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Leadership Competences of Early Childhood Educators: The Mediating Role of Their Motivation

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ABSTRACT. Strong leadership competences among early childhood educators are essential to securing a formative learning environment in kindergarten. Such competences are developed by motivated teachers to continuously improve their didactic performance. The study aimed to investigate the relationship between leadership competences, specifically focusing on how these competences relate to preschool teachers' motivation along their careers. 188 Romanian early childhood educators filled in two standardized instruments: the Teacher Leadership Scale (TLS) and the Teacher Motivation Questionnaire (TMQ). Data analysis using Spearman correlations, Kruskal-Wallis and Mann-Whitney U tests revealed a significant positive correlation between intrinsic motivation and leadership competences. We found significant differences by age groups, with younger teachers displaying lower leadership competence scores. Qualitative responses complemented the quantitative findings, highlighting professional development, communication improvement, and leadership support as key areas for enhancing leadership competences. The results suggest the need for differentiated training programs, tailored to teachers' age and experience levels. Fostering intrinsic motivation, which emerged as a key driver for professional engagement and educational leadership development, should receive particular emphasis. The research provides insights for improving teacher development strategies in early childhood education and emphasizes the role of motivation to be fostered for promoting leadership growth.

Key-words: leadership competences; pedagogical leadership; early childhood education; teacher motivation; preschool teachers

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ZUSAMMENFASSUNG. Starke Führungskompetenzen bei Erzieherinnen und Erziehern sind unerlässlich, um ein förderliches Lernumfeld im Kindergarten zu gewährleisten. Solche Kompetenzen werden von motivierten Lehrkräften entwickelt, um ihre didaktische Leistung kontinuierlich zu verbessern. Ziel der Studie war es, den Zusammenhang zwischen Führungskompetenzen zu untersuchen, wobei der Schwerpunkt auf der Frage lag, wie sich diese Kompetenzen auf die Motivation von Erzieherinnen und Erziehern im Laufe ihrer Karriere auswirken. 188 rumänische Erzieherinnen und Erzieher füllten zwei standardisierte Fragebögen aus: die Teacher Leadership Scale (TLS) und den Teacher Motivation Questionnaire (TMQ). Die Datenanalyse unter Verwendung von Spearman-Korrelationen, Kruskal-Wallis- und Mann-Whitney-U-Tests ergab eine signifikante positive Korrelation zwischen intrinsischer Motivation und Führungskompetenzen. Wir stellten signifikante Unterschiede zwischen den Altersgruppen fest, wobei jüngere Lehrkräfte niedrigere Werte bei den Führungskompetenzen aufwiesen. Qualitative Antworten ergänzten die quantitativen Ergebnisse und hoben die berufliche Weiterentwicklung, die Verbesserung der Kommunikation und die Unterstützung der Führungskräfte als Schlüsselbereiche für die Verbesserung der Führungskompetenzen hervor. Die Ergebnisse deuten auf die Notwendigkeit differenzierter Schulungsprogramme hin, die auf das Alter und den Erfahrungsstand der Lehrer zugeschnitten sind. Die Förderung der intrinsischen Motivation, die sich als wichtiger Motor für das berufliche Engagement und die Entwicklung von Führungskompetenzen im Bildungsbereich herausstellte, sollte besonders betont warden. Die Forschung liefert Erkenntnisse zur Verbesserung von Strategien zur Lehrerfortbildung in der frühkindlichen Bildung und betont die Bedeutung der Motivation, die zur Förderung der Führungskompetenz gefördert werden muss.

Schlüsselwörter: Führungskompetenzen; pädagogische Führung; frühkindliche Bildung; Motivation von Lehrkräften; Vorschullehrerinnen und -lehrer

1. INTRODUCTION

In early childhood education (ECE), leadership competences are essential for creating an organised and effective learning environment. Leadership competence includes planning, organisational, communication, and evaluation skills, all of which contribute to the success of the educational process (Fonsén & Ukkonen-Mikkola, 2019). Early childhood educators (ECEs) with strong leadership competences and pedagogical leadership are able to respond effectively to children's needs and work with parents and colleagues to ensure an educational climate favourable to the harmonious development of preschool children (Bodin, 2025; Boyd, 2001). Their pedagogical leadership allows them to handle the

diversity of roles and pedagogical actions they are responsible for as preschool teachers, combining their theoretical knowledge, wisdom (Bodin, 2025), and motivation for improved teaching practices.

