

# Institutional Resource Management and Parental Satisfaction in Early Childhood Education: Perspectives from Millennial and Gen Z Parents in Indonesia

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## ABSTRACT

The demographic shift toward Millennial and Generation Z parents has reshaped expectations for early childhood education (ECE), particularly regarding institutional resource management and service quality. This study examines the relationship between institutional resource management and parental satisfaction in ECE settings. A quantitative correlational design was employed with 150 parents in Surakarta, Indonesia, selected through purposive sampling. Data were collected using two Likert-scale instruments measuring institutional resource management (16 items) and parental satisfaction (12 items). Instrument validity was established through expert judgment, and reliability testing using Cronbach's alpha indicated satisfactory internal consistency. Data were analyzed using Pearson's correlation coefficient and coefficient of determination. The findings revealed a moderate, statistically significant positive relationship between institutional resource management and parental satisfaction ( $r = 0.56$ ,  $p < 0.01$ ). The coefficient of determination ( $R^2 = 0.31$ ) indicates that 31% of the variance in parental satisfaction is explained by institutional resource management. No significant differences were found between Millennial and Generation Z parents, suggesting convergent expectations regarding transparency, digital documentation, and administrative efficiency. The results highlight the importance of systematic and technology-supported resource management in enhancing parental satisfaction across generational groups. ECE institutions should prioritize managerial transparency, digital service optimization, and responsive administration to align with contemporary parental expectations. Future research should explore additional factors influencing satisfaction and extend analysis across broader educational contexts.

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## 1. INTRODUCTION

Indonesia is currently undergoing a significant demographic transition marked by the dominance of Millennial and Generation Z populations within the productive-age group (Abidin, 2023). According to projections by Statistics Indonesia (2025), the national population is expected to reach approximately 281.6 million, with a substantial proportion belonging to these two generational cohorts. This demographic shift has far-reaching implications across social sectors, including education, particularly early childhood education (ECE), which serves as a foundational stage for children's cognitive, social, and emotional development. As Millennials and Gen Z increasingly take on parental roles, ECE institutions must adapt their management practices to align with evolving parental expectations and service preferences.

Millennial parents, generally defined as individuals born between 1981 and 1996, are characterized by high technological engagement, collaborative orientations, and a preference for participatory decision-making (Barnes, 2020; Twenge, 2023). Generation Z parents, born between approximately 1997 and 2012, grew up in a wholly digital environment and tend to prioritize efficiency, instant access to information, flexibility, and responsiveness (Kristyowati, 2021; McDonald & Deckman, 2023). These generational characteristics shape parenting approaches and influence how parents evaluate educational services. Prior studies indicate that Millennial and Gen Z parents expect transparent communication, technology-based documentation of children's development, administrative efficiency, and responsive two-way interaction with educational institutions (Andrika et al., 2024; Mahardika, 2023). Consequently, ECE institutions are increasingly evaluated not only on pedagogical quality but also on their managerial and organizational performance.

Within this context, two key constructs are central to understanding service quality in ECE: institutional resource management (IRM) and parental satisfaction. Institutional resource management refers to the systematic planning, utilization, and evaluation of organizational resources, including human resources, facilities and infrastructure, information technology, administrative systems, and communication mechanisms, to ensure effective and efficient service delivery (Anggriawan, 2020; Reyes & Gallardo, 2025). In educational settings, IRM functions as a managerial foundation that supports instructional processes, stakeholder communication, and institutional sustainability. Parental satisfaction, on the other hand, is conceptualized as parents' overall evaluative judgment regarding the extent to which educational services meet or exceed their expectations in terms of service quality, reliability, communication, and institutional responsiveness (Al Zaher & Dashash, 2021; Rivas et al., 2023). In ECE, parental satisfaction is closely linked to trust, parental involvement, and long-term institutional commitment.

