Digital Leadership Influencing the Capabilities of Early Childhood Education Organizations in School Mover I Bandung

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Abstract. The study aims to investigate the challenges and issues arising from the impact of digital leadership and organizational capabilities on Early Childhood Education (ECE) School Mover in Bandung City. This includes understanding how these factors may hinder or enhance the educational environment in such institutions. This research examines the influence of digital leadership and organizational capabilities in Early Childhood Education (ECE) School Mover in Bandung City. The author used the Structure Equation Model (SEM) in conjunction with quantitative methods on a sample of 238 participants. Results indicate that all indicators on both variables effectively reflect the latent variables, and show a strong level of validity. These findings underscore the significance of digital leadership in enhancing educational organizational capabilities. Even though ECE is part of School Mover, with the vision "Freedom to Learn, Freedom to Play," this research reveals that there is still a gap between the need for digitalization in education and the ability of ECE organizations to adopt digital technology. Efforts to overcome this inequality must include technology training for teaching staff, support from the government, adequate budget allocation, and a leadership model that can lead ECE organizations in adopting digital technology. The demonstrated strong correlation between digital leadership and organizational capabilities underscores the need for targeted interventions to bridge the digital leadership implementation gap in ECE.

Keywords: Capabilities, Digital Leadership, Early Childhood Education (ECE), Leadership, School Mover

1. Introduction

Early childhood education (ECE) is a critical stage in the education process that plays a pivotal role in shaping a child's character and abilities (Ashurova, 2021, p. 47; Kokkalia, 2019, p. 5). The quality of learning in ECE significantly impacts a child's future learning outcomes. Therefore, ECE institutions need to adopt the latest practices in education, including the use of digital technology and innovative teaching methods (Otterborn, Schönborn & Hultén, 2019, p. 718; Ilomäki & Lakkala, 2018, p. 2). As leaders in education, ECE school principals have a crucial role in guiding teachers to embrace best practices in teaching and enhancing the quality of learning in schools. Digital leadership is considered a vital factor in improving the quality of education. Digital leadership encompasses the practices used by school principals to leverage digital technology in supporting teaching and learning in schools (Uğur & Koç, 2019, p. 58; Sarker et al., 2019, p. 454). Effective digital leadership can help enhance the capabilities of educational institutions. However, there is limited research on digital leadership and organizational capabilities, particularly at the ECE level. As an educational institution, ECE, like any other educational organization, needs to have strong organizational capabilities. ECE is a crucial stage in a child's development, and a high-quality ECE program provides a solid foundation for children to thrive in their subsequent educational stages. Therefore, having a strong organizational capability is crucial to ensure that the Early Childhood Education program operates effectively (Li & Chan, 2019, p. 685). Other reasons why strong organizational capabilities are essential for ECE include ensuring teaching quality and ensuring that the ECE program is well-structured. Consequently, the quality of education can be improved, and each child can benefit maximally from the ECE program.

According to UNICEF, there are several dimensions of quality in ECE, including 1) planning and resource allocation, 2) curriculum and pedagogical approach, 3) workforce, 4) family and community engagement, and 5) quality assurance mechanisms (UNICEF, 2020). Moreover, in today's educational era, technology has become an integral part of education development. Hence, educators must possess competencies and aptitudes for instructing students through the use of technology (Ilomäki & & Lakkala, 2018, p. 5). Accordingly well-managed ECE organizations can efficiently utilize resources, improve public trust in the ECE program, and ensure that it continues to receive the support and resources needed to operate effectively.

Capabilities can be described as the skills and competencies that individuals or organizations possess. In the context of an individual, it refers to the capacity to carry out diverse tasks within a job (Nurasniar, 2022, p. 122). In the context of the organization, capability mediates the organizational performance with its determinants such as planning, administration, and control of the organization (Salim et al., 2019, p. 7). By optimizing organizational capacities, the value of the organization can be enhanced through the augmentation of employee skills and expertise (Nurasniar, 2022, p. 123). Organizational capability is an organization's ability to create added value for stakeholders through the effective and efficient utilization of available resources. According to (Boatman, 2022, p. 1), some indicators of organizational capabilities include organizational culture, leadership performance, strategic unity, innovation, agility, talent, and customer connectivity. The ability to integrate various indicators into the right mix of organizational capabilities can help an organization operate effectively and provide excellent service and satisfaction to its customers.

ECE is now also part of the School Mover program. The School Mover program aims to encourage the transformation of educational units to improve students' holistic learning outcomes, including cognitive competencies (literacy and numeracy) and non-cognitive aspects (character), in line with the Pancasila learner profile. The School Mover program in ECE embraces the vision of " Freedom to study, Free to play " to ensure quality education for early childhood, enabling them to grow optimally and be ready for further schooling. This vision is embodied in the concept of Quality ECE, which has three general objectives: 1) increasing participation in ECE units before entering primary school, 2) strengthening governance to ensure inclusive, accessible, and equitable ECE services, and 3) ensuring high-quality and meaningful learning processes, allowing children to grow and develop holistically (Kemdikbud, 2023, p. 1). The number of ECE School Movers in Indonesia currently stands at 3,645 ECE, distributed across 34 provinces and 509 districts/cities (PAUD, 2023). Intending to improve competencies and characters aligned with the Pancasila learner profile, organizational capabilities become a crucial factor in the development of ECE as a School Mover. Capabilities are closely related to how ECE institutions can adapt to a changing environment, especially in terms of digital technology, which can enhance organizational capabilities.

In the contemporary global landscape, the realm of digital leadership is significantly influencing the capabilities of Early Childhood Education (ECE) organizations. The world today is characterized by a rapid and pervasive integration of digital technologies into various aspects of society, including education. Digital leadership in ECE organizations is navigating a dynamic environment shaped by technological advancements and the increasing need for digital literacy (Alam et al., 2023, p. 6656). In the context of Early Childhood Education, the conditions are marked by a growing awareness of the pivotal role technology plays in shaping the learning experiences of young children. The prevalence of digital tools and resources has become more pronounced, necessitating a strategic approach to leadership that embraces and harnesses these technological advancements (Ljunggren & Moen, 2019, p. 188; Luo et al., 2023, p. 7). ECE organizations are grappling with the challenge of incorporating digital elements into their pedagogical practices while ensuring the effective development of children in their formative years.

1.1. Problem Statement

There are currently 27 ECE School Movers in the city of Bandung, as part of ECE Pedia (PAUD, 2023), consisting of 26 private ECE schools and 1 ECE school. Based on interviews conducted with one of the ECE School Mover principals, such as the Head of TK Al Wahdah School (Nasihin, 2023, p. 2 28), it is evident that there is a high demand for digitization in the modern era, especially in education. The use of technology in the teaching and learning process, such as using educational apps, video conferencing, and other digital learning platforms, is becoming increasingly important. However, on the other hand, ECE organizations, in general, have not fully embraced digital technology.

According to the results of interviews and observations conducted in these schools, several factors influencing this issue include:

a. Limited hardware and software: Some ECE organizations may not have adequate hardware or software to support digital learning, affecting their ability to adopt digital technology.
b. Lack of technology skills: Adequate technology skills are crucial in adopting digital technology. However, some ECE organizations may not have educators with sufficient technology skills to manage digital learning.
c. Budget constraints: Implementing digital technology requires a significant budget. Some ECE organizations may not have adequate funds to adopt digital technology.
d. Lack of government support: The government has not fully provided adequate support to ECE organizations in adopting digital technology.

Considering these factors, there is a discrepancy between the high demand for digitization in the modern era and the ECE organizations' capacity to adopt digital technology. To address this imbalance, efforts are needed to improve the organizational capabilities of ECE in adopting digital technology. This may include providing technology training for educators, gaining government support, and allocating sufficient budgets for digital adoption. Additionally, effective leadership models are required to lead ECE organizations in adopting digital technology, including policy-making and strategic planning.

1.2. Related Research

Previous research on leadership at the ECE level indicates that early childhood education requires more leadership theories that deliberately explain the goals of working for change, including the goal of reducing oppression and achieving greater equality for children, families, communities, and early childhood labor (Nicholson et al., 2018, p. 21). Other research mentions that the digitalization-influenced curriculum sets requirements for early childhood education (ECE) to implement digital practices. However, ECE teachers encounter difficulties in integrating information and communication technology (ICT) and child-centered pedagogy, such as digital portfolios, into their practices (Alam et al., 2023, p. 6657).

Previous studies have focused on analyzing barriers to digital technology implementation. This study, on the other hand, takes a broader view and discusses the complex task of integrating digital practices into education by analyzing the supporting and challenging factors in the implementation process. The results show that human factors are considered the driving force, and resources are the most challenging factor in the implementation of digital portfolio practices. Resource challenges can negatively impact teachers' attitudes toward digital practices and technology in general at the ECE level (Maria, 2019, p. 313).