While the leadership competences refer to organizational coordination, decision-making, and management responsibilities, pedagogical leadership is more closely related to educational practice. It involves guiding teaching processes, making decisions in activities with children, and reflecting both individually and collectively on professional practices (Bodin, 2025; Bøe et al., 2022). Nguyen et al. (2020) define teacher leadership as teachers' capacity to lead both inside and outside the classroom, contributing to a community of teachers and leaders, influencing others toward improved instructional practice, and taking responsibility for outcomes. The definition emphasizes the integration of teaching and leadership. While pedagogical aspects are embedded within teacher leadership, in fact, regarding ECEs, the terms pedagogical/ instructional leadership and teacher leadership largely overlap, and we will use them as quasi-similar, as ECE educators are mainly concerned with managing the group of children on their daily basis.

Despite studies emphasing the importance of motivation in teacher education, the relationship between motivation and leadership competences remains underexplored. In spite of the leadership competence covering the motivating of children, little is known about teachers' motivation and its relation with teacher leadership competence (Bøe et al., 2022). It is believed that strong intrinsic motivation can stimulate the continuous development of leadership competences, as findings on investigations done on teachers as higher level of schooling emphasized such correlations (Setyawati, 2023; Thoonen et al., 2011). Furthermore, appropriate extrinsic motivation can support teachers' ability to overcome challenges in the school environment and maintain high levels of performance in managing their group of children and educational relationships. There is a dearth of research on how ECE teachers' motivation evolves over their careers and influences their leadership competence. While the connections between teacher leadership and motivation, covering as well the role of school leadership and organizational environment in influencing them, are more intensively researched for the upper levels of schooling, their relation for ECEs in kindergarten is less explored (Muijs et al., 2004; Nguyen et al., 2020). The educators in ECE often enjoy a lower professional status which might lead to demotivation over time, in spite of their initial commitment to fostering children's development.

The research aims to further investigate these connections and how they evolve over time, providing a better understanding of the relationship between leadership competences and motivation among ECEs, with the aim of

providing a useful theoretical and practical basis for optimising training programs and supporting educational leadership in kindergartens, as we try to capture also the educators proposals on how such leadership competences can be improved.

2. THEORETICAL BACKGROUND

2.1 Leadership competences in early childhood education

A teacher with strong leadership skills can create an educational climate favourable to children's learning and development (Wenner & Campbell, 2016). Effective classroom management directly influences children's behaviour and performance, and a well-organised educational setting contributes to the development of a trusting relationship between teachers and children (Fonsén & Ukkonen-Mikkola, 2019).

The leadership competences of ECEs as modelled by Boyd (2001), include dimensions such as collegial influence, involvement in decision-making, and commitment to professional development. Teachers' instructional leadership can stimulate pedagogical innovation and contribute to improving children's academic achievement through increased collaboration between teachers and the use of child-friendly instructional strategies (Bodin, 2025).

Recent studies emphasize additional influences on the development of teacher leadership competences. Bodin (2025) highlights the role of individual and collective reflection in strengthening pedagogical leadership, showing how teachers reinterpret their practices and roles over time. Similarly, Bøe et al. (2022), through a shadowing study of early childhood teachers, demonstrate that pedagogical leadership is exercised in everyday classroom situations, through negotiation, practical decisions, and modelling of relationships with children. According to Nguyen et al. (2020), five key factors shape the nature, quality, and effectiveness of teacher leadership: school culture, school structure, principal leadership, peer relationships, and person-specific factors. A collaborative and supportive school culture fosters authentic teacher leadership, whereas cultures of blame and coercion act as barriers. Flexible and transparent school structures enable innovation, while rigid, top-down systems restrict teacher leadership. Principals play a crucial role by providing time, space, and opportunities for teacher involvement, as well as by supporting and recognizing teacher leaders. Strong peer relationships based on trust and mutual support enhance teachers' influence, whereas weak relationships diminish their impact. Finally, personal factors such as knowledge, motivation, and, in some cases, teaching experience can positively affect teachers' leadership capacity (Nguyen

et al., 2020). At the same time, Thoonen et al. (2011) underline that teachers' motivation and their involvement in leadership are shaped by the leadership style of principals and by the organizational conditions of the school, which create or limit opportunities for professional and pedagogical growth. While teacher leadership can be influenced by the kindergarten organization, and its supportive, friendly and stimulating ecosystem, the pedagogical leadership of educators in ECE is largely influenced by the personal factors, as Nguyen et al. (2020) and Setyawati (2023) suggest.

Conceptions of teacher leadership are grounded in pedagogical leadership. From an pedagogical perspective, teacher leadership can be categorised into three broad models: *(1) the teacher leadership model*, which formalises instructional leadership roles and responsibilities through recognition and compensation, such as titles and release time; *(2) the multiple leadership roles model*, which informally distributes instructional leadership roles and responsibilities among multiple teachers, although the title and formal position of each teacher leader remain classroom teacher and *(3) the 'every teacher a leader' model*, which informally involves all teachers in collaborative efforts for instructional improvement and school reform without assigning specific roles and responsibilities (Muijs & Harris, 2003).