A growing body of literature has demonstrated a positive relationship between effective institutional management and parental satisfaction in educational institutions (Firman & Ali, 2023; Nasucha et al., 2021). Well-managed institutions tend to exhibit clearer communication channels, more consistent documentation practices, and higher service reliability, which positively influence parents' perceptions. However, despite these findings, several limitations remain evident in existing studies. First, most prior research has examined parental satisfaction in general terms, without explicitly considering generational differences among parents. As Millennial and Gen Z parents exhibit distinct service expectations compared to earlier generations, findings derived from mixed or unspecified parent populations may no longer fully capture current realities.

Second, previous studies in the Indonesian ECE context have predominantly employed descriptive or qualitative approaches, focusing on perceptions, experiences, or institutional challenges (Fitriyani et al., 2024; Rasmani et al., 2020). While such approaches provide valuable contextual insights, they offer limited empirical evidence regarding the strength and direction of relationships between managerial variables and parental outcomes. Quantitative correlational evidence examining the relationship between institutional resource management and parental satisfaction, particularly among Millennial and Gen Z parents, remains scarce. This gap is increasingly problematic given that these generations now represent the primary users and evaluators of ECE services.

The urgency of addressing this gap is further reinforced by persistent managerial challenges faced by many ECE institutions in Indonesia. Studies have documented limitations in human resource capacity, particularly in digital competence among educators and administrative staff (In'ami et al., 2022; Winata et al., 2022), inconsistencies in documenting children's developmental progress (De Gomes & Sidi, 2022), and communication systems that have not fully adapted to technology-driven parental lifestyles (Qomariah et al., 2022). These constraints may undermine parental satisfaction and weaken institutional credibility, especially among parents who expect efficiency, transparency, and digital accessibility.

From a policy perspective, these issues are highly relevant to ongoing educational reforms in Indonesia. The implementation of the Merdeka Curriculum emphasizes service quality improvement, transparency, technology integration, and active parental involvement as strategic components of sustainable ECE provision (Anjani & Mashudi, 2024; Sukmana & Mulyanti, 2023). Parental engagement is increasingly recognized as a key indicator of educational effectiveness and institutional accountability (Fayzha, 2023; Khoirudin, 2024). However, policy aspirations must be supported by empirical evidence that clarifies which managerial factors most strongly influence parental satisfaction.

Based on these considerations, a clear research problem emerges. There is limited quantitative evidence explaining the relationship between institutional resource management and parental satisfaction among Millennial and Generation Z parents in ECE institutions. Addressing this problem is essential for developing management strategies that are responsive to contemporary parental expectations and aligned with policy demands.

Accordingly, this study aims to examine the relationship between institutional resource management and parental satisfaction among Millennial and Gen Z parents in early childhood education institutions. Specifically, the study seeks to answer the following research questions: (1) What is the level of institutional resource management in ECE institutions attended by children of Millennial and Gen Z parents? (2) What is the level of parental satisfaction with ECE services? and (3) Is there a significant relationship between institutional resource management and parental satisfaction? By addressing these questions, this study aims to contribute to the literature on ECE management and provide evidence-based recommendations for institutional leaders to strengthen managerial practices and meet the expectations of a new generation of parents.

## 2. METHODS

This study employed a quantitative correlational research design to examine the relationship between institutional resource management and parental satisfaction among Millennial and Generation Z parents in early childhood education (ECE) institutions. A correlational approach was selected to identify the direction and strength of the association between variables without manipulating the research setting, which is appropriate for examining naturally occurring relationships in educational management contexts.

The research participants were parents whose children were enrolled in ECE institutions in Surakarta City, Indonesia. A total of 150 respondents were selected using purposive sampling. This sampling technique was chosen to ensure that participants met specific characteristics relevant to the research objectives, particularly generational status and direct involvement as ECE service users. The inclusion criteria were as follows: (1) parents belonging to the Millennial (born 1981–1996) or Generation Z (born 1997–2012) cohort, and (2) having at least one child currently attending an ECE institution. Generational status was verified through self-reported birth year information provided in the demographic section of the questionnaire. Purposive sampling was considered appropriate because the study focused on a specific parent population whose generational characteristics were central to the research problem.