In this study, an analysis of organizational capabilities and influencing factors was conducted. Leadership is one of the key factors influencing organizational capabilities. The digitalization era has permeated various aspects of life, including educational institutions, with various consequences.

This research emphasizes the exploration of the intersection between digital leadership and the organizational capabilities specific to early childhood education within the context of School Mover Bandung City. It includes:

a. Contextual relevance: the importance of considering local nuances and the unique characteristics of the educational environment in Bandung.
b. Digital Leadership in Early Childhood Education: The research is at the forefront of examining how digital leadership, a concept evolving in response to technological advancements, influences the capabilities of organizations dedicated to early childhood education.
c. Implications for Educational Practices: The study's state of the art lies in its potential to offer practical implications for educational practices within early childhood education.
d. Bridging the Digitalization Gap: The research addresses the contemporary challenge of bridging the gap between the need for digitalization in education and the actual adoption of digital technology in early childhood education organizations.

1.3. Research Objectives

In response to the evolving landscape of education and the increasing significance of digital technologies, this research delves into the specific context of School Mover Bandung to investigate the dynamic interplay between Digital Leadership and the Capabilities of Early Childhood Education Organizations. The research objectives are stated below.

a. How is the landscape of digital leadership in Early Childhood Education School Mover I in Bandung?
b. How capable are the organizational capabilities in Early Childhood Education School Mover I in Bandung?
c. What are the influences of digital leadership on organizational capabilities in Early Childhood Education School Mover I in Bandung?

2. Theoretical Framework

2.1. Organizational Capabilities

Organizational capability is the ability of an organization to carry out a series of tasks using organizational resources (Nawawi, 2018, p. 242). The concept of organizational capabilities indicates flexibility and dynamism within an organization's abilities, making each organization's capabilities unique. Numerous basic definitions of organizational capability theory exist, but in this study, we will use a definition that refers to the overall ability of an organization. If these capabilities are optimally and appropriately utilized, they can become a comparative advantage for the organization in achieving its goals. Organizational capability is an intangible, strategic asset that organizations can draw upon to complete tasks, execute their business strategy, and satisfy their customers (Boatman, 2022, p. 1).

According to Boatman (2022, p. 1), indicators of organizational capabilities include organizational culture, leadership performance, strategic unity, innovation, agility, talent, and customer connectivity. The ability to integrate these indicators into the right mix of organizational capabilities can help organizations operate effectively and provide excellent service and satisfaction to their customers.
These indicators can be further explained as follows:
a. Organizational culture: An inclusive organizational culture empowers and engages employees, supporting the organization's goals. It fosters the development and shapes the identity of the organization. Employee mindsets contribute to efficient functioning, and collaboration promotes teamwork, forms alliances, and enables cross-functional communication.
b. Leadership performance: Effective leadership represents the company well, managing and inspiring employees. A clear leadership image differentiates the company from competitors. Positive leadership perceptions are maintained consistently throughout the team. Leadership skills are instilled throughout the organization, with learning opportunities

for all employees.

c. Strategic unity: Articulated strategic vision is adopted across the organization. Sustained investments in the practices and procedures necessary for strategy development and implementation exist. All employees consistently understand the business strategy and why it is essential. Employees recognize how their roles support the strategy. Employees feel heard, and their suggestions are acted upon.

d. Innovation: Delivering successful new products and services while continually updating processes for continuous improvement. The focus is on the future, not the past. Willingness to change any part of the organization. Proper processes are in place to accept new concepts. An atmosphere of excitement is created around new ideas.

e. Agility: Responsiveness and flexibility to changes in the internal and external environment. Skilled and knowledgeable employees are ready to adapt. Quick decision-making processes without relying on bureaucracy. Proactive planning adaptable to competition or unforeseen events. Flexible systems and workflows accommodate changes or organizational expansion.

f. Talent: Competent employees at all levels within their roles. Employees are equipped with the skills and tools they need for their current and future roles. Employees are committed to performing well and consistently. Learning and development are supported and provide the ability to motivate and retain competent employees.

g. Customer connectivity: Established customer relationships based on trust and strong customer focus are the foundation. Prioritization of dedicated teams with meaningful customer relationships. Strong accountability toward customers. Collection of customer data and robust analytics.

2.2. Digital Leadership

2.2.1. Digital Leadership Concept

Leadership is not only a driver of different digital innovations but also at the core of digital innovation. Digital leadership is fueled by the availability of new digital technologies leading to innovative digital solutions (Gierlich-Joas, M., & Neuburger, 2020, p. 921). Buhse views the digital leader as a moderator, bridge builder, and network organizer rather than a classical top-down manager (Buhse, 2012; Tadeja, 2018, p. 641). Buhse sees a digital leader as a moderator, a bridge builder, and a network organizer, rather than a traditional top-down manager, and this is closely related to digital leadership (Tadeja, 2018, p. 641).

A new leadership style, in line with the digital technologies that have matured over the last decade, has yet to become more widespread, even though some aspects of what "digital leadership" might look like have already emerged (Ratajczak, 2022, p. 13). Digital leadership is a new construct of leadership that connects leaders with technology. In reality, digital leadership is not just about using technology but also involves a strategic view of school culture focusing on engagement and achievement. According to Askal in Domeny (2017, p. 4), digital leadership is a new leadership construct for K-12 administrators that connects them with technology. Digital leadership encompasses "the use of extensive technological reach (especially through social media) to enhance the lives, well-being, and circumstances of others" (Couros, 2023).

Digital leadership requires administrators to use a mindset and leverage a strategic view of school culture that focuses on student achievement and how students and teachers engage with technology (Aksal in Ordu & Nayır, 2021, p. 77). To bring about systemic changes in pedagogical practices and student learning, educational leaders must create a shared vision of how technology can meet the needs of all learners while developing realistic plans that translate the vision into action.

Research indicates that administrators create a digital culture with teachers and within the school community to support the current needs of learners (Aksal in Ordu & Nayır, 2021, p. 77). With society becoming increasingly reliant on technology, it is inevitable for leaders to harness

the power of digital technology to create a school culture that is transparent, relevant, meaningful, engaging, and inspiring. The role of digital leadership requires the development of support and digital technology learning opportunities (Sheninger, 2017, p. 66) found that digital leadership evolves based on the symbiosis of leaders connected with technology.

2.2.2. Digital Leadership in Early Childhood Education

The importance of digital leadership in Early Childhood Education (ECE) extends beyond the use of technology as a learning tool; it also includes student data management, effective communication with parents, and increased efficiency in educational institution management. Effective digital leadership in ECE enables leaders and educators to address the challenges posed by technological advancements and integrate technology holistically into the context of teaching and management.

In the development of early childhood education, digital technology has become an essential part of the learning and management processes. Innovative leaders need to understand and master the use of digital technology to enhance the quality of education and provide effective educational services. According to Asbari et al. in Ali (2022, p. 3008), to achieve effective and innovative learning, it must start with the innovative leadership of school principals. Innovative leaders can realize multiple ideas by applying systematic functions from planning to evaluation. Teamwork through creativity and innovative teamwork is essential, along with innovative and creative work methods and a true understanding of digital information. Naturally, leaders require team support in carrying out their tasks in delivering quality learning services through innovation and learning activities (Ali, 2022, p. 3011).

The effective use of technology in early childhood education significantly impacts teaching and learning (Han, 2014, p. 942). To introduce technology in the early childhood environment, school leaders need to be equipped for it (Han, 2014, p. 942). Recent research indicates that school leaders who wish to enhance the use of technology in schools need to instruct teachers on specific technology learning skills and lead staff through appropriate daily practices, as suggested by McKenzie in Han (2014, p. 942). Leaders who make a difference can have a significant influence on promoting technology use in an educational environment, especially with innovative changes (Flanagan & Jacobsen in Han, 2014, p. 945). Therefore, without the right leadership strategy, the level of success in technology implementation may be less than optimal (Han, 2014, p. 945). Han (2014, p. 945) also explains that the right leadership strategy can motivate teachers to actively use technology in their classrooms within the context of early childhood education. Center leaders play a crucial role in ensuring the successful implementation of technology in early childhood education.