Researchers have not agreed on a consensus of the definition and use of the term "*teacher leader*", partly due to the diverse roles educators can play in kindergarten management (Wenner & Campbell, 2016). Leadership competence is correlated with developing productive relationships among teachers, children, and parents, which leads to better communication and improved educational outcomes (Fonsén & Ukkonen-Mikkola, 2019). Whether we are talking about activities like planning, effective space organisation, or effective communication with parents as applied aspects of classroom management (Bodin, 2025), all these activities are refined through experience, reflection, and continuous improvement. To what extent educators are open and motivated to such improvement is to be explored.

Beyond mere administrative management, pedagogical leadership requires teachers to engage in both individual and collective reflection to guide their educational actions. This reflective practice, combined with what Bodin (2025) describes as phronesis or practical wisdom, enables teachers to make contextually informed decisions rather than merely applying theoretical frameworks. Furthermore, leadership in early childhood settings is not always formally recognized; much of it occurs "invisibly" through daily interactions, decision-making, and the ways teachers negotiate and model relationships with children and colleagues (Bøe et al., 2022). This perspective highlights that pedagogical leadership is enacted in both formal and informal contexts, embedded in the everyday dynamics of teaching practice.

Such dynamics are influenced by educational organizational conditions and leadership practices of head teachers as they impact the motivation of teachers for learning, improved teaching practices, and contribution to improved organizational conditions (Thoonen et al., 2011; Chen, Fan, 2025) and learning environment.

Summing up, both kindergarten's organizational ecosystem and personal treats of educators shape their (pedagogical/) leadership. Let's further explore how motivation of educators, as main personal treat gearing theirs commitment, acts in ECE.

2.2. Motivation in early childhood education

The motivation of ECEs has a direct impact on the quality of teaching and continuing professional development. Motivated teachers are more engaged, adopt innovative practices, and actively participate in educational leadership activities (Eyal & Roth, 2011; Chen, Fan, 2025). The ability of the kindergarten leadership to foster teacher autonomous or controlled motivation for improved teaching practices and involvement in organization is strongly influenced by the transformational and integrative leadership style of the principal, by stimulating working conditions, and by support (Eyal & Roth, 2011).

Teachers' motivation plays a central role in shaping educational practices and mediates the effects of leadership and organizational conditions. While individual factors such as intrinsic interest and professional goals are important, research indicates that teachers' motivation is also significantly influenced by transformational leadership and supportive organizational environments (Thoonen et al., 2011).

As explanatory support, the Self-Determination Theory (Deci & Ryan, 2000) states that human motivation is underpinned by the satisfaction of three fundamental psychological needs: autonomy, competence, and relatedness. In an educational context, when teachers feel autonomous in decision-making, competent in their professional work, and well-integrated into the school community, their intrinsic motivation increases, leading to more profound engagement in teaching and professional development.

Similarly, the two-factor theory of Hertzberg (Alshmemri et al., 2017) differentiates between motivational factors (intrinsic to the job) and hygiene (organisational and contextual) factors (extrinsic). Motivational factors, such as a sense of achievement, professional recognition, responsibility, and opportunities for advancement, contribute to job satisfaction. Hygiene factors, on the other hand, such as institutional policy, relationships with colleagues, and working conditions, do not generate satisfaction, but their absence leads to demotivation and dissatisfaction (Alshmemri et al., 2017). Although initially applied in

organisational settings, the bifactor theory is highly applicable in educational contexts. For ECEs, job satisfaction can be increased by recognising merit, giving positive feedback, and engaging in meaningful activities, while aspects such as working conditions and managerial support need to be kept at a satisfactory level to prevent demotivation (Muijs et al., 2004).

Çetinkaya & Arastaman (2023) and Wenner & Campbell (2016) suggest that teachers' transition to leadership roles is often underpinned by a strong motivation for involvement, a desire to positively influence the school community, and a need for professional development. Therefore, ECEs' motivation, whether intrinsic or extrinsic, is a fundamental component that influences engagement, personal initiative, the quality of professional relationships, and the development of leadership competences. Based on these premises, we will investigate how professional motivation affects the development of leadership competences in ECEs, aiming to answer the following *research questions*: Is there a correlation between leadership competences and teacher motivation (intrinsic and extrinsic) in early childhood education? If yes, what demographic and professional variables (such as age, educational level, teaching environment, work experience, and kindergarten program) influence such correlation and how?

Also, as we try to deepen the understanding of such correlation, we capture as well the suggestions early childhood educators offer for improving leadership competences, their motivational drives.