The study involved two variables: institutional resource management, as the independent variable (X), and parental satisfaction, as the dependent variable (Y). Institutional resource management was operationally defined as the effectiveness of ECE institutions in managing human resources, communication systems, digital documentation, and administrative processes to support service delivery

(Nur Efendi & Muh Ibnu Sholeh, 2023; Safitri et al., 2025). Parental satisfaction was defined as parents' evaluative perceptions of ECE services, including communication quality, responsiveness, and institutional engagement (Ibrohim et al., 2024; Kosasih et al., 2023).

Data were collected using two Likert scale questionnaires ranging from 1 (strongly disagree) to 4 (strongly agree). The institutional resource management instrument comprises 16 items across four dimensions, while the parental satisfaction instrument consists of 12 items, as shown in Table 1. The development of the instrument is based on an extensive review of relevant literature and adapted to the ECE context. The validity of the content was evaluated by three experts, consisting of two senior lecturers of early childhood management and one practitioner with managerial experience in an ECE institution. Their feedback focuses on item clarity, construct relevance, and contextual appropriateness. Before complete data collection, a trial was conducted with 30 parents who met the inclusion criteria but were not included in the main sample. Trial results are used to refine the wording of items and ensure readability.

**Table 1.** Research Questionnaire Indicators

No	Variable	Indicator	Item
1	Institutional resource management	Communication Management Adopted from School–Family Partnerships (Epstein, 2018; Hoover-Dempsey & Sandler, 1997)	4
		Human Resource Capacity Adopted from Human Capital Theory (Becker 1993; Darling-Hammond, 2000)	4
		Digital Documentation & Transparency Adopted from Transparency & Accountability in Education UNESCO (2017); Plowman & Stephen (2005)	4
		Administrative Efficiency Adopted from New Public Management (HOOD 1991; Kotler & Keller, 2016)	4
2	Parental satisfaction	Satisfaction with Communication Adopted from Expectancy Disconfirmation Theory (EDT) (Oliver, 1980; Tschannen-Moran, 2014)	4
		Satisfaction with Documentation Adopted from SERVQUAL Model (Tangibility, Reliability) Parasuraman, Zeithaml & Berry (1988); Sheridan et al. (2010)	4
		Satisfaction with Involvement Opportunities Adopted from Parent Involvement Framework, Epstein (2001); Hoover-Dempsey et al. (2005)	3
		Overall Trust & Loyalty Adopted from Trust and Commitment Theory, Morgan & Hunt (1994); Zeithaml, Berry & Parasuraman (1996)	3
<b>Total</b>			<b>30</b>

Construct validity was examined using Pearson's product-moment correlation, while reliability was assessed using Cronbach's Alpha coefficient, shown in Table 2. All items showed a significant correlation ( $p < 0.05$ ), and the reliability coefficient for each scale exceeded 0.70, indicating satisfactory internal consistency. Statistical analysis was performed using SPSS version 27. Data filtering includes normality testing using the Kolmogorov-Smirnov test and linearity analysis through the linearity function test. Pearson's correlation analysis was conducted through Analyze > Correlate > bivariate, with two-way significance testing and a 95% confidence level ( $\alpha = 0.05$ ). The Independent-Sample t-Test (Analyze > Compare Means > Independent-Samples T Test) was used to test the difference in parental satisfaction between Millennial and Generation Z parents.

**Table 2.** Reliability Result

Number of Questions	Variable	Reliability Limit	Alpha Cronbach	Description
16	Institutional resource management	0.70	0.912	Reliable
14	Parental satisfaction	0.70	0.819	Reliable

Data collection was conducted online using Google Forms, distributed through ECE institutions in Surakarta City. Before participation, respondents received an information sheet outlining the research objectives, the voluntary nature of their involvement, the guarantee of anonymity, and the confidentiality of their data. Ethical approval for this study was granted by the institutional research ethics committee of the authors' affiliated university. All procedures complied with institutional ethical standards, and informed consent was obtained electronically from all participants before data submission.

