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Social Media as a Tool for Transforming Childhood Learning Mechanisms in Edupreneurship

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ABSTRACT

This paper delves into the intricate relationship between social media and childhood learning mechanisms for children. Despite the growing body of research on learners acceptance of e-learning systems via childhood program platforms, a considerable gap remains in understanding the determinants that shape the acceptance of e-learning facilitated through social media applications. **Addressing this gap,** our study undertakes an exploration of the impact of social media practices, specifically knowledge sharing, social media features, motivation, and uses, on children embrace of e-learning systems. To accomplish this, we extend the well-established Technology Acceptance Model (TAM) to incorporate these determinants. A comprehensive survey was conducted involving 355 children's. These students participated through questionnaire surveys, providing essential empirical data. Employing the robust SmartPLS technique, meticulously analyzed the extended model. **The results** of empirical data analysis demonstrate that social media practices exert a significant and positive influence on Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) related to Childhood Learning Mechanisms. Crucially, our **findings** underscore the pivotal role of both PU and PEOU in influencing the acceptance of e-learning systems. In essence, this paper not only sheds light on the transformative potential of social media practices in shaping the acceptance of e-learning systems but also **contributes** to the existing discourse by deepening our understanding of the interplay between social media, TAM determinants, and e-learning acceptance in childhood programs.

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1. INTRODUCTION

The advent of the second generation of web-based communities has ushered in the widespread adoption of Social Networking Sites (SNSs) [1], fostering enhanced collaboration and sharing among individuals through diverse applications such as "blogs", "podcasts", and "feeds" [2]. In the realm of education, these so-

cial networks offer a unique avenue for instructors to cultivate a sense of community among learners, catalyzing personalized communication that facilitates the construction of novel knowledge [3, 4]. Notably, prior investigations have indicated the potential of SNSs for educational purposes, exemplified by platforms like "Ning in Education", which serve as innovative technological tools in distance education, facilitating the delivery of seminar courses [5]. These platforms encompass functionalities encompassing online course creation, learner registration, and evaluation activity monitoring, catering to the diverse needs of both learners and educators [6, 7].

The evolution of e-learning, proliferating across the digital landscape, has engendered a versatile and portable means for learners to acquire foundational knowledge from an array of sources [8]. In recent years, childhood education has undergone a digital transformation, with interactive learning tools, gamified education models, and AI-driven personalized learning experiences becoming integral to modern pedagogy [1]. Moreover, educational frameworks such as UNESCO Education 2030 Agenda emphasize the need for digital literacy, media fluency, and early technology adoption in childhood learning [9, 10]. Social media platforms, with their inherently collaborative and interactive nature, align with these trends by fostering engagement, knowledge sharing, and adaptive learning experiences [11, 12]. This study, therefore, contributes to the ongoing discourse on technology-driven educational methodologies, positioning social media as a key enabler in supporting cognitive, social, and motivational learning mechanisms for children.

Furthermore, these platforms empower students to engage in real-time interactions with teachers and peers, thereby augmenting the educational experience [13]. The scholarly landscape has witnessed a surge in research scrutinizing learners acceptance of e-learning systems within the context of educational platforms in Childhood Learning Mechanisms [14, 15]. Paradoxically, a gap persists in comprehending the determinants that underlie the acceptance of e-learning through the conduit of social media applications within Childhood Learning Mechanisms. Several studies have explored social media role in higher education [16], but limited research has examined its impact on early childhood learning frameworks. While [17] highlight the potential of digital media in early cognitive development, they do not specifically assess social media role in fostering e-learning adoption. Similarly, [18] discuss the Technology Acceptance Model (TAM) in online learning environments, yet their study focuses primarily on adolescents and university students, leaving a critical research gap in understanding how TAM determinants apply to younger learners. Addressing this gap, our study extends the TAM framework by integrating Social Media Features (SMF), Motivation and Uses (MU), Knowledge Sharing (KS), and Parental or Educational Influence (PEI) to investigate their collective impact on childhood learning mechanisms [19]. This approach contributes novel empirical insights that bridge the existing knowledge void regarding social media educational influence on early learners.

Unlike previous studies that primarily examine social media role in higher education e-learning adoption, this study introduces an extended TAM incorporating Social Media Features (SMF), Motivation and Uses (MU), Knowledge Sharing (KS), and Parental or Educational Influence (PEI) within childhood learning mechanisms. By utilizing a SmartPLS-based quantitative approach, this research offers a novel empirical framework that uncovers the intricate interplay between these variables, thereby advancing the theoretical and practical understanding of how social media fosters e-learning acceptance in early childhood education.

This study ventures beyond the aforementioned lacuna by delving into the intricate interplay between social media practices and the acceptance of e-learning systems [20]. Specifically, our investigation seeks to unravel the impact of multifaceted social media practices, encompassing knowledge sharing, the distinctive attributes of social media, and motivational factors, on students willingness to embrace e-learning systems [21]. Our analytical framework extends the well-established TAM, embedding these pivotal determinants into its theoretical structure [22].

