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Preschool Children's Competencies: The Role of Family Resources, Socioeconomic Status, and Early Childhood Education

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Children's competencies, integrated abilities to apply knowledge, skills and attitudes, are shaped by the interaction of individual, family and education programme type. This quantitative study, based on a sample of children from Slovenian preschools (N = 886), aimed to examine the extent to which child characteristics, family socioeconomic status, family resources and preschool context predict children's competencies. Hierarchical regression analysis was conducted across four blocks of predictors. The model explained 36.8% of the variance in children's competencies. Individual factors (gender, language), distal family socioeconomic factors (parental employment and mother's education), proximal family processes (basic needs and family support, equality of learning and developmental opportunities, and extracurricular activities), and institutional factors (shorter programme attendance and preschool absenteeism) all made significant contributions to the explanation of children's competencies. Equality of learning and developmental opportunities, as a proximal family process, emerged as the strongest predictor, while family resources and the home environment added explanatory power beyond socioeconomic status. Results further indicate that the contribution of shorter preschool programmes varies by context, with limited compensatory potential in disadvantaged families. Implications point to the need to consider the availability, duration and quality of preschool programmes in the Slovenian context, as well as the importance of strengthening parental involvement through targeted educational and supportive programmes, especially for families at risk, thereby enhancing continuity of learning between family and preschool and optimising the development of children's competencies.

Keywords: children's competencies, hierarchical regression, ECE programme, family resources, Slovenia

INTRODUCTION

Early development of children's competencies, as an integration of abilities to apply knowledge, skills, and attitudes in different situations (OECD, 2023), unfolds through

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the dynamic interaction between individual predispositions and environmental contexts. According to the bioecological model (Bronfenbrenner & Morris, 2007), research indicates that children actively participate in their own development through proximal interactions within the family and early childhood education (ECE) institutions as key microsystems (Merçon-Vargas et al., 2020; Šindić, 2010; Šindić, 2021). Within the bioecological perspective, socioeconomic status (SES) represents a distal structural factor, the family environment functions as a proximal developmental mechanism, and ECE attendance constitutes the key institutional context.

Cross-national evidence consistently highlights the importance of family and institutional contexts in shaping early childhood competencies.The quality of the family environment, including the availability of developmentally stimulating activities and interactions, significantly contributes to the development of children's competencies (Bonifacci et al., 2024). At the same time, socioeconomic status shapes access to and quality of these resources (Ergül et al., 2017; Rakesh et al., 2025), while financial insecurity may have negative developmental effects (Fuller et al., 2025). Parental collaboration and involvement in ECE programmes contribute to more favourable developmental outcomes in children (Syuraini et al., 2022), including children at risk enrolled in shorter programmes (Licardo, 2026) and can be understood through the mesosystem within Bronfenbrenner's ecological model (Bronfenbrenner & Morris, 2007). Parental education is additionally identified as an important factor supporting child development, particularly in the domains of socio-emotional competencies, self-regulation, and school readiness (Vatou et al., 2026b).

Research indicates that ECE programmes contribute to children's development through structured activities (Atteberry et al., 2019; Denker & Atteberry, 2024), particularly for children at risk (Heckman, 2012; Moore et al., 2014), with long-term benefits also evident in school contexts and later (Pelletier and Corter, 2019; Lintner, 2025; Garcia et al., 2020). Continuity of attendance in early childhood settings is further confirmed as a significant factor, while absences are associated with lower competencies across developmental domains (Ansari & Purtell, 2018; Gottfried & Ansari, 2021; Narea et al., 2025; Davies et al., 2025).

In addition to contextual factors, individual child characteristics contribute to variability in developmental outcomes. Vatou et al. (2026a) and Ma et al. (2025) indicate that girls, on average, achieve higher results in socio-emotional and speech development. In the domain of motor development, Kendić et al. (2023) report gender differences in developmental patterns between boys and girls, while Brandlistuen et al. (2021) emphasize age as a consistent predictor of school readiness independent of gender. Regarding language development, Licardo and Sraka Petek (2025) highlight lower levels of competencies among Roma children and children of immigrants in Slovenia.