### 3. FINDINGS AND DISCUSSION

#### 3.1 Findings

##### 3.1.1 Respondent Characteristics

This study involved 150 respondents, consisting of 82 Millennial parents (54.7%) and 68 Generation Z parents (45.3%). The majority of respondents were female (78%) and ranged in age from 24 to 42 years. Regarding the duration of interaction with early childhood education (ECE) institutions, 60% of respondents had been parents for more than one year, while 40% had interacted for one year or less.

**Table 3.** Distribution of Respondent Characteristics

Characteristics	Category	Number (n)	Percentage (%)
Generation	Millennials	82	55
	Gen Z	68	45
Gender	Female	117	78
	Male	33	22
Aged	24-30 Years	52	35
	31-36 Years	61	40
	37-42 Years	37	25
Long-time parent representative	≥ 1 Year	90	60
	≤ 1 Year	60	40

Based on Table 3, the sample consists of a predominantly Millennial (55%) and female-dominated (78%) respondent base, with most parents (60%) having maintained engagement with ECE institutions for over one year. This demographic composition suggests that mothers remain the primary stakeholders in ECE communication and decision-making. At the same time, the age distribution (concentrated in the 31-36 age range at 40%) aligns with typical parenting years for both generational cohorts. The majority's long-term institutional relationship enhances the reliability of their satisfaction assessments, as these are grounded in extended experience rather than initial impressions.

##### 3.1.2 Descriptive Statistics

Descriptive analysis was conducted to provide an overview of respondents' perceptions regarding institutional resource management and parental satisfaction before examining relationships between variables. This step is essential to understand the general tendency and variability of responses within the study sample.

**Table 4.** Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Institutional Resource Management (IRM)	150	32	64	54.07	6.573
Parental Satisfaction (PS)	150	27	48	38.45	4.793
Valid N (listwise)	150				

As shown in Table 4, both variables demonstrate means above the midpoint (IRM: 54.07/64; PS: 38.45/48), indicating generally positive perceptions of resource management and satisfaction levels. The standard deviations (IRM: 6.573; PS: 4.793) reveal moderate variability, with parental satisfaction showing more homogeneous responses. This suggests that while resource management practices vary across institutions, satisfaction outcomes tend to cluster around positive evaluations. The relatively narrow ranges indicate the absence of extreme outliers, supporting the suitability of the data for parametric testing.

### 3.1.3 Assumption Testing

Before conducting inferential statistical analyses, assumption testing was performed to ensure that the data met the requirements for Pearson correlation and linear regression analysis. Meeting these assumptions is crucial to guarantee the validity and reliability of the statistical results. Normality testing using the Kolmogorov–Smirnov test indicated that both the IRM and PS variables were normally distributed ( $p > 0.05$ ). Linearity testing confirmed a linear relationship between institutional resource management and parental satisfaction, as evidenced by significant linearity values ( $p < 0.05$ ) and non-significant deviation from linearity ( $p > 0.05$ ). Homoscedasticity was examined through analysis of standardized residual scatterplots, which showed a random distribution pattern without systematic clustering. These results indicate that the assumptions of normality, linearity, and homoscedasticity were satisfied, allowing for valid correlation and regression analyses.

### 3.1.4 Correlation Analysis

Correlation analysis was conducted to examine the strength and direction of the relationship between institutional resource management and parental satisfaction. This analysis provides initial evidence regarding whether improvements in management practices are associated with changes in parental satisfaction levels.