3. METHODOLOGY

The study followed a quantitative cross-sectional design with complementary qualitative elements to analyse the relationship between teachers' motivation and their leadership competences in ECE. A correlational and comparative design was used to explore both the relationships between variables and possible differences due to demographic factors (age, experience, education, etc.). Furthermore, through open-ended questions, the perspectives of ECEs on how their leadership competences can be improved were collected.

Participants

188 participants, out of which 170 kindergarten teachers in different regions of Romania, reunited by the convenience method, and 18 students from pre-service BA program in Pedagogy of Primary and Preschool Education of our university, some of them already working in kindergartens, participated in the research. Of this sample, 184 (97.9%) were female, 3 (1.6%) were male, and 1 (0.5%) did not specify the gender. The age distribution ranged from 18

to over 60 years old, with the majority falling in the 18-30 age group (41.5%), followed by the 31-45 age group (36.7%). In terms of education, almost half of the respondents had a bachelor's degree (48.9%), one-third had a master's degree (34.6%), and (13.8%) had a pedagogical high school. The majority live in urban areas (62.8%), and (29.8%) in rural areas. Most of the respondents come from public institutions (83.5%). As regards seniority in the field, a significant percentage have between 1 and 5 years of experience (42.6%). (60.1%) of the respondents work in extended day nurseries. In addition to these data, Table 1 summarizes the sample distribution and characteristics of the respondents.

Table 1. *Sample distribution based on collected socio-demographic data*

Socio-demographic categorical data		*Frequency (N)*	*Percentage (%)*
Age	18-30	78	41,5
	31-45	69	36,7
	46-60	36	19,1
	60+	2	1,1
	Do not mention	3	1,6
Gender	Male	3	1,6
	Female	184	97,9
	Do not mention	1	0,5
Studies	Pedagogical high school	26	13,8
	University studies (bachelor)	92	48,9
	University studies (Master)	65	34,6
	University studies (PhD)	1	0,5
	Another	4	2,1
Teaching environment	Urban	118	62,8
	Rural	56	29,8
	Student	14	7,4
Type of institution	Public	157	83,5
	Private	13	6,9
	Student	18	9,6
Work experience	1-5	80	42,6
	6-10	32	17
	11-20	30	16
	20+	28	14,9
	Student	18	9,6
Kindergarten programme	Normal	57	30,3
	Extended	113	60,1
	Student	18	9,6

Instruments

Data were collected using two instruments: *the Teacher Leadership Scale (TLS)*, developed by Wang & Xia (2020), and the *Teachers' Motivation Questionnaire (TMQ)*, developed by Ramzan & Khurram (2023).

The TLS was designed to measure ECE teacher leadership in China. The instrument consists of 19 items and measures leadership competences on four dimensions: *Leading teaching and professional development* (8 items); *Characteristics of teacher leaders* (4 items); *Participation in school-wide decision-making* (4 items); *Diversity and continuous improvement* (3 items). In the original version, responses are measured on a Likert scale from *1=strongly disagree* to *6=strongly agree*. In this study, the scale was changed to a 1 to 5 format, keeping the meanings of the lowest and highest points the same, to match another tool used in the research (TMQ) and to include a neutral middle option. To verify that this adaptation did not affect the psychometric quality of the instrument, internal consistency coefficients (Cronbach's α) were recalculated for each of the four dimensions. The values obtained confirmed an adequate to very satisfactory internal consistency. The Cronbach's Alpha coefficient of the instrument is 0.895, indicating a very satisfactory internal consistency of the scale. Satisfactory values were obtained for most of the dimensions: for *Leading teaching and professional development*, the alpha-Cronbach was 0.828; for *Characteristics of teacher leaders*, the coefficient was 0.874; and for *Participation in school-wide decision-making*, it was 0.828, indicating good reliability of these scales. *The diversity and continuous improvement* dimension had a lower Alpha-Cronbach score of 0.513, which means it is less reliable and may need more items or changes in future studies. Sample items for each dimension of the instrument include: (1) "*I apply theoretical knowledge in practice*"; (2) "*I would consider an experienced colleague to be a teacher leader*"; (3) "*I am involved in discussions about personnel decisions*"; (4) "*I respect the views of every colleague when facing differing opinions*".