Against this backdrop, we engage in a comprehensive inquiry involving a cohort of 355 childrens in Childhood Learning Mechanisms with a childhood program focus. Through the deployment of meticulously designed questionnaire surveys, we gather rich empirical data to underpin our exploration. Employing the robust and sophisticated methodology of partial least squares-structural equation modeling (PLS-SEM), we subject our extended model to rigorous analysis [23].

Our preliminary data analysis reveals compelling insights. The empirical evidence underscores the substantial and affirmative influence wielded by social media practices, which encompass knowledge sharing, the unique attributes of social media platforms, and motivational aspects [24]. These practices profoundly impact students perceptions of the utility and ease of use associated with e-learning systems. Significantly, our findings also highlight the pivotal role played by Perceived Usefulness (PU) and Perceived Ease of Use (PEOU)

in shaping the acceptance of e-learning systems [25].

In essence, this study endeavors to illuminate the pivotal role played by social media practices in shaping the landscape of e-learning acceptance [26]. By elucidating the intricate connections that bind social media, TAM determinants, and e-learning acceptance, our research contributes to a deeper and more nuanced understanding of the dynamic interplay between technological tools, sociocultural contexts, and the educational landscape within childhood programs [13].

In this research, Section 1. presents a thorough analysis of the research background by addressing the emergence of social networking sites and their role in reshaping educational paradigms. Section 2. delineates the research hypothesis, which significantly influences students acceptance of e-learning systems within childhood programs. Building upon these foundations, Section 3. expounds upon the research methodology employed. Employing the robust and sophisticated methodology of TAM, Section 4. presents the results and discussion, illuminating the substantial and affirmative influence wielded by social media practices on Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) of childhood learning mechanism. Finally, Section 6. concludes this study by summarizing its key insights, emphasizing the constructive role of social media practices in shaping the acceptance of e-learning systems within the context of childhood programs.

2. HYPOTHESES DEVELOPMENT AND THEORETICAL MODEL

Aim to investigate the impact of social media usage on childhood learning mechanisms while considering the roles of parental or educational influence and types of social media. Based on the established theoretical model, formulated the following adjusted hypotheses:

2.1. Social Media Features (SMF)

The distinctive features of social media platforms have profound implications for e-learning acceptance and childhood learning mechanisms. Platforms like ”Facebook”, ”Twitter”, and ”YouTube” have become integral to students daily lives, influencing their attitudes and academic performance [27, 28]. Previous research has shown that students perceive social media as a space for informal learning and knowledge exchange, indicating its potential to positively impact both PU and PEOU [29]. Therefore, investigating the relationship between social media features and childhood learning mechanisms offers valuable insights into the multifaceted dynamics of technology-mediated education [30].

H1a: SMF positively affect the PEOU of childhood learning mechanisms.
H1b: SMF positively affect the PU of childhood learning mechanisms.

2.2. Motivation and Uses (MU)

Motivation and usage (MU) play a fundamental role in shaping learners attitudes and adoption of e-learning systems. Research indicates that learners self-motivation and psychosocial needs significantly influence their intentions to adopt and use technology for learning purposes [31, 32]. The fluidity of social media interactions facilitates immediate feedback and support, which can further contribute to learners self-efficacy and motivation [33]. By examining the interplay between motivation and usage, this research aims to illuminate the role of intrinsic motivation in shaping learners acceptance of e-learning systems within childhood programs.

H2a: MU positively affect the PEOU of childhood learning mechanisms.
H2b: MU positively affect the PU of childhood learning mechanisms.

2.3. Knowledge Sharing (KS)

Previous research has demonstrated that knowledge sharing positively influences the PU of e-learning systems [34, 35]. Collaborative learning environments fostered by social media platforms encourage learners to actively engage in sharing insights, which in turn enhances their understanding of course materials [36]. In the context of childhood programs, fostering a culture of knowledge sharing through social media platforms is expected to positively impact the perceived utility and ease of use of e-learning systems.

H3a: KS positively affects the PEOU of childhood learning mechanisms.
H3b: KS positively affects the PU of childhood learning mechanisms.

2.4. Parental or Educational Influence (PEI)

Parental support and educational guidance have been shown to impact learners attitudes and technology adoption decisions [37]. Parents and educators play a pivotal role in shaping children perceptions of

technology educational value and potential benefits [38]. Previous research has highlighted the importance of parental involvement in fostering positive technology experiences and promoting responsible digital engagement among children [39]. Understanding how PEI interacts with social media usage, knowledge sharing, social media features, and motivation and uses can offer insights into the multifaceted dynamics that underlie technology acceptance within the childhood learning context.