Despite extensive international evidence on the importance of family and institutional factors, the Slovenian context still lacks clarity regarding how different organisational forms of ECE programmes, in interaction with family resources and socioeconomic conditions, contribute to the development of children's competencies. While the national regulatory framework (Kindergarten Act, 1996) provides for different types of

ECE programmes (full-day, half-day, and shorter programmes), and strategic documents emphasize the role of early childhood institutions in reducing educational inequalities (White Paper on Education in the Republic of Slovenia, 2011), empirical findings still indicate differences in children's competencies depending on programme duration and type (Licardo & Sraka Petek, 2025, Licardo et al., 2024a). However, it remains an open question to what extent early childhood institutions can mitigate developmental disparities arising from the family environment, particularly with regard to socioeconomic conditions, continuity of attendance, and programme organisation. This research gap forms the basis for examining the interaction between family and institutional factors in explaining children's competencies.

Therefore, the aim of this study was to examine the extent to which basic child characteristics, family socioeconomic status, family resources and developmental environment, and characteristics of the early childhood context (type of programme and absence from kindergarten) predict the development of children's competencies in the preschool period, with a particular focus on the relative contribution of individual predictor sets. Accordingly, the research hypotheses were:

H1: Individual, family SES, and institutional factors significantly contribute to explaining the variance in children's competencies.

H2:

Family resources and characteristics of the developmental environment explain a significant additional proportion of variance in children's competencies beyond family socioeconomic status.

METHOD

This quantitative empirical study, focused on analyzing predictors of children's competencies, was conducted based on a large-scale national evaluation study (Licardo et al., 2024a), approved by the Research Ethics Committee of the University of Maribor, Faculty of Arts (approval number: 038-04-139/2023/16/FFUM).

Sample of the study

A non-probability convenience sampling procedure was used. The study included children who were enrolled in different programmes of public kindergartens (n = 886) and their parents from all regions of Slovenia, ensuring regional representativeness of the sample. The average age of the children was 5.86 years (SD = 0.41), indicating a relatively homogeneous age structure typical of the preschool period prior to school entry. The gender distribution was approximately balanced, with 466 girls (52.7%) and 418 boys (47.3%). Most children (94.8%) were of Slovenian nationality, while 5.2% had a different mother tongue or home language. Children attended different ECE programmes: full-day (n = 830; 93.9%), half-day (n = 24; 2.7%), and shorter programmes (n = 30; 3.4%). Descriptive analyses (Licardo, 2026) indicated that children from more vulnerable family environments were more frequently enrolled in shorter programmes. A total of 58.5% of children participated in additional activities outside kindergarten, while 41.5% did not.

Parental data were collected via questionnaires (mostly mothers, 89.5%, and fathers, 10.5%), and the average parental age was 36.64 years (SD = 4.72; Md = 36). Mothers most frequently had a second-cycle university degree (29.8%) or upper secondary vocational/technical education (28.0%), while fathers most frequently had upper secondary vocational/technical education (44.4%), followed by second-cycle university education (13.6%) and professional higher education (13.0%), with lower proportions in other educational categories. Most parents were employed (mothers 94.1%, fathers 96.6%), while 2.9% of families received social assistance (additional funding from the social service). The largest proportion of households reported a medium monthly income between 2001 and 3000 EUR (35.7%). Family structure was predominantly two-parent (81.6%), followed by extended families (12.8%), while single-parent families accounted for 4.8%..

Research Instruments

The Competency Assessment Tool for Preschool Children: KOM5 (Licardo et al., 2024b) was used to assess children's competencies prior to school entry, as well as material and developmental well-being in the family. The KOM5 instrument uses a 7-point Likert-type scale. Although such scales are formally ordinal, they are frequently treated as approximately interval-level in empirical research, particularly with larger samples, allowing the use of parametric statistical procedures (Norman, 2010).

The scale was developed based on the Kindergarten Curriculum (1999) and contemporary conceptualizations of children's competencies in the preschool period (Bellman et al., 2013; Ebbeck et al., 2014), with expert consensus from 13 specialists in early childhood education, ensuring theoretical validity.The first part of the questionnaire included eight items on basic child and family information, including control variables (gender, age, mother tongue) and preschool context.

The second part consisted of a seven-point Likert scale covering eight domains of children's competencies. Each domain included descriptors that enabled precise assessment of competencies through multi-day observation within a given time period. Educator ratings were used because preschool teachers, who were in daily contact with children and their families, observed children across multiple situations and over an extended period of time, which allowed for assessments based on repeated observations rather than single testing occasions. High internal consistency was observed for this scale (Cronbach's α = .986, n = 49), while McDonald's omega, as a more appropriate reliability coefficient for ordinal scales, further confirmed excellent reliability (ω = .987).