The second instrument, the TMQ, was used to assess teacher motivation and was constructed and validated based on Herzberg's Bifactorial Theory. The instrument includes 8 items for *intrinsic motivation* (items 20-27) and 10 items for *extrinsic motivation* (items 28-37). The Cronbach's Alpha coefficient for the 18 items is 0.923, which reflects excellent internal consistency. The Alpha-Cronbach coefficient for each dimension indicates a high level of reliability: 0.846 for *intrinsic motivation* and 0.898 for *extrinsic motivation*. The instrument uses a Likert scale from 1 to 5, where *1 indicates strong disagreement* and *5 indicates strong agreement*. Sample items for each dimension of the instrument: (1) "*Teaching gives me purposeful life.*"; (2) "*I am pleased with the working environment in my kindergarten.*"

Given that the TLS and TMQ instruments were originally developed and validated in English, it was necessary to adapt them to Romanian in the specific context of this research. Both instruments were back-translated and culturally adapted. The process included translation into Romanian by a specialist, followed by back-translation into English by a fluent speaker. All versions were compared to resolve discrepancies and ensure clarity, cultural relevance, and conceptual equivalence with the original.

Procedure

In March 2025, the questionnaire consisting of the two instruments was administered online, through the QuestionPro platform, to ensure quick completion and to reach as many participants as possible. The completion time is approximately 10-15 minutes. A total of 188 valid and fully completed responses were collected via social media (groups for preschool/beginner teachers) and faculty courses. Participants were informed that responses were anonymous, data confidential, and used solely for educational and scientific purposes within this research. The questionnaire included clear instructions, emphasizing the voluntary nature of participation, and noted that participants could withdraw from the research at any time. An institutional email address was provided for any questions or clarifications. Approval from the university research council for conducting the study was obtained (no. 51201/2025).

4. RESULTS

Analysis of the raw results was performed using the SPSS (Statistical Package for the Social Sciences) program, a tool developed by IBM (International Business Machines Corporation) that is commonly used in research. Although the sample size (N = 188) is sufficient, tests of normality indicated significant deviations from the normal distribution, which is why non-parametric statistical methods were used. The Spearman correlation coefficient was used to look at how the variables are related, and the Mann-Whitney U (for two groups) and Kruskal-Wallis (for three or more groups) tests were used to compare differences between groups, the results being presented in detail in *Tables 2-12*.

To test the relationship between leadership competences and intrinsic motivation of ECEs we used Spearman's correlation coefficient. The results indicate a positive and statistically significant correlation between the two variables, $r_s(188) = 0.706$, $p < .001$ (Table 2). Thus, a strong positive correlation between leadership competences and intrinsic motivation was identified. The intensity of the correlation is strong, suggesting that those teachers who are intrinsically motivated also tend to exhibit more developed leadership competences.

Table 2. *Spearman correlation analysis between leadership competences and intrinsic motivation of ECEs*

Variabile	*M*	*AS*	*r*	*P*
Intrinsic motivation	34.5798	4.07667	r = 0.706	p < 0.001
Leadership competences	75.6383	8.61146	r = 0.706	p < 0.001

Note: ** p < .05, ** p < .01, *** p < .001*

In order to test the relationship between leadership competences and extrinsic motivation of ECEs, we used the Spearman correlation coefficient. The results indicate a positive and statistically significant correlation between the two variables, r_s(188) = 0.626, p < .01 (Table 3). Thus, statistical data supports the identified moderately positive correlation between leadership competences and extrinsic motivation. The moderate intensity of the correlation indicates that, in general, a higher level of extrinsic motivation is associated with a higher level of leadership competences.

Table 3. *Spearman correlation analysis between leadership competences and extrinsic motivation of ECEs*

Variable	*M*	*AS*	*r*	*P*
Extrinsic motivation	40.4149	6.48472	r = 0.626	p < 0.01
Leadership competences	75.6383	8.61146	r = 0.626	p < 0.01

Note: ** p < .05, ** p < .01, *** p < .001*

The Kruskal-Wallis test was used to test whether there were significant differences in the scores of leadership competences according to the age group of the respondents. The results indicated a statistically significant difference between groups, $\chi^2(2) = 7.602$, p = .022 (Table 4). Thus, the research question is supported by the statistical data: are there significant differences in leadership competences according to the age of teachers.

Table 4. *Results of the Kruskal-Wallis test on differences in leadership competences by age group of respondents*

Age group	*N*	*M*	χ^2 *(H)*	*df*	*p*
18-30	78	89.93			
31-45	69	83.40			
46-60	36	112.97			
			7.602	2	.022

Note: ** p < .05, ** p < .01, *** p < .001*

To find out which groups were different, we did additional Mann-Whitney U tests between pairs of groups, adjusting for multiple comparisons; so, we compared ages 18-30 with 31-45, 18-30 with 46-60, and 31-45 with 46-60.