According to ISTE-A standards, digital leadership is conceptualized as leaders who can inspire and lead school transformation through technology, create and maintain a digital learning culture, support technology-based professional development, provide digital leadership and management, and facilitate and manage social, ethical, and legal aspects (Zhong, 2017, p. 36). ISTE-A (International Society for Technology in Education - Administrator) is a framework for digital education leadership that sets indicators to help administrators develop the skills and strategies needed to lead digital transformation in schools or educational institutions. The International Society for Technology in Education (ISTE) also has standards for Educational Leadership. According to ISTE's website (http://www.iste.org/standards/for-education-leaders) the standards "support the implementation of the ISTE Standards for Students and the ISTE Standards for Educators and provide a framework for guiding digital age learning. These standards target the knowledge and behaviors required for leaders to empower teachers and make student learning possible." The standards are Equity and Citizenship Advocate, Visionary Planner, Empowering Leader, Systems Designer, and Connected Learner (Kennedy, 2023, p. 11). The following Figure 1 are digital leadership indicators according to ISTE-A (ISTE, 2023): Equity and Citizenship Advocate, Visionary Planner, Empowering Leader, System Designer, and Connected Leader.

Figure 1. ISTE Standards Leader (ISTE, 2023)

These dimensions are explained as follows according to ISTE-A (ISTE, 2023):

1. Equity and Citizenship Advocate: Education leaders use technology to enhance equity, inclusion, and digital citizenship practices. Education leaders:
   a. Ensure all students have skilled teachers who actively use technology to meet students' learning needs.
   b. Ensure all students have access to the technology and connectivity required to participate in authentic and engaging learning opportunities.
   c. Model digital citizenship by critically evaluating online resources, engaging in civil online discussions, and using digital tools to contribute to positive social change.
   d. Create responsible online behavior, including safe, ethical, and legal technology use.

2. Visionary Planner: Education leaders engage others in setting a vision, strategic planning, and a continuous evaluation cycle to transform learning with technology. Education leaders:
   a. Engage educational stakeholders in developing and adopting a shared vision for using technology to improve student success based on learning science.
   b. Build on the shared vision by collaboratively creating a strategic plan that articulates how technology will be used to enhance learning.
   c. Evaluate progress in the strategic plan, make improvements as necessary, measure the impact, and expand effective approaches to using technology for learning.
   d. Communicate effectively with stakeholders to gather input on plans, celebrate successes, and engage in continuous improvement cycles.
   e. Share lessons learned, best practices, challenges, and the impact of technology-enhanced learning with other education leaders interested in learning from this work.

3. Empowering Leader: Education leaders create a culture where teachers and students are empowered to use technology in innovative ways to enrich learning. Education leaders:
   a. Empower educators to exercise professional agency, build teacher leadership skills, and pursue personalized professional learning.
   b. Enhance educators' confidence and competence in applying the ISTE Standards for Students and Educators.
   c. Inspire a culture of innovation and collaboration that provides time and space to explore and experiment with digital tools.
   d. Support educators in using technology to advance learning that meets the diverse learning, cultural, and social-emotional needs of each student.
   e. Develop assessment practices that provide real-time, actionable insights into student progress.

4. System Designer: Education leaders can build teams and systems to implement, sustain, and continuously improve the use of technology in support of learning. Education leaders:
   a. Lead teams in establishing robust infrastructure and systems needed to collaboratively carry out the strategic plan.
   b. Ensure that resources supporting effective technology use in learning are sufficient and can be upgraded to meet future demands.
   c. Protect privacy and security by ensuring students and staff adhere to effective privacy and data management policies.
   d. Build partnerships that support the strategic vision, achieve learning priorities, and enhance operations.

5. Connected Leader: Education leaders model and promote sustainable professional learning for themselves and others. Education leaders:
   a. Set goals to stay current with the latest technology in learning, pedagogical innovation, and advances in learning science.
   b. Regularly participate in online professional learning networks to collaboratively learn with and mentor other professionals.
   c. Use technology routinely to engage in reflective practices that support personal and professional growth.
   d. Develop the skills needed to lead and manage change, advance systems, and promote a sustainable improvement mindset related to how technology can enhance learning.

3. Method

3.1. Research Design

This research was conducted using a quantitative approach and a descriptive method, which aims to solve problems by presenting or describing the research results as they are. The study examined two variables: the independent variable Digital Leadership (X) and the dependent variable Organizational Capability (Y). The research was carried out in the Early Childhood Education (ECE) schools of the First Generation Leader School in Bandung City, which consists of four Early Childhood Education schools, namely, 3 Private Leader Schools and 1 Public Leader School.

3.2. Respondent

To determine the sample size in this research, the Taro Yamane formula was used, as follows: n = N / (1 + N(d^2)), where n = sample size, N = known population size, and d = designated precision. In this research, a margin of error of 5% was used. To determine the sample size for each school, proportional sampling was employed.

Population can be defined as the entire subject in a research (Arikunto, as cited in Liyas, 2017). Furthermore, population is defined as the totality of subjects and/or objects in research. A population can be a generalized space, including entities with limited quantity and attributes, whose unit size is determined by the research scientist, and conclusions are drawn from it (Sugiyono, 2017). Based on this explanation, the population selected for this research includes teachers, educational staff, and parents of Early Childhood Education students. The detailed explanation is in the table 1 below.

Table 1. Research Population

No.	School Name	Status	City	Number of Teachers & Educational Staff	Number of Students	Total Population	Total Sample
1	TK Al Wahdah	Private	Bandung	10	119	129	58
2	TK Daarut Tauhid	Private	Bandung	8	100	108	49
3	TK Gagas Ceria	Private	Bandung	14	122	136	62
4	TK Negeri Centeh	Public	Bandung	12	96	108	49
	Total			44	437	481	218

3.3. Data Collection

Data collection was carried out through questionnaires. Closed-ended statements were used in the research, where each question used a Likert scale ranging from very positive to very negative, which could be translated into numerical values. For example, "Strongly Agree" was given a score of 5, and "Strongly Disagree" was given a score of 1. These scores were used for quantitative analysis in the research.

Data was obtained through distributing questionnaires to teachers and parents of Early Childhood Education (ECE) at the First Generation Moving School in Bandung City. The total number of questionnaire fillers was 238 people out of the 218 data required, with 49 detailed teachers, 184 parents of students, and 5 educational staff. For the questionnaire preparation, the researcher established operational definitions as follows:

Digital Leadership, according to the ISTE-A standard, is conceptualized as leadership that can inspire and lead the transformation of schools through technology, create and maintain a digital learning culture, support technology-based professional development, provide digital leadership and management, and facilitate and manage social, ethical, and legal aspects (Zhong, 2017, p. 36). With dimensions: Equity and Citizenship Advocate, Visionary Planner, Empowering Leader, System Designer, and Connected Leader.

Organizational Capability, Organizational capability is an intangible strategic asset that an organization can use to get the job done, execute its business strategy, and satisfy its customers. It is expected to benefit the improvement of EARLY CHILDHOOD EDUCATION organizational capabilities. With dimensions: (1) organization culture, (2) leadership performance, (3) strategic unity, (4) innovation, (5) agility, (6) talent, and (7) customer connectivity.

3.4. Data Analysis
The data analysis for the initial stage was conducted using the statistical application SPSS. To examine the influence, the researcher employed the Structural Equation Model (SEM), where the concept of Factor Analysis served as the foundation for developing latent variables, and Covariance Structure Analysis (CFA) evolved from LISREL. To facilitate the calculations and measurements in the study, the Smart PLS application was utilized (Wijaya, 2019, p. 9).

3.5. Validity and Reliability

The research instrument underwent validation through various processes, including statistical filters, descriptive analysis, Cronbach's alpha test, and Average Variance Extracted (AVE). A Structural Equation Model was applied by identifying outer loadings, and inner loadings, and establishing a structural equation model. All these analyses were performed using SMART PLS 3.0 software (Wijaya, 2019, p. 9).

Table 2. Validity and Reliability of The Construct

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Organizational Capabilities	0.946	0.947	0.956	0.755
Digital Leadership	0.940	0.942	0.954	0.806

Table 2 above indicates that the data that can be considered reliable is characterized by Cronbach's alpha values exceeding 0.7, as suggested by Supriyadi et al. (2018). This finding is reinforced by the fact that the composite parameter also has values greater than 0.7, indicating a good level of validity. Furthermore, to proceed with both outer and inner model analysis, the Average Variance Extracted status must exceed 0.5, following the recommendations of Ghozali and Latan, cite in (Furadantin, 2018, p. 2).