**Table 5.** Correlations Pearson Test

Correlations			
		Institutional Resource Management (IRM)	Parental Satisfaction (PS)
Institutional Resource Management (IRM)	Pearson Correlation	1	0.553
	Sig. (2-tailed)		0.000
	N	150	150
Parental Satisfaction (PS)	Pearson Correlation	0.553	1
	Sig. (2-tailed)	0.000	
	N	150	150

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 5 presents the correlation coefficient ( $r = 0.553$ ,  $p < 0.01$ ), indicating a moderate-to-strong positive relationship, which suggests that enhanced institutional resource management is associated with higher parental satisfaction. According to Cohen's (1988) effect size benchmarks, this correlation represents a medium-to-large effect, suggesting practical significance beyond statistical significance. The coefficient of determination ( $r^2 = 0.306$ ) indicates that approximately 31% of the variance in satisfaction is shared with resource management quality. This moderate explained variance is typical

in educational satisfaction research, where multiple contextual factors operate simultaneously (e.g., socioeconomic status, parental expectations, child temperament).

### 3.1.5 Regression Analysis

To further examine the predictive contribution of institutional resource management to parental satisfaction, a simple linear regression analysis was conducted. This analysis enables the estimation of how much variance in parental satisfaction can be attributed to institutional resource management.

**Table 6.** Simple Linear Regression Test

Variable	Model 1	Model 2
<b>Main Variable</b>		
Institutional Resource Management (IRM)	< 0.001 (6.123)	< 0.001 (6.123)
Parental Satisfaction (PS)	< 0.001 (8.070)	< 0.001 (8.070)
<b>Constanta</b>	16.658	16.658
N	150	150
R	0.553	0.553
R <sup>2</sup>	0.306	0.306
ΔR <sup>2</sup>	0.301	0.301
*Sig. < 0,05		

The regression results in Table 6 show that Institutional Resource Management has a significant positive effect on Parental Satisfaction ( $p < 0.001$ ). The coefficient of determination ( $R^2 = 0.306$ ) indicates that approximately 30.6% of the variance in parental satisfaction can be explained by institutional resource management. This finding highlights the substantive role of managerial practices in shaping parental satisfaction while also suggesting that other factors outside the model contribute to satisfaction outcomes.

## 3.2 Discussion

This study examined the relationship between Institutional Resource Management (IRM) and Parental Satisfaction (PS) in early childhood education (ECE) services, with a particular focus on parents from the Millennial and Generation Z generations. The findings from descriptive analysis, correlation, and regression tests demonstrate that institutional resource management significantly contributes to parental satisfaction, aligning with the research objective of testing how resource management quality influences parental satisfaction within the context of generational differences. The correlation coefficient ( $r = 0.553$ ;  $p < 0.01$ ) indicates a strong positive relationship, whereby enhanced resource management corresponds with elevated satisfaction levels. The regression analysis reveals that IRM accounts for 30.6% of the variance in PS, a substantial proportion in social research, given that satisfaction is typically influenced by multiple external factors, including family economic background, school location, and local education policies.

### 3.2.1 Theoretical Interpretation and Alignment with Established Frameworks

From a theoretical perspective, these results align with theories of educational management and customer satisfaction. Optimal resource management in ECE services encompasses comprehensive planning, organization, implementation, and evaluation that responds to user needs (Majeed, 2020; Omotunde et al., 2024; Sun et al., 2023). The current findings both confirm and extend several established theoretical frameworks, offering more profound insight into the mechanisms underlying the IRM-PS relationship.

#### a. SERVQUAL Framework and Service Quality Dimensions

The positive correlation between resource management and satisfaction provides strong empirical support for Park et al (2021) SERVQUAL model, which posits that service quality, comprising tangibles, reliability, responsiveness, assurance, and empathy, directly influences customer satisfaction. Within the ECE context, IRM operationalizes these dimensions in specific ways. Effective communication between institutions and parents, identified as one of the highest-rated indicators among respondents, embodies the responsiveness and empathy dimensions. Facility management and resource availability manifest the tangibles and reliability dimensions, while teacher competency development exemplifies assurance. This multidimensional alignment suggests that comprehensive resource management yields higher satisfaction precisely because it addresses multiple quality dimensions simultaneously rather than in isolation.