To test the differences in leadership competences between teachers aged 18-30 and 31-45, the Mann-Whitney U test was applied. The results indicated that there was no statistically significant difference between these two groups, U = 2494.5, Z = -0.764, p = 0.445 (Table 5). Thus, leadership competences are comparable between these age groups. This finding suggests that the level of leadership competences is relatively comparable between early career and mid-career teachers. It is possible that, during this period, the accumulated experience may not be sufficiently divergent to generate significant differences, or that both categories benefit from similar contexts of managerial training and involvement. Therefore, age per se does not seem to be a determining factor for the differentiation in leadership competences in the 18-45 age range.

Table 5. *Comparison between 18-30 and 31-45 age groups*

Age groups	*N*	*M*	*U*	*Z*	*p*
18-30	78	76.52			
31-45	69	71.15			
			2494.5	-0.764	0.445

Note: *U = Mann-Whitney U, Z = Z score for Mann-Whitney test, p = significance value (p < 0.05 indicates statistically significant difference).*

The differences in leadership competence between teachers aged 18-30 and 46-60 were analysed with the Mann-Whitney U test. The results indicated a statistically significant difference, U = 1046, Z = -2.186, p = 0.029 (Table 6), showing that the 46-60 age group showed significantly higher scores in leadership competences compared to the 18-30 age group, suggesting that age and, therefore, professional experience and exposure to managerial roles play an important role in the development of these competences. Younger teachers (18-30 years) in the early years of their careers may not yet have had the opportunity to train or practise managerial skills at the same level, as these skills usually develop over time through practical involvement and participation in institutional decision-making processes. This finding is consistent with the idea that experience gained over an extended professional career contributes to the development and strengthening of these competences.

This significant difference between the youngest and oldest groups in the sample shows that there are no major differences between adjacent groups (e.g., 18-30 and 31-45 years), and they self-evaluate comparable leadership competences.

Table 6. *Comparison between 18-30 and 46-60 age groups*

Age groups	*N*	*M*	*U*	*Z*	*p*
18-30	78	52.91			
46-60	36	67.44			
			1046	-2.186	0.029

Note: *U = Mann-Whitney U, Z = Z score for Mann-Whitney test, p = significance value (p < 0.05 indicates statistically significant difference).*

The Mann-Whitney U-test revealed leadership competences between teachers aged 31-45 and those of 46-60 years, indicating a significant difference, with U = 845, Z = -2.684, p = 0.007 (Table 7). This suggests that the 46-60 age group has higher scores on leadership competences than the 31-45 age group. Therefore, leadership competences do not seem to show a statistically significant increase in the early career stages (between 18-30 and 31-45 years), but a significant jump in their development becomes evident in later stages as teachers accumulate substantial experience, reaching the 46-60 years age range. This suggests that professional maturity and long experience contribute directly to a marked improvement in these competences.

Table 7. *Comparison between 31-45 and 46-60 age groups*

Age groups	*N*	*M*	*U*	*Z*	*p*
31-45	69	47.25			
46-60	36	64.03			
			845	-2.684	0.007

Note: *U = Mann-Whitney U, Z = Z score for Mann-Whitney test, p = significance value (p < 0.05 indicates statistically significant difference).*

To test if there are significant differences in the total scores on leadership competences according to the level of education completed, we used the Kruskal-Wallis test, given that the variable level of education has

three categories (pedagogical high school, bachelor, and master) and the distribution of the data is not parametric. The results indicate that there are no significant differences between the analysed groups; $\chi^2(2) = 0.117$, $p = 0.943$ (Table 8). Thus, it can be concluded that the level of completed education does not significantly influence the leadership competences of ECEs. No significant differences between groups were identified for this variable; thus, it was not necessary to perform post-hoc tests.

Table 8. *Kruskal-Wallis test results on differences in leadership competences scores according to the respondents' level of education completed*

Educational level	*N*	*M*	χ^2 *(H)*	*df*	*p*
Pedagogical high school	26	92.77			
University studies (bachelor)	92	90.69			
University studies (Master)	65	93.55			
			0.117	2	0.943

Note: ** p < .05, ** p < .01, *** p < .001*

To test whether there are significant differences in leadership competences according to the teaching environment (urban or rural), we used the Mann-Whitney test, considering two independent groups and non-parametric data. The results indicate that there are no significant differences between teachers teaching in urban and rural settings, U = 3,053.00, Z = -0.810, p = 0.418 (Table 9). Therefore, the teaching environment does not significantly influence leadership competences. No significant differences were found between groups for this variable; thus, post-hoc tests were not necessary.