4. Finding

4.1. The Landscape of Digital Leadership in Early Childhood Education (ECE) School Mover I in Bandung

Digital Leadership in this study is viewed through the lens of the ISTE standards, where digital leadership is conceptualized as leaders who can inspire and lead school transformation through technology, create and sustain a culture of digital learning, support technology-based professional development, provide digital leadership and management, and facilitate and manage social, ethical, and legal aspects (Zhong, 2017, p. 36). In this research, the measured dimensions include a. Equity and Citizenship Advocate, b. Visionary Planner, c. Empowering Leader, d. System Designer, e. Connected Leader (ISTE, 2023). All these dimensions are then descriptively measured and distributed to all respondents. The following is a general overview of each dimension of digital leadership in Early Childhood Education (ECE) at School Mover I in Bandung City:
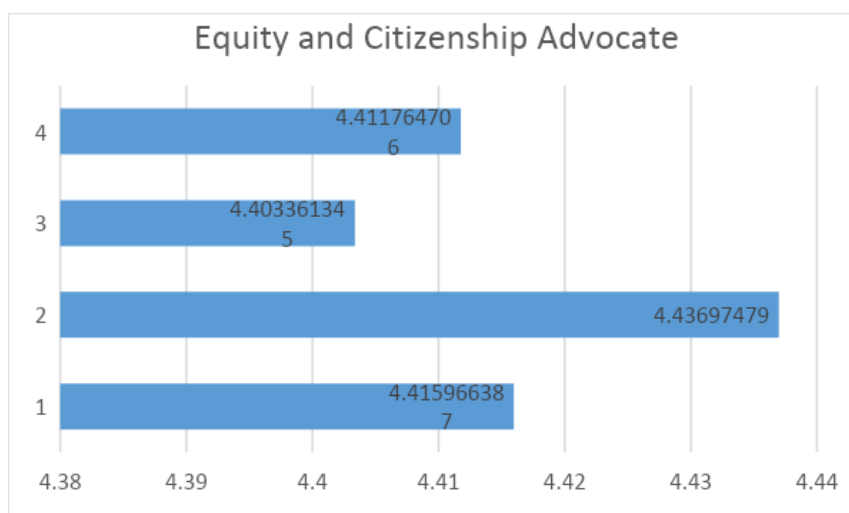
a. Equity and Citizenship Advocate

Figure 2. Implementation of Sub-Indicators of Equity and Citizenship Advocate in the Digital Leadership of Early Childhood Education (ECE) School Mover I in Bandung

Based on Figure 2, it is evident that the Equity and Citizenship Advocate dimension conducted by the head of the Early Childhood Education (ECE) at School Mover I in Bandung City has different outcomes for each sub-indicator. From the Equity and Citizenship Advocate figure above, it can be observed that the order from lowest to highest is as follows: firstly, sub-indicator

3, where the head of the school ensures teachers' involvement in activities using digital tools with a score of 4.403, indicating that it has been implemented well. Secondly, sub-indicator 4, where the head of the school ensures all students can safely use technology in the learning process, meaning it has been implemented very well. Thirdly, sub-indicator 1, where the head of the school ensures all students have teachers skilled in using technology in teaching with a score of 4.415, meaning it has been implemented well. Lastly, sub-indicator 2, where the head of the school ensures all students have access to technology in learning at school with a score of 4.436, indicating it has been implemented very well.

b. Visionary Planner
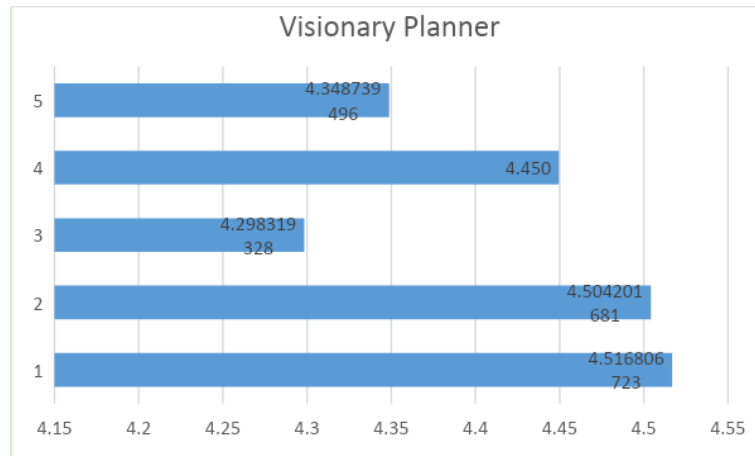
Figure 3. Implementation of Sub-Indicators of Visionary Planner in the Digital Leadership of Early Childhood Education School Mover I in Bandung

Based on Figure 3, the Visionary Planner dimension in ECE School Mover I, Bandung City, demonstrates varying outcomes for each sub-indicator. The lowest-scoring sub-indicator, at 4.298, involves evaluating the impact of technology use in learning. Conversely, the highest-scoring sub-indicator, with a score of 4.516, relates to involving teachers in developing learning technology for student success. Overall, all sub-indicators in the Visionary Planner dimension received scores ranging from 4.01 to 5.00, indicating successful and well-executed implementation by the head of the ECE.
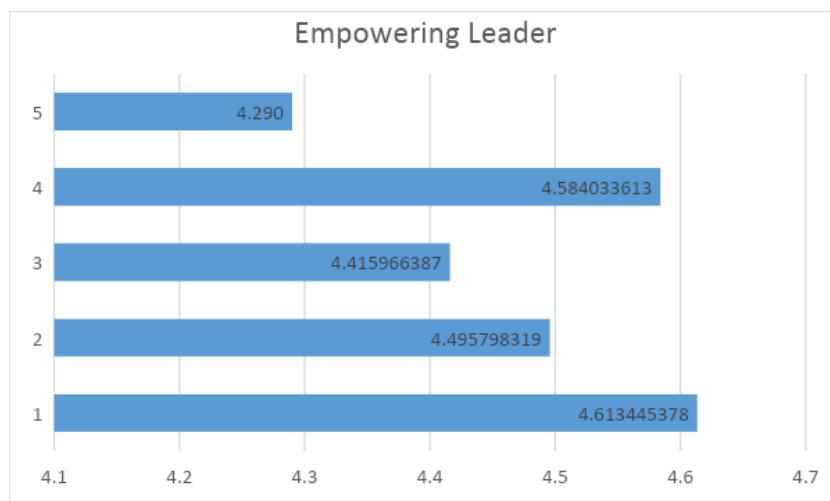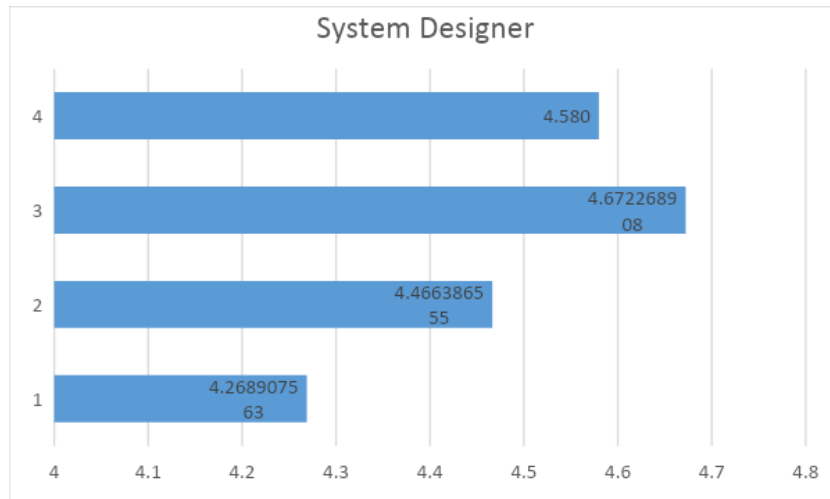
c. Empowering Leader

Figure 4. Implementation of Sub-Indicators of Empowering Leader in the Digital Leadership of Early Childhood Education (ECE) School Mover I in Bandung

Based on Figure 4, the Empowering Leader dimension in ECE School Mover I, Bandung City, exhibits diverse outcomes for each sub-indicator. The lowest-scoring sub-indicator, at 4.290, involves developing learning assessments using digital technology. Conversely, the highest-scoring sub-indicator, with a score of 4.613, relates to encouraging teachers to attend training for skill improvement. Overall, all sub-indicators in the Empowering Leader dimension received scores ranging from 4.01 to 5.00, indicating effective and well-executed implementation by the head of the ECE.

d. System Designer

Figure 5. Implementation of Sub-Indicators of System Designer in the Digital Leadership of Early Childhood Education (ECE) School Mover I in Bandung

