extent that this budgetary compensation mechanism is indeed effective, no association would be expected between the budget per child and the quality of ECEC at the level of municipalities.

Lastly, the results showed that the quality of Dutch ECEC declined substantially between 2011 and 2012, coinciding with a drastic cut in the subsidy of child care costs for parents using full day child care but not for parents using half day educational pre-kindergarten programs with funding through the municipalities. This decline has been analyzed previously, using a difference-in-differences approach to establish causality (Akgündüz et al., 2015). This study showed that highly likely due to the subsidy cut the quality in full day childcare centers declined by about one third of a standard deviation, while the quality in the half day pre-kindergarten centers that were not affected by the subsidy cut, was maintained. Although not directly related to the topic of the current study, these findings add to the evidence that local and national policies regarding funding do matter for ECEC quality in privatized hybrid systems, whether by causing shocks that affect quality or by compensating for the potential negative effect of risk accumulation and concentration, as was discussed above.

Limitations

Several limitations to the present study should be mentioned. First of all, the sample at the municipal level was small and the analyses may have been underpowered at this level. In addition, large urban municipalities were overrepresented and small rural municipalities were underrepresented in our sample. Note, however, that we found substantial variation in ECEC quality between municipalities which, in our exploratory analysis, could at least partly be explained by an exploratively adapted policy construct. Second, related to this, the monitoring instrument of the Inspectorate of Education to assess the quality of local educational policy focused on compliance with formal procedures and agreements, in line with the Dutch governance approach to ECEC. However, this may have resulted in noisy or irrelevant indicators, which failed to provide insight into the actual implementation of local ECEC policies and, therefore, could not explain the observed municipality level variance in quality. In-depth theoretically informed research on local networks, for example regarding their mission, structure, and internal communication and interaction, can provide more insight into the relationship between local network governance and the quality of ECEC. Finally, the use of a correlational design does not allow for conclusions regarding the causal direction of the predictive relationship found in the exploratory analysis. Nonetheless, we believe that the current findings are relevant to the issue of optimizing the governance of ECEC in hybrid, decentralized systems.

Conclusion

The main conclusion of the present study, based on Dutch data, is that in hybrid, decentralized ECEC systems substantial differences may emerge between municipalities in the emotional and behavioral support and engaged support for learning provided by ECEC centers, despite a national harmonized legal framework and global curriculum guidelines. In an exploratory analysis, we found indications that effective local network governance may be important for the quality of ECEC. The stronger the governance of local networks, the higher the quality of the ECEC centers, who may benefit from a strong role of the municipality as coordinator, convenor or catalyst within the local network. A more pronounced focus on 'soft' local network governance is recommendable in hybrid, decentralized systems. Monitoring the compliance with statutory formal and procedural requirements, reflecting a traditional hierarchical governance approach, may have less impact on ECEC quality in such systems.

CRediT authorship contribution statement

L. van de Kuilen: Conceptualization, Methodology, Formal analysis, Writing – oringinal draft, Writing – Review & editing. **P.P.M. Leseman:** Funding acquisition, Methodology, Supervision, Writing – Review & editing. **I.M. de Wolf:** Supervision, Writing – Review & editing.

Declarations of interest

None.

Data Availability

The authors do not have permission to share data.

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