Table 9. *Results of the Mann-Whitney U test on the differences in leadership competences scores according to the level of respondents' teaching environment*

Teaching environment	*N*	*M*	*U*	*Z*	*p*
Urban	118	85.37			
Rural	56	91.98			
			3053.000	-0.810	0.418

Note: ** p < .05, ** p < .01, *** p < .001*

The results of the Kruskal-Wallis test indicate that there are no statistically significant differences in the leadership competences of early childhood teachers according to the number of years of experience, $\chi^2(3) = 7.240$, $p = 0.065$ (Table 10). Thus, professional experience does not seem to significantly influence leadership competences in this study. No significant differences between groups were identified for this variable; thus, post-hoc tests were not necessary.

Table 10. *Results of the Kruskal-Wallis test on differences in leadership competences scores according to respondents' work experience*

Experience	*N*	*M*	*χ^2 (H)*	*df*	*p*
1-5	80	79.10			
6-10	32	84.33			
11-20	30	82.97			
20+	28	107.84			
			7.240	3	0.065

Note: ** p < .05, ** p < .01, *** p < .001*

The results of the Mann-Whitney test indicate that there are no statistically significant differences in teachers' leadership competences according to the kindergarten program in which they teach, $U = 3099.000$, $Z = -0.402$, $p = 0.688$ (Table 11). Thus, the kindergarten program (normal or extended) does not significantly influence leadership competences in this study. No significant differences were found between groups for this variable; thus, post-hoc tests were not necessary.

Table 11. *Results of the Mann-Whitney U test for differences in leadership competences scores by respondents' kindergarten program*

Kindergarten program	*N*	*M*	*U*	*Z*	*p*
Normal	57	87.63			
Extended	113	84.42			
			3099.000	-0.402	0.688

Note: ** p < .05, ** p < .01, *** p < .001*

To assess the respondents' perceptions and suggestions on how to improve leadership competences in ECE, a qualitative analysis of the answers given to the open-ended question '*What proposals/suggestions do you have for improving leadership competences in early childhood education?*' was carried out. The 69 responses were subject to thematic coding (Table 12). Coding was done manually, and categories were introduced into SPSS for frequency analysis. Responses were browsed and coded based on recurring themes identified in the text. For each established thematic category, the responses were transformed into binary variables, where a value of 1 indicates the presence of the proposition in the response and 0 its absence. The categories analysed were established using an inductive approach, based on recurrent themes identified directly from the participants' responses, and included: training, communication and collaboration, support for the head teacher, teaching materials, reducing bureaucracy, working conditions, conflict management, staff involvement, and responses with no proposal. This coding allowed the frequency of each theme to be quantified, providing a structured perspective on the priorities and needs expressed by respondents. The qualitative analysis thus carried out adds to the understanding of the factors perceived as essential in the development of leadership competences in ECE, complementing the quantitative data obtained through the other research instruments.

Analysis of the open-ended responses indicates that *training* is the most frequently mentioned category, with (23.2%) of the valid responses, which emphasises a major concern for continuous development and improvement of managerial skills in ECE. A significant percentage (27.5%) of the respondents did not offer *any suggestions*, which may reflect either satisfaction with the current situation or a lack of ideas or motivation to propose changes. *Communication and collaboration* is the third most frequent category (13%), suggesting the importance of interpersonal relationships and transparency in educational management. At the same time, *the support of the principal* is emphasised by (11.8%) of the participants, indicating that the support of institutional leaders is perceived as essential for managerial effectiveness. *Teaching materials* and *staff involvement* have a similar influence (8.7%), emphasising the need for adequate resources and the active participation of all teachers in decision-making. Categories such as *reducing bureaucracy*, *working conditions* and *conflict management* were mentioned less frequently, suggesting that, in the perception of the respondents, these are not the most pressing issues in the context of leadership competences.

Table 12. *Frequency and percentage of proposals to improve leadership competences in ECE*

Categories	*N valid*	*Appears (n)*	*Appears (%) of N valid (69)*	*Appears (%) of total sample (188)*
Professional training	69	16	23.2%	8.5%
No suggestions	69	19	27.5%	10.1%
Communication and collaboration	69	9	13.0%	4.8%
The support of the principal	69	8	11.8%	4.3%
Teaching materials	69	6	8.7%	3.2%
Staff involvement	69	6	8.7%	3.2%
Working conditions	69	3	4.3%	1.6%
Conflict management	69	3	4.3%	1.6%
Reducing bureaucracy	69	2	2.9%	1.1%
Patience	69	2	2.9%	1.1%

Note: *Of the total of 188 respondents, 69 provided at least one response. The values represent the number and percentage of valid responses for each suggestion category. Responses were coded as 1 (presence of suggestion) and 0 (absence of suggestion).*

5. DISCUSSION

The aim of the study was to investigate the relationships between leadership competences and motivation of educators in ECE, as well as the factors that determine differences in leadership competence. The results revealed positive and significant correlations between intrinsic and extrinsic motivation and leadership competences. Significant differences in leadership competences were also found by age group, while differences by educational level, teaching background, work experience, or kindergarten program were not significant. These data underscore the crucial role of motivation, particularly intrinsic motivation, in the development of leadership competences.