The third part consisted of a subscale with adequate reliability (Cronbach's α = .850, n = 6), while McDonald's omega (ω = .890) further confirmed good internal consistency, reflecting educators' assessments of material and developmental well-being in the family. This including basic needs (safety, food, hygiene, and care in the absence of indicators of neglect) as well as access to developmental opportunities (learning, cultural and social activities such as excursions, events, and courses) compared to peers. The parent questionnaire (14 items) was an additional instrument that was used to collect data on demographic characteristics (region, mother tongue), socioeconomic

characteristics (parental education and employment, income, social assistance), and family structure (number of children, type of family).

Data collection and analysis

In public preschool institutions that confirmed participation, children provided oral assent, while parents gave written consent to participate. Parents completed questionnaires on demographic and socioeconomic characteristics of the family. With the support of trained coordinators and under supervision, educators randomly selected three children for whom they completed KOM5 assessments by entering data online (Licardo et al., 2024b). Data collection for this part of the study took place from April 2023 to August 2023, in accordance with ethical standards, including anonymity, group-level analysis, and participants' right to withdraw without consequences.SPSS 29 was used for regression analyses. Missing data were handled using pairwise deletion, whereby all available cases were used for each pair of variables, while cases with missing values for that pair were excluded. Because the proportion of missing data was low, this approach maximized the use of available data for each analysis. Hierarchical regression analysis was conducted with predictors entered in four blocks: child demographic characteristics, ECE programme context, socioeconomic status, and family resources (Table 1). At each step, changes in explained variance (ΔR^2) in the dependent variable—children's competencies (CCOMP)—were recorded to assess the contribution of each block of predictors. Casewise diagnostics identified several cases with standardized residuals greater than ±3; however, their exclusion did not substantially change the results. Multivariate outliers were identified using Mahalanobis distance, and influential cases were examined using Cook's distance. Although several cases exceeded conventional cut-off values, sensitivity analyses indicated that their exclusion did not substantially alter the pattern of results; therefore, all cases were retained in the final analyses. The Shapiro–Wilk test indicated statistically significant deviations from normality for some variables; however, given the large sample size (n = 886), such deviations are expected and were considered acceptable (Pallant, 2020). Inspection of Q–Q plots and histograms of standardized residuals indicated that the residuals were approximately normally distributed. Homoscedasticity was confirmed through inspection of residuals versus predicted values.

Linearity between the continuous predictors and children's competencies was assessed using scatterplots and partial regression plots. Visual inspection indicated approximately linear relationships, with no evidence of substantial departures from linearity. No violations of normality or homoscedasticity were detected. The Durbin–Watson statistic indicated independence of residuals, while tolerance and VIF values were within acceptable ranges, indicating no multicollinearity.

Table 1
Hierarchical regression blocks and associated predictors of CCOMP

No	Block name	Predictor variables
1	Child characteristics (control variables)	G – gender (d), AGE – age (c), HL – home language (d)
2	Preschool context	HP – half-day programme (d), SPr – shorter programme (d), ABS – child absence from preschool (c)
3	Family socioeconomic status (SES)	ME – mother's education (o), FE – father's education (o), UM – unemployed mother (d), UF – unemployed father (d), INC – household income (c), SW – social welfare support (d)
4	Family environment: structure and proximal processes (Family resource)	FAM – family type (SP - single-parent vs. EF - extended family) (d), BN – basic needs and family support (c), EL – equality of learning and developmental opportunities (c), EA – extracurricular activities (d)

Note. c - continuous, d - dichotomous, o - ordinal. CCOMP - children's competencies

FINDINGS

Table 2
Correlations among variables (Pearson's *r*)