Based on Figure 5, The System Designer dimension led by the head of ECE School Mover I in Bandung City demonstrates varying outcomes for each sub-indicator. The lowest-scoring sub-indicator, at 4.268, involves providing a strong technological system in the teaching process. Conversely, the highest-scoring sub-indicator, with a score of 4.672, relates to protecting student data security in the implementation of technology at school. Overall, all sub-indicators in the System Designer dimension received scores ranging from 4.01 to 5.00, indicating effective and well-executed implementation by the head of the ECE.
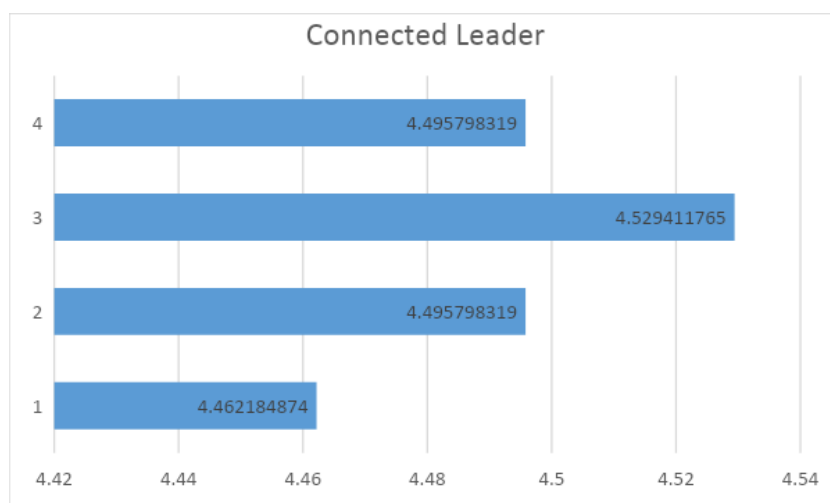
e. Connected Leader

Figure 6. Implementation of Sub-Indicators of Connected Leader in the Digital Leadership of Early Childhood Education (ECE) School Mover I in Bandung

Based on Figure 6, The Connected Leader dimension led by the head of ECE School Mover I in Bandung City displays diverse outcomes for each sub-indicator. The lowest-scoring sub-indicator, at 4.462, involves setting goals to keep up with the latest developments in the teaching process, although it is still implemented very well. Conversely, the highest-scoring sub-indicator, with a score of 4.592, relates to regularly using technology to support the professional development of educators. Overall, all sub-indicators in the Connected Leader dimension received scores ranging from 4.01 to 5.00, indicating effective and well-executed implementation by the head of the ECE.

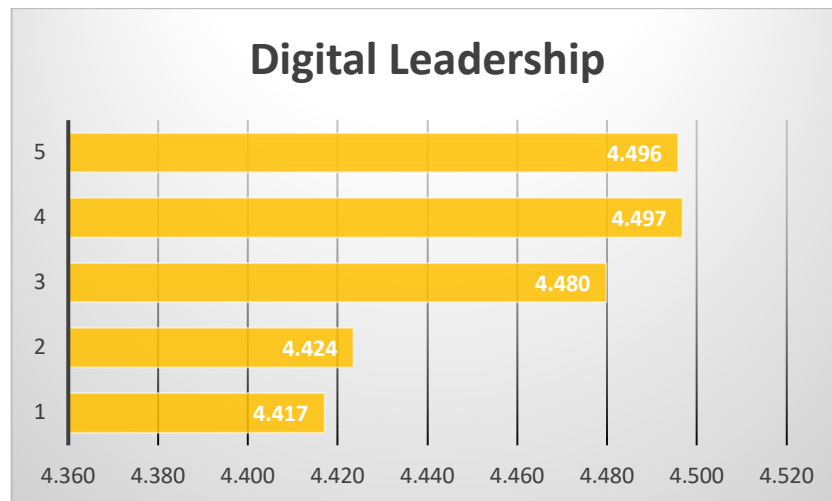In summary, the researcher provides the overall picture of digital leadership as follows:

Figure 7. Per dimensional Implementation of Digital Leadership of Early Childhood Education (ECE) School Mover I in Bandung

From Figure 7, it is clear that the dimension least implemented in the digital leadership conducted by the Head of Early Childhood Education at School Mover I in Bandung City is in the Equity and Citizenship Advocate dimension with a score of 4.417, indicating it has been done very well. Next, the second-lowest dimension is indicated in the Visionary Planner dimension with a score of 4.424, meaning it has been done very well, and then, followed by the Empowering Leader dimension with a score of 4.480, indicating that the dimension has been done very well. Furthermore, the Connected Leader dimension, which scored 4.496, indicates that the dimension has been implemented very well, and the highest dimension is in the System Designer with a score of 4.497, indicating that this dimension has been implemented very well. With these scores, some strategies are still needed to improve the implementation of digital leadership by the Head of Early Childhood Education at School Mover I in Bandung City.

4.2. The landscape of organizational capabilities in Early Childhood Education (ECE) School Mover I in Bandung

The organizational capabilities in this research consist of dimensions: a. Organization culture, b. Leadership performance, c. Strategic unity, d. Innovation, e. Agility, f. Talent, g. Customer Connectivity. These dimensions are then developed into specific indicators related to organizational capabilities. All these indicators are measured descriptively and distributed to all respondents. Through the measurement of each dimension in organizational capabilities, it will indicate to what extent the capabilities of the Early Childhood Education (ECE) institution have been fulfilled, meeting expectations or not. The following is a description of the organizational capabilities implemented in the ECE School Mover I Kota Bandung:
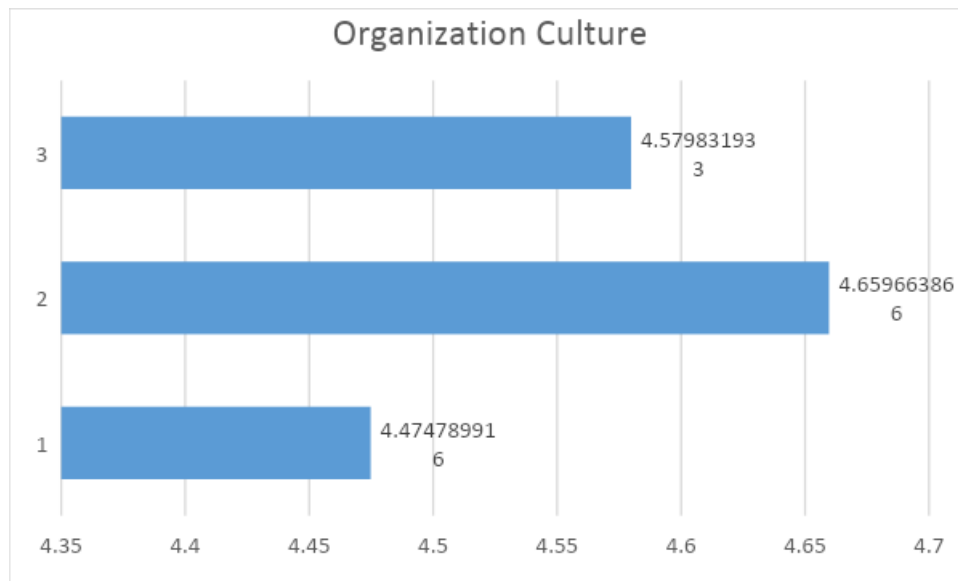
a. Organizational Culture

Figure 8. Implementation of Sub-Indicators of Organizational Culture in the Organization Capabilities of Early Childhood Education (ECE) School Mover I in Bandung

From Figure 8, The organizational culture dimension implemented in ECE School Mover I, Bandung City, reveals varying outcomes for each sub-indicator. The lowest-scoring sub-indicator, at 4.474, involves the organizational culture supporting the professional development of teachers, implemented well but with a lower score. Conversely, the highest-scoring sub-indicator, with a score of 4.659, pertains to the school strongly encouraging the creative development of teachers. Overall, all sub-indicators in the organizational culture dimension received scores ranging from 4.01 to 5.00, indicating successful and very well-implemented practices across the board.
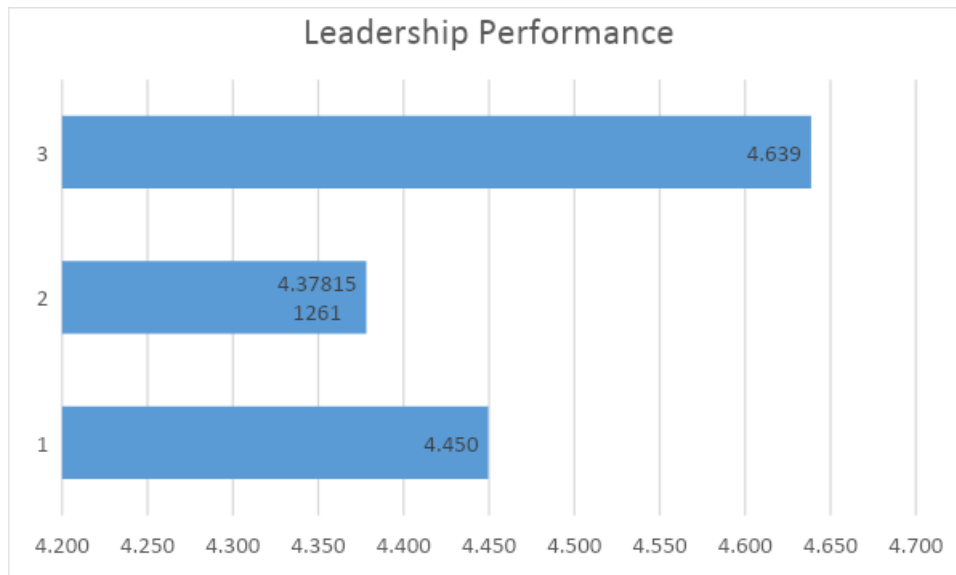
b. Leadership Performance