A vital nuance emerges in the finding that communication scored highest, while digital documentation systems received the lowest scores. This pattern reveals that Millennial and Generation Z parents, despite their technological fluency, rapid information processing capabilities, and preference for active involvement in their children's education, continue to prioritize interpersonal responsiveness over technological sophistication when trust-building remains paramount. This finding resonates with Zeithaml's (1988) conceptualization of "perceived quality," wherein subjective service interactions may supersede objective technological features in emotionally charged service domains such as early childhood development.

#### b. Expectancy Disconfirmation Theory

Bucadon (2025) suggests that Expectancy Disconfirmation Theory (EDT) offers a complementary explanatory framework. According to EDT, satisfaction emerges when perceived performance meets or exceeds pre-existing expectations. Millennial and Generation Z parents, having been socialized within transparency-oriented and participatory cultures, plausibly maintain elevated expectations regarding ECE communication frequency, accessibility, and personalization. These generational characteristics render resource management that fulfills such expectations crucial to satisfaction outcomes. The robust correlation coefficient ( $r = 0.553$ ) suggests that institutions successfully meeting these expectations through comprehensive resource management achieve commensurately higher satisfaction levels. Conversely, the substantial unexplained variance (69.4%) indicates that satisfaction also depends upon individual expectation baselines shaped by diverse factors, including prior ECE experiences, socioeconomic status, and cultural capital.

The digital documentation gap may represent a particularly salient instance of expectancy disconfirmation. Parents anticipate seamless digital integration consistent with their generational norms, yet many ECE institutions demonstrate implementation deficiencies. Critically, dissatisfaction may stem not from the absence of technology, but rather from poorly executed digital systems that generate negative disconfirmation by failing to meet high baseline expectations. This interpretation receives theoretical support from the Technology Acceptance Model (TAM) principles (Zaineldeen et al., 2020), which suggest that perceived usefulness and ease of use are fundamental determinants of technology adoption. Digital documentation systems that are cumbersome, receive infrequent updates, or lack mobile optimization fail to meet the expectations of the current generation, despite their apparent presence.

#### c. Epstein's Framework of School-Family-Community Partnerships

Epstein's (Epstein, 2018) typology of six involvement types, parenting, communicating, volunteering, learning at home, decision-making, and collaborating with the community, further illuminates the mechanisms through which IRM operates. Effective resource management operationalizes Epstein's "communicating" and "parenting" dimensions through practices such as regular updates that foster transparency and workshops that support parental capacity-building. The elevated communication scores observed in this study reflect the successful implementation of

Epstein's Type 2 involvement (communicating), which establishes the foundation for sustained trust and meaningful engagement.

Nevertheless, Epstein's framework also reveals potential deficiencies. The comparatively lower digital documentation scores suggest insufficient utilization of Type 4 involvement (learning at home), wherein technology could facilitate continuity between school and home environments through shared documentation, developmental progress portfolios, and accessible learning resources. Future IRM strategies would benefit from integrating all six involvement types comprehensively, recognizing that satisfaction derives from the quality of holistic partnership rather than from isolated communication frequency alone.

### 3.2.2 Comparison with Previous Literature

#### a. Alignment with National Studies

The present findings demonstrate consistency with prior Indonesian research. Mukaromah (Mukaromah, 2021) and Siti Aisyah (2020) previously emphasized that effective resource management enhances parental trust and loyalty within Indonesian ECE contexts. Similarly, Marlisa (2022) confirmed that clear communication and information transparency have a positive influence on parental satisfaction in ECE institutions, directly corroborating the current finding that communication represents the highest-rated IRM indicator. However, Priyanti (2023) documented that inadequate technology adoption can diminish parental satisfaction even when institutional management otherwise demonstrates relative strength. This observation aligns closely with the present findings, in which the utilization of digital documentation emerges as an area requiring improvement, despite otherwise favorable assessments of resource management.