	G	HL	AGE	SPr	HP	ABS	INC	ME	FE	SW	UM	UF	EA	BN	EL	SP	EF
CCOMP	-.158**	.313**	.054	-.317**	.010	-.145**	.132**	.218**	.132**	-.184**	-.267**	-.255**	.217**	.415**	.533**	-.005	-.039
G	1	,086*	.046	-.078*	.023	-.032	-.019	.038	.010	-.027	-.033	.005	-.069*	-.015	.036	.033	-.038
HL		1	.017	-.723**	.042	.008	.198**	.239**	.199**	-.168**	-.344**	-.266**	.100**	.349**	.509**	.011	.067*
AGE			1	.006	.039	-.010	.039	-.017	-.037	.053	.032	-.001	-.012	-.036	.003	.000	-.020
SPr				1	-.033	.027	-.220**	-.241**	-.176**	.294**	.350**	.282**	-.122**	-.430**	-.634**	.018	-.033
HP					1	.030	.013	.046	.049	-.029	-.039	-.034	-.001	.036	.035	-.005	.019
ABS						1	.118**	-.064	.001	.088**	.124**	.120**	-.002	-.031	-.115**	-.003	.072*
INC							1	.217**	.186**	-.097**	-.119**	-.117**	.105**	.148**	.187**	-.188**	-.002
ME								1	.425**	-.128**	-.234**	-.177**	.189**	.179**	.200**	-.037	-.074*
FE									1	-.013	-.117**	-.184**	.165**	.096**	.115**	.001	-.076*
SW										1	.400**	.254**	-.079**	-.194**	-.380**	.028	.016
UM											1	.314**	-.072*	-.328**	-.355**	-.029	-.031
UF												1	-.095**	-.104**	-.190**	-.018	-.043
EA													1	.123**	.166**	-.027	-.063
BN														1	.674**	-.069*	.018
EL															1	-.022	-.004
SP																1	-.086*

Notes. *r* - Pearson correlation coefficient; *indicates $p < 0.05$, ** indicates $p < 0.01$.; Variable codes are as in Table 1

Table 2 presents the correlations between the predictors and children's competencies (CCOMP). Although not all variables were continuous or normally distributed, Pearson's correlations were used due to the large sample size (n = 886), which ensures robustness of parametric procedures (Pallant, 2020). No high correlations were observed among the predictors ($r < .80$), indicating that multicollinearity was not present. Most predictors showed significant correlations with the dependent variable, with variations in the strength of associations, while those without significant correlations were retained due to their theoretical relevance and the hierarchical structure of the model.

Table 3
Hierarchical regression analysis

Predic.	Model 1		Model 2		Model 3		Model 4	
	B	*β*	*B*	*β*	*B*	*B*	*B*	*β*
Step1								
G	-0.289**	-0.189**	-0.302**	-0.198**	-0.296**	-0.194**	-0.263**	-0.172**
AGE	0.026	0.015	0.027	0.059	0.027	0.060	0.020	0.044
HL	1.054**	0.328**	0.603**	0.188**	0.456**	0.142**	0.333*	0.104*
Step 2								
SP	-	-	-0.827**	-0.196**	-0.524*	-0.125*	0.653**	0.155**
HP	-	-	0.021	0.004	-0.028	-0.006	-0.049	-0.010
ABS	-	-	-0.015**	-0.152**	-0.012**	-0.123**	-0.008**	-0.077**
Step 3								
INC	-	-	-	-	1.599E-5	0.037	4.774E-6	0.011
SW	-	-	-	-	-0.178	-0.039	0.251	0.055
UM	-	-	-	-	-0.302*	-0.089*	-0.146	-0.043
UF	-	-	-	-	-0.409**	-0.105**	-0.556**	-0.142**
ME	-	-	-	-	0.033**	0.100**	0.025*	0.076*
FE	-	-	-	-	0.002	0.007	-0.001	-0.002
Step 4								
BN	-	-	-	-	-	-	0.122*	0.073*
EL	-	-	-	-	-	-	0.468**	0.472**
EA	-	-	-	-	-	-	0.147**	0.095**
SP	-	-	-	-	-	-	0.040	0.011
EF	-	-	-	-	-	-	-0.082	-0.036
ΔR^2		0.132**	-	0.040**	-	0.044**	-	0.164**
F Ch		42.455**	-	13.457**	-	7.677**	-	43.568**
df		3.834	-	3.831	-	6.825	-	5.820
Tot R^2		0.132	-	0.173	-	0.216	-	0.381
Adj R^2		0.129	-	0.167	-	0.205	-	0.368
Error		0.71426	-	0.69877	-	0.68252	-	0.60852

Notes. *indicate $p < 0.05$, ** indicate $p < 0.01$.; Variable codes are as in Table 1. ΔR^2 - change in explained variance (R^2 change); *F* Cha - change in *F*-statistic between models; *df* - degrees of freedom; Tot R^2 - total proportion of variance explained by the model; Adj R^2 - adjusted coefficient of determination; Error. - standard error of the regression estimate

Prior to hierarchical regression, assumptions were checked. VIF values (1.002–2.888) and tolerance (0.346–0.998) indicated no multicollinearity. Residuals and predicted values showed no extreme deviations and an approximately normal distribution, while the Durbin–Watson statistic (1.888) confirmed independence of residuals. Hierarchical multiple regression was conducted in four steps (child demographics, preschool context,

SES, family resources). Adjusted R^2 increased from .133 to .368, while the standard error decreased from .711 to .607, indicating improved model fit and precision (Table 3).