Figure 9. Implementation of Sub-Indicators of Leadership Performance in the Organization Capabilities of Early Childhood Education (ECE) School Mover I in Bandung

From Figure 9, The leadership performance dimension implemented in ECE School Mover I, Bandung City, demonstrates varied outcomes for each sub-indicator. The lowest-scoring sub-indicator, at 4.450, involves the leader having a different image from other school leaders,

implemented well but with a lower score. Conversely, the highest-scoring sub-indicator, with a score of 4.639, pertains to the school leader always giving opportunities for teachers to learn and develop skills. Overall, all sub-indicators in the leadership performance dimension received scores ranging from 4.01 to 5.00, indicating successful and very well-implemented practices across the board.
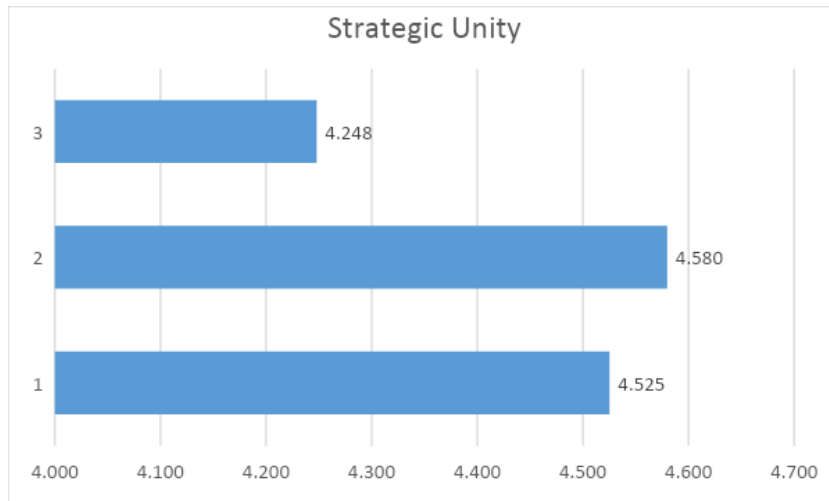
c. Strategic Unity

Figure 10. Implementation of Sub-Indicators of Strategic Unity in the Organization Capabilities of Early Childhood Education (ECE) School Mover I in Bandung

From Figure 10, The strategic unity dimension implemented in ECE School Mover I, Bandung City, reveals different outcomes for each sub-indicator. The lowest-scoring sub-indicator, at 4.248, involves strategic unity where the school gives rewards to appreciate the achievements of teachers, implemented well but with a lower score. Conversely, the highest-scoring sub-indicator, with a score of 4.580, pertains to the school providing training to teachers to help them understand their roles as educators. Overall, all sub-indicators in the strategic unity dimension received scores ranging from 4.01 to 5.00, indicating successful and very well-implemented practices across the board.
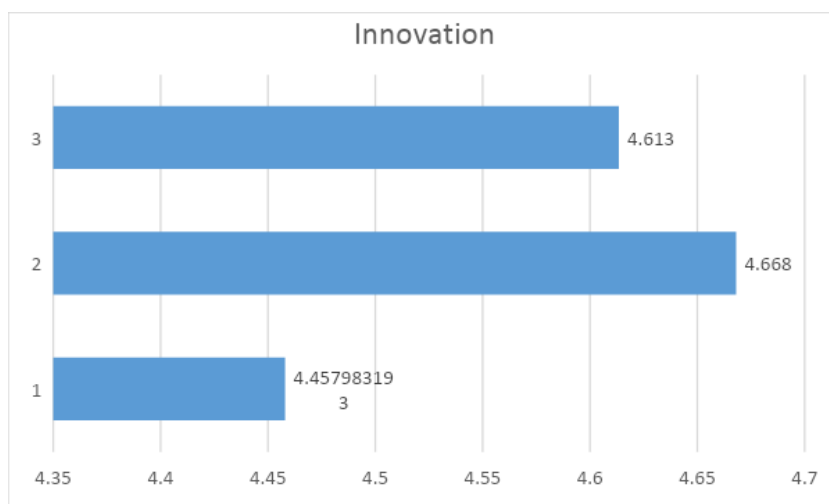
d. Innovation

Figure 11. Implementation of Sub-Indicators of Innovation in the Organization Capabilities of Early Childhood Education (ECE) School Mover I in Bandung

From Figure 11, the innovation dimension implemented in ECE School Mover I, Bandung City, exhibits different outcomes for each sub-indicator. The lowest-scoring sub-indicator, at 4.457,

involves innovation unity where the school ensures that the main priority in developing the institution is focused on future organizational progress, implemented well but with a lower score. Conversely, the highest-scoring sub-indicator, with a score of 4.668, pertains to the school always creating innovations in the learning process. Overall, all sub-indicators in the innovation dimension received scores ranging from 4.01 to 5.00, indicating successful and very well-implemented practices across the board.
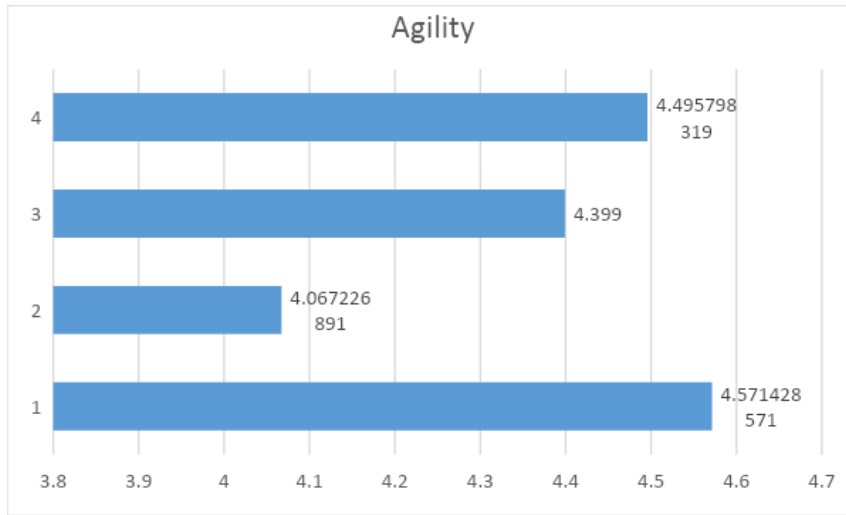
e. Agility

Figure 12. Implementation of Sub-Indicators of Agility in the Organization Capabilities of Early Childhood Education (ECE) School Mover I in Bandung

From Figure 12, The agility dimension implemented in ECE School Mover I, Bandung City, demonstrates varying outcomes for each sub-indicator. The lowest-scoring sub-indicator, at 4.067, involves agility unity where school leaders always make decisions quickly without relying on excessive bureaucracy, implemented well but with a lower score. Conversely, the highest-scoring sub-indicator, with a score of 4.571, pertains to the school always being ready to adapt to changes. Overall, all sub-indicators in the agility dimension received scores ranging from 4.01 to 5.00, indicating successful and very well-implemented practices across the board.
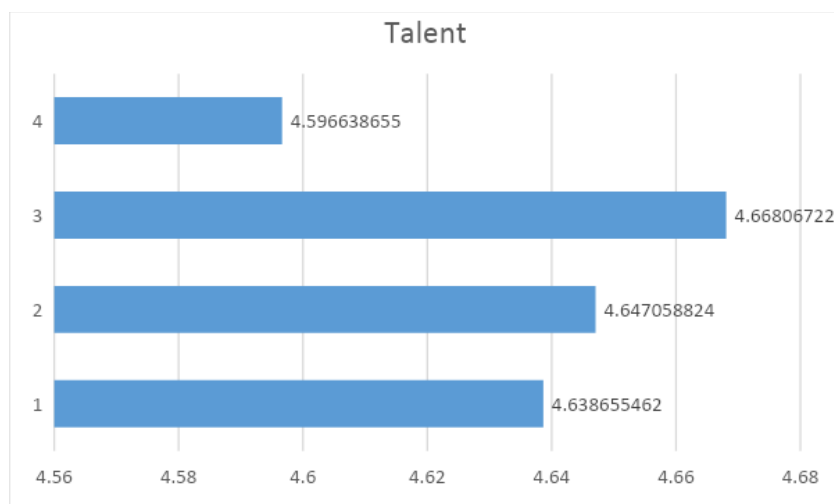
f. Talent