In line with the Self-Determination Theory (Ryan & Deci, 2000), the study found a strong positive relationship between leadership competences and intrinsic motivation, and between kindergarten leadership and teacher motivation (Eyal & Roth, 2011). The positive and significant correlation confirms the self-determination and intrinsic motivation theories.

Analyses of differences in leadership competences by demographic variables revealed a significant influence of age group, with clear differences between the 18-30 and 46-60 age segments. This finding is in line with the

idea that accumulated experience contributes to the development of leadership competences (Fonsén & Ukkonen-Mikkola, 2019; Muijs & Harris, 2003). Understanding how leadership competences evolve in the teaching profession is essential for improving educational practice. Such competences develop gradually over teachers' careers, becoming stronger through professional experience, continuous reflection, and the use of practical wisdom in educational situations (Bodin, 2025). Nguyen et al. (2020) further stress that involvement in teacher leadership activities positively influences teachers' leadership knowledge and skills. However, stronger leadership competences might be less valuable if demotivated educators, once boredom, low professional image or self-esteem, or other contextual factors might negatively influence teachers 'motivation.

Contrary to other studies, we observed no significant differences by educational level, teaching background, work experience or kindergarten program. Extrinsic motivation had a weaker correlation with leadership competences, aligning with the findings of Herzberg (Alshmemri et al., 2017). The result suggests that for ECEs, intrinsic motivation is more relevant to the assumption of developing leadership competencies and managerial roles. It is important to note that, although intrinsic motivation is a key factor, the development of leadership competence is also influenced by the organisational context, including the quality of leadership provided by the institution's managers. They have the ability to establish a conducive atmosphere that fosters teacher motivation and facilitates the growth and implementation of leadership skills (Setyawati, 2023; Thoonen et al., 2011). Furthermore, sustainable improvement in teaching depends on the support of principals, whose leadership plays a central role in fostering teachers' professional learning and leadership capacities (Thoonen et al., 2011).

Besides the role of principals on supporting the leadership competences, teachers more frequently suggest that for improving leadership competences principals should foster communication and collaboration, as well as professional training, as the qualitative analysis of the open-ended responses revealed, indicating the need for courses and training. Issues like reducing bureaucracy, improving working conditions or conflict management were mentioned less frequently. These qualitative results complement quantitative data, providing a nuanced perspective on needs and concerns. These qualitative results complement quantitative data, providing a nuanced perspective on needs and concerns.

From a practical point of view, the evidence suggests that professional development programs need to be geared towards boosting intrinsic motivation and strengthening leadership competences, especially for young teachers, who

have been shown to have less developed managerial skills. This suggests the need for differentiated interventions, taking into account age and level of experience.

As a limit, although we obtained a reasonable 188 responses, a larger sample could yield more robust and representative results. The study's other limitation was the alteration of the TLS scale, which could potentially impact the distribution of responses. However, the high reliability and confirmed factor structure support the use of the adapted format.

Future research could look more into how managerial skills affect staff motivation, consider other important factors like the work environment or organisational culture, and use bigger groups and different methods to make the findings more relevant and useful for educational practice. It is also recommended to explore in more detail the concrete directions for interventions highlighted in the qualitative analysis, such as training, improving communication, and strengthening managerial support.

6. CONCLUSIONS

The study contributes to understanding the relationship between leadership competence and motivation among ECEs. The results of this study provide an important starting point in understanding how motivation influences the development of ECEs' leadership competences. The research revealed that intrinsic motivation is closely related to the enhancement of these leadership competences that are essential for the smooth functioning of educational institutions.

Based on the data obtained, the positive correlation between intrinsic motivation and leadership competences is confirmed, as well as a moderate but significant link with extrinsic motivation. These aspects emphasise the need for professional development strategies to focus not only on supporting the intrinsic motivation of educators but also on strengthening effective leadership in preschool institutions.

Furthermore, the analysis of the open-ended responses revealed important practical issues, such as the need to prioritise professional training, improve communication and collaboration among teachers, and increase managerial support. These elements can provide concrete directions for future interventions, contributing to a more complex and applicable understanding of the factors influencing leadership competences in ECE. But such factors need to be further explored, giving the professional status and working conditions of ECE educators that might influence their motivation and leadership competence over the years.

Summing up, to foster the leadership competences of ECEs, it is essential to implement programs and policies that both harness personal motivation and promote a supportive organisational environment, led by leaders who continuously inspire and support professional development.

Disclosure statement

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