Step 1 (Child demographic variables): The first model included child gender, age, and mother tongue. Gender ($\beta = -.189$, $p < .001$) and mother tongue ($\beta = .328$, $p < .001$) were significant predictors, indicating higher competence scores for girls and children whose mother tongue was Slovene, while age was not a significant predictor. The model explained 13.6% of the variance in children's competencies ($R^2 = .136$, $F(3, 834) = 43.63$, $p < .001$).

Step 2 (Preschool context variables)**:** Adding ACE programme type (shorter programme, half-day programme) and absenteeism increased the explained variance by 4.3% ($\Delta R^2 = .043$, $p < .001$). Shorter programme attendance ($\beta = -.196$, $p < .001$) and absenteeism ($\beta = -.152$, $p < .001$) were negatively associated with competencies, while the half-day programme was not a significant predictor.

Step 3 (Socio-economic status (SES) variables): Including SES indicators (income, social assistance, parental unemployment, and education) further increased the explained variance by 4.3% ($\Delta R^2 = .043$, $p < .001$). Significant predictors were father unemployment ($\beta = -.105$, $p = .002$), mother unemployment ($\beta = -.089$, $p = .015$), and mother's education ($\beta = .100$, $p = .005$), whereas household income, social assistance, and father's education were not significant predictors.

Step 4 (Family resources): Adding family resource variables (*family developmental conditions*, participation in extracurricular activities, and indicators of family structure) in the fourth step resulted in the largest increase in explained variance ($\Delta R^2 = .159$, *F*-change = 42.01, $p < .001$), with the total explained variance reaching 38.0% ($R^2 = .380$, adjusted $R^2 = .368$). In this final step, the beta coefficients represent the unique contribution of each predictor while controlling for all other predictors in the model, providing the most theoretically informative estimates. In the final model, the statistically significant predictors were: *equality of learning and developmental opportunities* ($\beta = .472$, $t = 10.109$, $p < .001$), attendance of a shorter programme ($\beta = .155$, $p = .001$), absenteeism from preschool ($\beta = -.077$, $p = .008$), participation in extracurricular activities ($\beta = .095$, $p = .001$), fathers' unemployment ($\beta = -.142$, $p < .001$), *basic needs and family support* ($\beta = .073$, $p = .048$), mothers' educational attainment ($\beta = .076$, $p = .018$), gender ($\beta = -.172$, $p < .001$), and Slovene as the child's mother tongue ($\beta = .104$, $p = .012$). Other variables: child age, household income, receipt of social assistance, mothers' unemployment, fathers' educational attainment, and family structure indicators, were not statistically significant ($p > .05$).

DISCUSSION

Based on the results presented in Table 3 and their interpretation, both hypotheses were confirmed: individual (gender, language), family (parents' employment, mothers' educational attainment, material and developmental conditions, extracurricular activities), and institutional factors (attendance of a shorter programme, absenteeism from preschool) significantly contribute to explaining the variance in children's

competencies, while family resources and characteristics of the developmental environment provide an additional contribution beyond the effect of socioeconomic status.

The analysis showed that demographic characteristics, gender and mother tongue, significantly predicted children's competencies, while age was not significant, which can be explained by the very narrow age range (in months) of children in the sample. Research has confirmed different developmental trajectories for boys and girls, with girls showing more advanced socio-emotional and language competencies, and boys demonstrating slower language development but advantages in gross motor skills (Vatou et al., 2026a; Ma et al., 2025; Kendić et al., 2023). Given that insufficient language proficiency represents a significant barrier to competency development (Licardo & Sraka Petek, 2025), this finding underscores the need for additional professional development of preschool teachers (Licardo, 2026), as well as for an individualized approach that takes into account both children's language background and gender (Šindić, 2021).