Figure 13. Implementation of Sub-Indicators of Talent in the Organization Capabilities of Early Childhood Education (ECE) School Mover I in Bandung

From Figure 13, ECE School Mover I Bandung City implemented the talent dimension with varying success in different sub-indicators. The lowest-scoring sub-indicator, at 4.597, involves school leaders motivating competent teachers. Conversely, the highest-scoring sub-indicator, with a score of 4.668, relates to supporting teachers in developing learning. Overall, all sub-indicators in the talent dimension received scores ranging from 4.01 to 5.00, indicating successful implementation across the board.
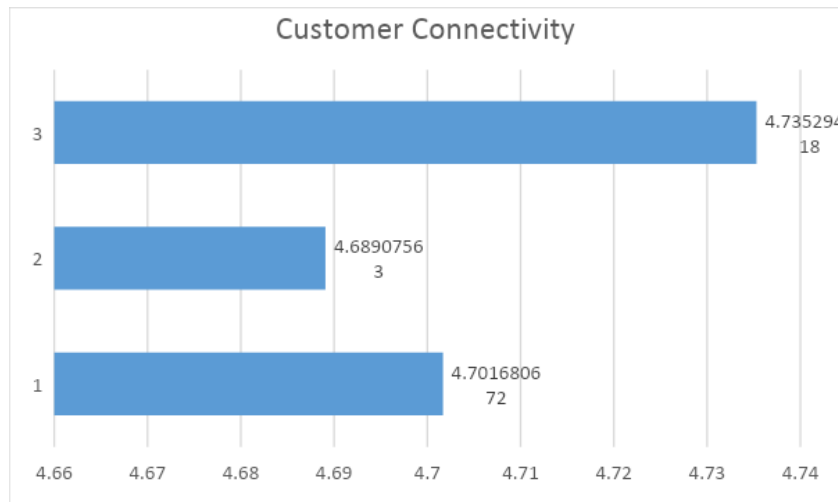
g. Customer Connectivity

Figure 14. Implementation of Sub-Indicators of Customer Connectivity in the Organization Capabilities of Early Childhood Education (ECE) School Mover I in Bandung

From Figure 14, ECE School Mover I Bandung City implemented customer connectivity with varying success in different sub-indicators. The lowest-scoring sub-indicator, at 4.689, involves ensuring all staff are responsible for parent and student satisfaction. In contrast, the highest-scoring sub-indicator, with a score of 4.735, relates to having an accountable system for managing student data. Overall, all sub-indicators in the customer connectivity dimension received scores ranging from 4.01 to 5.00, indicating successful implementation across the board.

From the above explanation, the researcher attaches an image of the Organizational Capabilities in the ECE School Mover I Bandung City environment as a whole, as follows:
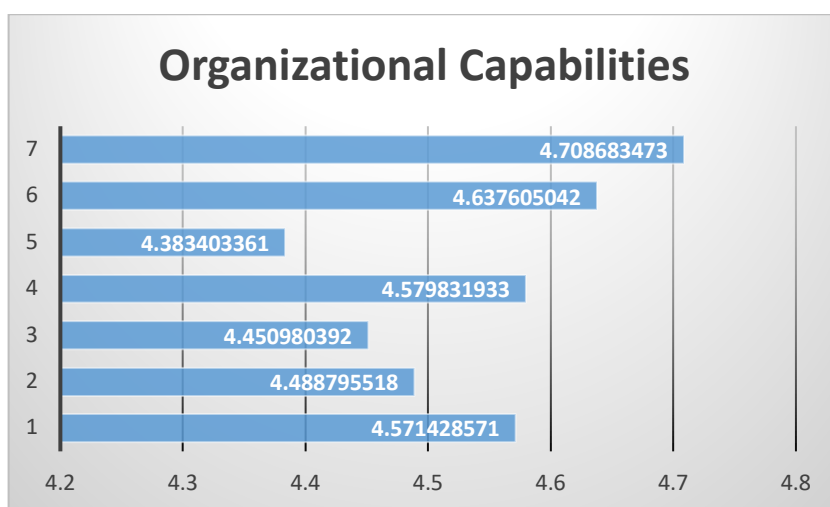

Figure 15. Per dimensional Implementation of Organizational Capabilities of Early Childhood Education (ECE) School Mover I in Bandung

From Figure 15, it can be seen that the Agility dimension with a score of 4.383, becomes the dimension that is least implemented in organizational capabilities. Next, for the Strategic Unity dimension with a score of 4.450, it becomes the second lowest dimension implemented in organizational capabilities. Following that, Leadership Performance with a score of 4.488, and Organization Culture with a score of 4.571 have been implemented well in sequence. This is followed by Innovation with a score of 4.579 and Talent with a score of 4.637, which are in the second-highest order. Lastly, Customer Connectivity with a score of 4.708 becomes the dimension with the highest score. From these score achievements, strategies are needed to enhance the implementation of organizational capabilities in the ECE School Mover I Bandung City institution.

4.3. Digital Leadership Influencing the Capabilities of Early Childhood Education Organizations in School Mover I in Bandung

Table 3. Hypothesis Analysis Results

Hypothesis	Path Coefficients	T Statistic	P Value	Result
KD →KO	0.889		0.000	Accepted

Based on Table 3, hypothesis analysis using Smart PLS shows three paths that answer the research question and test the hypothesis. The table explains that Digital Leadership has a positive and significant influence on the Organizational Capability variable, with a coefficient of 0.889 and a P value of 0.000. Due to the P value below 0.05, the null hypothesis (H0) is rejected and the alternative hypothesis (H1) is accepted, indicating that Digital Leadership influences the Organizational Capability of Early Childhood Education Organizations in School Mover I in Bandung

The following section presents the research findings to describe digital leadership and organizational capabilities in Early Childhood Education (ECE) at ECE School Mover I in Bandung City.

Table 4. Outer Loading

	Organizational Capabilities	Digital Leadership
AGG	0.847	0.774
CC	0.821	0.723
CL	0.851	0.900
ECA	0.718	0.864
EL	0.802	0.917
IN	0.871	0.727
LP	0.880	0.802
OC	0.846	0.755
SD	0.830	0.902
SU	0.919	0.834
TA	0.894	0.781
VP	0.776	0.903

From Table 4 above, it can be seen that all indicators have factor loadings above >0.7, indicating that all indicators have adequately reflected their latent variables and also show acceptable convergent validity (Ghozali & Latan, 2015).
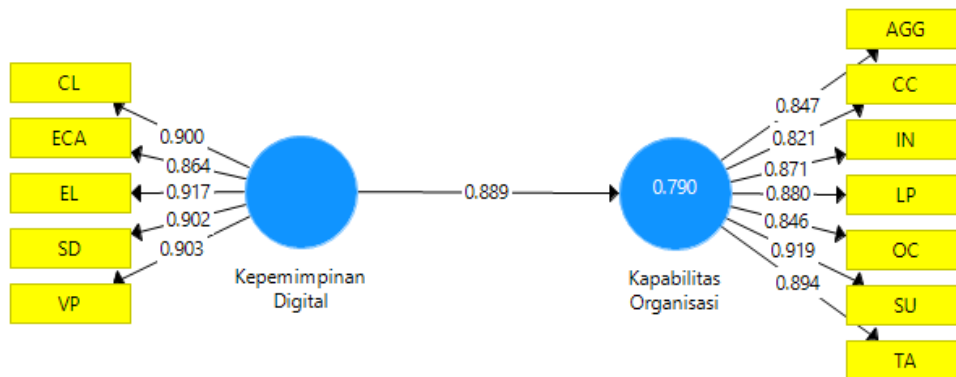

Figure 16. Analysis Inner Model

The Outer Model analysis has successfully demonstrated that all loading factors effectively reflect latent variables, confirming the strength of the model proposed by the researcher. Meanwhile, the inner model analysis, as shown in Figure 16, indicates that digital leadership has a positive partial effect of 0.889, as does the role of organizational capability at 0.790. This influence is also proven to be significant, as seen from the path coefficient significance values, as shown in Table 4 below.