#### b. Integration with International Literature

These national patterns align with international research that documents similar phenomena across diverse cultural contexts. Baeck's (2010) Swedish investigation found that the quality of school-parent communication significantly predicted satisfaction, paralleling the IRM-PS correlation observed in this study. Hayakawa's (2013) longitudinal U.S. study confirmed that parental engagement facilitated by effective school practices enhances both satisfaction and child outcomes. Desforges and Abouchaar's (2003) U.K. meta-analysis established that "at-home good parenting" supported by a robust school communication infrastructure promotes positive educational outcomes, thereby validating satisfaction as a potential mediating variable within the engagement-outcome pathway.

Within Asian contexts, specifically, Liu and Leighton's (2021) Chinese study revealed parallel patterns, wherein ECE institutions that emphasized transparent communication and resource accessibility achieved elevated parental satisfaction, particularly among younger, urban parents with demographic characteristics comparable to those of the present Millennial-Generation Z sample. These cross-cultural consistencies suggest that fundamental human needs for communication, transparency, and competent service delivery may transcend cultural boundaries, lending empirical support to universalist theoretical propositions such as SERVQUAL's cross-cultural applicability (Binoy Mathew, Mohan Cherian, 2025).

#### c. Significant contextual variations nevertheless emerge

Addi-Racah and Arviv-Elyashiv's (2008) Israeli study found that parental satisfaction correlated more strongly with perceived child outcomes than with institutional processes, which contrasts with the current emphasis on resource management processes. This divergence may reflect underlying cultural differences. Collectivist Indonesian culture may prioritize relational harmony and institutional trust, whereas more individualist cultural orientations foreground instrumental achievement in children. Liu's (2024) Finnish research similarly highlighted socioeconomic stratification in satisfaction determinants, with affluent parents prioritizing curriculum innovation while economically disadvantaged parents valued fundamental communication reliability. Although the present study did

not stratify findings by socioeconomic status, this dimension represents a valuable direction for future investigation.

1) *Elaborating on the Digital Documentation Paradox*

The counterintuitive finding that digital documentation received the lowest scores despite the sample's generational technological fluency merits careful examination. Multiple interconnected factors may account for this apparent paradox.

2) *Implementation Maturity and Technical Quality*

Diverging from Chen's (2023) U.S. study, which reported substantial parental satisfaction with digital communication platforms such as ClassDojo, Indonesian ECE institutions may occupy earlier phases of technology adoption characterized by technical difficulties, inconsistent usage patterns, and insufficient staff training. These implementation challenges diminish perceived usefulness according to TAM principles (Zaineldeen et al., 2020), thereby generating frustration rather than satisfaction. The contrast with more mature international implementations underscores that successful technology adoption requires not merely availability but also comprehensive training, user-friendly interface design, and reliable functionality.

3) *Service Context and Emotional Intensity*

Lovelock and Wirtz's (2011) service encounter theory posits that high-contact services such as ECE necessitate "high-touch" interpersonal interactions alongside "high-tech" solutions. Parents may perceive digital documentation as insufficient for the emotionally intensive domain of early childhood development, wherein relational trust building fundamentally requires human connection. Turkle's (2019) critique of technology's relational costs provides additional explanatory power. Parents may resist extensive digitization because early childhood development inherently demands empathetic, responsive human interaction that technology cannot adequately replicate. Digital tools should therefore augment, rather than supplant, face-to-face communication, consistent with the "blended communication" model for educational services (Mthanti & Msiza, 2023).

4) *Expectation-Performance Gaps*

As previously discussed, digitally native parents tend to have higher expectations for the quality of technology integration. When digital documentation systems underperform relative to these high baselines due to deficient interface design, infrequent content updates, limited mobile accessibility, or inadequate informational depth, they generate negative disconfirmation that may actually reduce satisfaction below the levels that would prevail in the absence of digital systems entirely. This pattern suggests that partial or inadequately executed digitalization may prove counterproductive, a phenomenon observed across various service industries undergoing digital transformation.