The most important finding concerned attendance in the shorter ECE programme, which in Models 2 and 3 showed a negative association with children's competencies. This suggests that shorter programmes were less effective in enhancing general competencies prior to school entry compared to full-day and half-day programmes. This finding is consistent with research showing that participation in longer ECE programmes contributes to higher levels of competencies compared to shorter ones, particularly among children at risk (Moore et al., 2014; Atteberry et al., 2019; Pelletier & Corter, 2019). Although research on shorter programmes has been limited, the findings can be linked to the importance of time for learning and play in longer programmes (Denker & Atteberry, 2024). In the Slovenian context, programmes are regulated by the Kindergarten Act (1996), which provides for full-day, half-day, and shorter programmes. While full-day and half-day programmes are more comprehensive and longer in duration, shorter programmes (240 hours per year), often intended for children from demographically and geographically disadvantaged areas, are time-limited (Licardo & Sraka Petek, 2025; Licardo, 2026).

The results of this and other studies suggest that such an organisational structure may be associated with fewer developmental opportunities compared to longer programmes. It may not fully support optimal conditions for competency development, which should be considered in the context of observed differences in children's competencies.

Absenteeism from preschool consistently negatively predicted the level of children's competencies, confirming the importance of continuity and attendance in early childhood education. Contemporary research has also shown that absences have been associated with lower cognitive, language, and socio-emotional competencies in preschool children (Ansari & Purtell, 2018; Narea et al., 2025; Gottfried & Ansari, 2021; Davies et al., 2025).

Parental SES, particularly parents' unemployment and mothers' educational attainment, significantly contributed to the prediction of competencies. Children of employed parents and mothers with higher education showed better developmental outcomes,

which is consistent with findings that higher SES enables access to resources and a more stimulating environment (Ergül et al., 2017; Rakesh et al., 2025), while Fuller et al. (2025) have indicated that unemployment and financial insecurity are associated with poorer socio-emotional and academic outcomes.

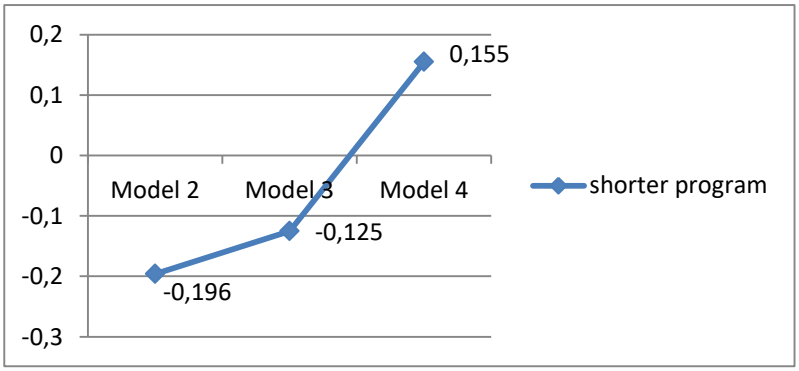
The addition of family resources (equality of learning and developmental opportunities, basic needs and family support, and extracurricular activities) in Model 4 resulted in the largest increase in explained variance, with equality of learning and developmental opportunities (representing proximal family processes), emerging as the strongest predictor of children's competencies ($\beta = 0.472$, $p < .001$). The largest effect size was observed for the family-resource block ($\Delta R^2 = .164$), indicating that proximal family processes explained substantially more variance in children's competencies than either preschool-context variables ($\Delta R^2 = .040$) or SES indicators ($\Delta R^2 = .044$).

This finding clearly highlights the family microsystem as a central context of early development, consistent with Bronfenbrenner's ecological framework (Bronfenbrenner & Morris, 2007). Specifically, family support and quality activities in the family that foster learning and development have been shown to significantly contribute to children's cognitive, academic, and socio-emotional outcomes (Bonifacci et al., 2024; Vatou et al., 2026b; Šindić, 2010). The results of this study (Table 2) indicate that children enrolled in shorter programmes, which are less conducive to the development of children's competencies compared to other ECE programmes, not only more often come from families with lower socioeconomic status, as reported by Licardo and Sraka Petek (2025) and Licardo (2026), but also from families that do not provide equality of learning and developmental opportunities. These findings suggest that, although such programmes are designed to reduce inequalities (White Book on Education in the Republic of Slovenia, 2021), they are not sufficient to fully compensate for pre-existing inequalities, particularly when compared to children enrolled in full-day or half-day programmes, who are typically already in a more advantaged position as children who are enrolled in shorter programmes.