Table 5. Path Coefficient Significance

	Organizational Capabilities	Digital Leadership
Organizational Capabilities		
Digital Leadership	0.889	

Table 6. Model Fit

	Saturated Model	Estimated Model
SRMR	0.047	0.047
d_ULS	0.169	0.169
d_G	0.189	0.189
Chi-Square	266.365	266.365
NFI	0.912	0.912

It was also found that, in general, the parameters indicated by the Smart PLS model fit information were in good condition and could be accepted as a prerequisite for a fairly good model, with an NFI of 0.912 (Supriyadi, 2018).

For the questionnaire preparation, the researcher established operational definitions as follows:

a. Digital Leadership, according to the ISTE-A standard, is conceptualized as leadership that can inspire and lead the transformation of schools through technology, create and maintain a digital learning culture, support technology-based professional development, provide digital leadership and management, and facilitate and manage social, ethical, and legal aspects (Zhong, 2017, p. 36). With dimensions: Equity and Citizenship Advocate, Visionary Planner, Empowering Leader, System Designer, and Connected Leader.

b. Organizational Capability, Organizational capability is an intangible strategic asset that an organization can use to get the job done, execute its business strategy, and satisfy its customers. It is expected to benefit the improvement of Early Childhood Education organizational capabilities. With dimensions: (1) organization culture, (2) leadership performance, (3) strategic unity, (4) innovation, (5) agility, (6) talent, and (7) customer connectivity.

5. Discussion

In scrutinizing the findings of the research on Digital Leadership influencing the capabilities of Early Childhood Education (ECE) organizations at School Mover I in Bandung, a critical lens reveals significant insights that demand attention and strategic interventions. The robust evidence presented highlights both strengths and weaknesses in the implementation of digital leadership and organizational capabilities, prompting a reevaluation of current practices and the formulation of targeted strategies for improvement.

a. Equity and Citizenship Advocate Dimension

The surface-level observation of the Equity and Citizenship Advocate dimension may suggest commendable implementation. However, a closer examination of sub-indicator 3 reveals a paradox. The involvement of teachers in digital activities, while seemingly well-implemented, prompts a critical question: What is the depth and quality of this engagement? Experts emphasize not just involvement but meaningful participation, raising concerns about a potential superficial adherence to digital tools (Artacho, Martinez, Martin, Marin, & Garcia, 2020). This incongruity demands further investigation into the nature and impact of teachers' digital involvement on pedagogical practices.

b. Strategic Unity Dimension

The lower score in the sub-indicator involving rewards for teacher achievements underlines a critical gap in the organizational strategy. The discrepancy between the perceived importance of recognizing achievements and the lower emphasis on rewards raises questions about the efficacy of the reward system. This discrepancy, when juxtaposed against prevailing expert theories, challenges the conventional wisdom on the motivational aspects of reward systems. A deeper exploration is warranted to understand the intricacies of reward structures within the organizational framework.

5.1. Research's Weaknesses and Potential Research

The research's weakness lies in its limited generalizability, confining the findings to the specific context of School Mover I in Bandung. While the study offers valuable insights into this particular institution, the inability to extrapolate these findings to a broader educational spectrum weakens the study's external validity.

On the other hand, the reliance on self-reported data introduces a potential methodological flaw, as respondents may succumb to the pressures of social desirability (Kastorff, et al., 2022, p. 926). This self-report bias may skew the findings, presenting a rosier picture of digital leadership and organizational capabilities than the reality warrants. To mitigate this bias, future studies should incorporate objective measures and external observations to ensure a more accurate representation of the ground reality.

The research, while shedding light on the leadership dimension, neglects the crucial perspective of teachers. Exploring teachers' experiences and perceptions of digital leadership could unravel nuanced insights into the effectiveness and impact of leadership practices on the ground (Hamzah, Nasir, & Wahab, 2021, p. 219).

In addition, to enhance the depth of understanding, future research endeavors should encompass comparative studies across different regions or countries. Examining cultural nuances influencing the relationship between digital leadership and organizational capabilities will enrich the global discourse on educational leadership.

5.2. Call to Action

a. Digital Leadership Impact

Digital Leadership positively influencing Organizational Capability underscores its pivotal role in shaping the trajectory of Early Childhood Education. However, this finding serves as both a commendation and a call to action–an acknowledgment of the importance of digital leadership and an imperative to intensify investments in cultivating these leadership skills.

b. Strategic Focus Areas

The identification of Equity and Citizenship Advocate and Strategic Unity dimensions as potential weak links demands urgent attention. It is not sufficient to merely implement; there is an imperative need to delve into the intricacies of these dimensions, ensuring that implementation is not just a checkbox but a catalyst for transformative change.

c. Organizational Culture and Leadership Performance

The successful implementation of Organizational Culture and Leadership Performance dimensions unveils organizational strengths that should not be underestimated. However, this success should be leveraged strategically. A culture of continuous learning and leadership opportunities for teachers can become potent tools for further organizational enhancement.

The managerial implications of this research extend beyond a mere acknowledgment of findings. School administrators and policymakers must view these findings as a roadmap for strategic decision-making. Addressing the identified areas of improvement is not a luxury but a necessity for fostering a resilient and adaptive educational ecosystem (Alfionita et al., 2019, p. 854).

In conclusion, this critical examination of the research on Digital Leadership and Organizational Capabilities in Early Childhood Education unearths both commendable achievements and areas demanding urgent attention. The evidence presented serves as a clarion call for educators, administrators, and policymakers to embark on a journey of strategic recalibration, ensuring that the promise of digital leadership translates into tangible and transformative outcomes for Early Childhood Education organizations. This critical reflection serves not just as a scholarly discourse but as a manifesto for action – a commitment to elevating the standards of educational leadership in the digital age.

6. Conclusion

The conclusion of this research is as follows: 1) The description of Digital Leadership in ECE School Mover I Bandung City has an AVE value of 0.806, indicating that Digital Leadership has been applied to ECE School Mover I Bandung City with a percentage of 80.6% which means excellent; 2) The description of Organizational Capability in ECE School Mover I Bandung City has a value of 0.755, indicating that the organizational capability of ECE School Mover I Bandung City has a high value of 75.5%. This number indicates that the organizational capability is fair, so it can be developed in the future; 3) There is a significant influence on the implementation of digital leadership on the organizational capability of ECE School Mover I Bandung City. Digital leadership has a positive partial influence of 0.889 which means excellent, and the role of organizational capability is 0.790 which indicates that it is good and proper.

Limitation

There are some limitations in this research so the researcher can focus on a specific topic with no overlap to other topics. The limitations include:

a. The research focused on the Early Childhood Education organization, specifically, ECE School Mover I Bandung City.
b. The study is confined to teachers, educational staff, and parents of ECE School Mover I Bandung City.
c. This research is limited to exploring the influence of digital leadership on organizational capabilities within the ECE Organization School Mover I Bandung City.

Recommendation

The researcher proposes some recommendations through this research that can further the discussion regarding the topics. Here are some recommendations:

1. The organizational capabilities of the ECE School Mover I Bandung City can be realized through adaptive abilities in response to every change that occurs. Research findings suggest that the dimension of agility needs more attention in the process of enhancing organizational capabilities. Therefore, there is a need for the element of adaptability to change. The ECE institution must be able to adapt to various changes, including changes in educational curricula, the implementation of the latest technology, demands from parents and students, and shifts in socio-cultural values. The ability to adapt is crucial to ensure that the ECE institution remains relevant and effective in providing quality education for children amid the rapid developments of this era.

2. Digital leadership in enhancing the organizational capabilities of the ECE institution, School Mover I in Bandung City, can play an optimal role when all elements of the institution become digital literacy innovators. Being a digital literacy innovator is crucial because research findings emphasize the importance of equality, wherein teachers' involvement in activities utilizing digital tools should be continuously optimized. Therefore, the ECE School Mover I in Bandung City needs to optimize its role as a digital literacy innovators in enhancing organizational capabilities. By becoming digital literacy innovators, the ECE institution can create an environment that encourages teachers to develop creativity in utilizing technology. However, these efforts are not limited to the role of teachers alone. Every element of the institution, from management to administrative staff, needs to have a profound understanding of digital literacy to create an inclusive and progressive learning ecosystem. Through measured and collaborative steps, the ECE institution can establish educational standards that are equitable, enabling each individual to thrive optimally in this digital era.

3. ECE School Mover I in Bandung City can create a model of digital leadership to enhance its organizational capabilities, which can intricately outline the roles of each individual in the school, ensuring that each party has responsibilities and commitments in carrying out their respective tasks.

Acknowledgments

Conflict of Interest

The researcher declares that there are no conflicts of interest associated with the conducted study.

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