The findings of this study offer practical guidance for multiple stakeholders, while also highlighting essential limitations and informing future research directions. For early childhood education (ECE) managers, the results underscore the need to strengthen institutional resource management by prioritizing high-quality, empathetic communication, enhancing educator competencies, and deploying user-friendly technology. Communication strategies should combine interpersonal engagement with structured channels, such as regular parent-teacher conferences and accessible digital platforms, ensuring that technology complements rather than replaces face-to-face interaction. Phased technology adoption and targeted staff training are essential to meet the expectations of Millennial and Generation Z parents while maintaining relational quality.

For policymakers, the findings underscore the importance of institutional support mechanisms that align with contemporary parental characteristics and needs. These include funding leadership capacity-building programs, investing in digital infrastructure, and establishing quality assurance frameworks that emphasize family-school partnerships. Such measures can help ECE institutions respond more effectively to evolving social and technological demands. Academically, the study contributes to the development of adaptive management models that integrate institutional resource management with generational perspectives in ECE contexts.

Several limitations qualify these conclusions. The coefficient of determination indicates that a substantial proportion of the variance in parental satisfaction remains unexplained, suggesting the influence of additional factors, such as curriculum quality, teacher–child interactions, costs, and institutional accessibility. The cross-sectional design limits causal inference, and reliance on parental self-reports introduces potential bias. Moreover, the regional focus and predominantly female sample restrict generalizability, while the measurement instruments may not capture all relevant dimensions of resource management and satisfaction.

Future research should address these limitations by employing longitudinal designs to establish temporal relationships, conducting comparative studies across various institutional and socioeconomic contexts, and implementing intervention-based research to test management and technology strategies. Mixed-methods and multi-informant approaches would provide deeper insight into parental expectations, particularly regarding digital documentation, and enhance the robustness and applicability of findings for evidence-based ECE service development.

#### 4. CONCLUSION

This investigation makes three distinct contributions. Theoretically, it extends SERVQUAL, EDT, and Epstein's frameworks into Indonesian ECE contexts, revealing that the "digital native" hypothesis oversimplifies generational preferences. Specifically, Millennial and Gen Z parents prioritize interpersonal responsiveness over technological sophistication in trust-intensive early childhood services, challenging assumptions in the educational technology literature. The finding that communication quality ( $r = 0.553$ ) predicts 30.6% of the variance in satisfaction provides empirical support for service quality theory, while documenting the "digital documentation paradox," wherein poorly implemented technology generates negative disconfirmation despite generational technological fluency. Practically, this research demonstrates that ECE institutions can enhance parental satisfaction through specific, evidence-based strategies rather than generalized quality improvements. For policy, the findings establish that adequate support for millennial and Gen Z parent engagement requires targeted investments in three areas rather than broad resource allocations.

Based on these contributions, specific recommendations emerge. ECE managers should (1) implement weekly communication protocols including proactive developmental updates via parents' preferred channels (phone calls for complex issues, messaging apps for routine updates), (2) establish quarterly parent-teacher conferences with structured feedback forms to capture satisfaction drivers systematically, and (3) pilot digital documentation systems with 20-30 volunteer parents for 3-6 months before institution-wide adoption, using feedback to refine usability before scaling. Continuous professional development should dedicate a minimum of 40% of training hours to parent communication skills alongside pedagogical content. Policymakers should (1) allocate dedicated funding streams for ECE leadership training specifically addressing generational parent engagement, with performance metrics tied to documented parent satisfaction improvements, (2) provide technology adoption grants requiring evidence of pilot-testing with parent user groups and minimum 70% satisfaction scores before full disbursement, and (3) mandate biannual institutional self-assessments using validated parent satisfaction instruments with results published for parental access, creating accountability mechanisms aligned with Epstein's partnership framework. These specific interventions, grounded in the study's empirical findings and theoretical integration with national and international literature, provide actionable pathways for enhancing ECE service quality responsive to contemporary parental expectations. Future research should employ longitudinal and intervention designs to evaluate the effectiveness of these specific recommendations, generating causal evidence for evidence-based ECE management practices.

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