However, the analysis of the effects of the shorter programme attendance reveals a distinct pattern in Model 2. The effect was negative and significant ($\beta = -0.196$, $p < .001$). After the inclusion of socioeconomic variables in Model 3, the negative effect slightly decreased ($\beta = -0.125$, $p = .008$). In Model 4, when family resources (physical safety, healthy nutrition, hygiene, adequate learning conditions, and quality activities in the family that support learning and development) were included , the effect became positive and significant ($\beta = 0.155$, $p = .001$) (Figure 1). The reversal of the coefficient for shorter-programme attendance after the inclusion of family-resource variables may indicate a suppression effect. Children in shorter programmes were more likely to come from disadvantaged family environments characterized by fewer learning and developmental opportunities. Once these family-context factors were statistically controlled, the unique association of programme participation became positive. Because the present study is cross-sectional, mediation cannot be formally tested and causal interpretations should be avoided. Nevertheless, the pattern suggests that programme effects are closely intertwined with family-resource characteristics.

These findings suggest that the adverse effects of lower socioeconomic status may be partially buffered through the synergy of two key developmental channels; high-quality early childhood education (Heckman, 2012) and a family environment characterized by enriched interactions and activities that foster learning and development (Bonifacci et al., 2024).

Figure 1
Pattern of risk accumulation across educational and family contexts



High-quality interactions in the early environment and enriched learning through shared activities and cultural experiences operate through reciprocal proximal processes within Bronfenbrenner's bioecological model of development (Bronfenbrenner & Morris, 2007), while Merçon-Vargas et al. (2020) emphasize that these processes can have both positive and negative effects depending on the context, particularly in disadvantaged environments. Accordingly, active parental involvement in home-based learning and educational support strengthens family protective resources and improves the outcomes of preschool programmes, especially in the domains of socio-emotional competencies, self-regulation, and school readiness (Vatou et al., 2026; Jeong et al., 2021). The findings consistently indicate that the strongest developmental effects, particularly among at-risk children, are achieved through the synergy of high-quality early childhood education and parent-focused interventions, which simultaneously enhance children's developmental potential and mitigate the effects of adverse family conditions (Vatou et al., 2026; Jeong et al., 2021).Despite the significant findings obtained, the model explained 38% of the variance, indicating that other factors contributing to the development of children's competencies were not captured in this study and should be examined in future research. A limitation of the study is also that the data are based on teachers' individual assessments of children's competencies as well as family resources, including basic needs and family support, and equality of learning and developmental opportunities. In addition, a cross-sectional correlational design was employed, which precludes causal inferences and limits conclusions about developmental pathways.

CONCLUSIONS AND IMPLICATIONS

The study findings indicate that equality of learning and developmental opportunities, as a proximal mechanism, is a stronger predictor of preschool competencies than SES alone, while the association between preschool programme type and competencies depends on the broader family context. Family proximal processes, through developmentally enriching interactions and activities, are the strongest predictor early childhood competencies, with a contribution that clearly exceeds that of other predictors in the model.

By situating this factor within the family microsystem, the results provide strong empirical evidence of the crucial role of an enriched family environment, while also emphasising that children's developmental competencies cannot be understood in isolation from the interaction between family and institutional contexts. In line with this, contemporary theoretical and empirical approaches suggest that children's competencies are shaped through the complementary functioning of these contexts: high-quality early childhood education has long-term effects on the development of competencies (Heckman, 2012), whereas enriched interactions and everyday activities within the family environment represent key mechanisms of early development and learning (Bonifacci et al., 2024). The results of this study indicate that the relationship between shorter programmes and children's competencies is not uniform but varies as a function of available family resources. Under more adverse conditions, shorter programmes show a limited compensatory role and may contribute to widening disparities, whereas in more supportive family environments they are associated with more favourable levels of competence.

These findings underscore the need to reconsider the availability, duration, and quality of preschool programmes in the Slovenian context, as well as the importance of strengthening parental involvement through targeted educational and supportive programmes, particularly for at-risk families, thereby enhancing continuity of learning between the family and preschool and optimising children's developmental competencies. Overall, the results suggest that reducing developmental inequalities in early childhood cannot be achieved solely through institutional interventions, but requires an integrated approach that simultaneously strengthens the quality of early childhood education and the family environment as key contexts of children's learning and development.

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