H4a: PEI moderates the relationship between social media usage and childhood learning mechanisms, such that the impact is stronger when PEI is higher.

H4b: PEI moderates the relationships between KS, SMF, MU, and childhood learning mechanisms, with stronger effects observed at higher levels of PEI.

2.5. Types of Social Media (TSM)

The landscape of social media is characterized by diverse platforms that offer varying functionalities and engagement opportunities. Research has shown that the selection of appropriate technology tools enhances engagement and promotes meaningful learning experiences [40]. Moreover, platform familiarity and alignment with learners preferences are factors that contribute to technology acceptance [41]. Therefore, examining how the types of social media platforms interact with social media usage, knowledge sharing, social media features, motivation, and uses, and ultimately influence childhood learning mechanisms, can shed light on the nuanced ways in which technology-mediated learning unfolds within the childhood program context.

H5a: TSM moderate the relationship between social media usage and childhood learning mechanisms, with differing impacts based on the specific platforms used.

H5b: TSM moderate the relationships between KS, SMF, MU, and childhood learning mechanisms, reflecting varying effects attributed to distinct platform characteristics

2.6. Perceived Ease of Use (PEOU) and Perceived Usefulness (PU):

By embracing these hypotheses, the author endeavors to unravel the intricate interactions between social media usage, childhood learning mechanisms, parental or educational influence, and types of social media. By the investigation, informed by a comprehensive survey within childhood programs, will be underpinned by rigorous statistical analysis techniques.

H6: PEOU positively affects PU in the context of childhood learning mechanisms.

H7: PU positively affects childhood learning mechanisms acceptance.

H6: PEOU positively affects childhood learning mechanisms acceptance.

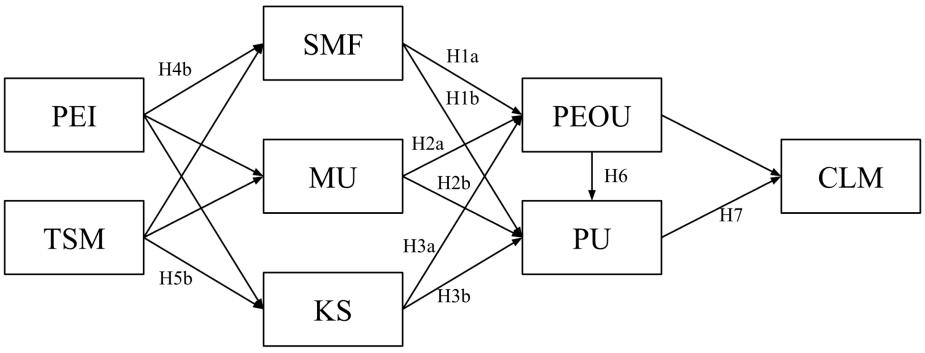

Figure 1. Understanding the Impact of Social Media on Childhood Learning Mechanism Research Model

Moreover, this study aligns with the global vision of Sustainable Development Goal 4 (SDG 4: Quality Education), which emphasizes the promotion of inclusive, equitable, and lifelong learning opportunities for all. As social media platforms increasingly become an integral component of educational landscapes, their potential to enhance digital literacy, engagement, and accessibility is crucial in reducing educational disparities. By incorporating KS, SMF, and MU into the Technology Acceptance Model (TAM) framework, this study provides insights into how technology-driven education can foster adaptive learning experiences and support sustainable educational practices. Understanding these dynamics is essential for shaping future policies, digital learning strategies, and intervention programs aimed at improving educational quality and inclusivity worldwide.

3. RESEARCH METHODOLOGY

3.1. Introduction and Population Selection

To dive deeper into the impact of social media on childhood learning, a comprehensive research methodology is proposed. The primary focus of this study will be children aged 6-12 years from diverse socio-economic backgrounds. This age group represents a demographic that is increasingly exposed to social media, yet is still in the foundational stages of formal education, making them an ideal population for this study.

3.2. Mixed-Methods Approach and Data Collection

A mixed-methods approach will be employed to ensure both quantitative and qualitative insights are garnered. Initial data collection will involve pre-and post-surveys, aiming to gauge children understanding and usage of social media, as well as their prevailing learning habits. To supplement these findings and provide a more nuanced understanding, semi-structured interviews will be conducted with the children. The rationale for employing a mixed-methods approach lies in its ability to provide a comprehensive understanding of the factors influencing childhood learning mechanisms through social media applications [42]. While quantitative survey data allows for statistical validation of hypotheses, qualitative insights from semi-structured interviews enrich the findings by capturing children perspectives, motivations, and behavioral nuances that cannot be fully quantified. This triangulation of data sources ensures that the study does not rely solely on numerical interpretations but also incorporates contextual and experiential dimensions of e-learning adoption. Moreover, the qualitative analysis will help explain unexpected trends observed in the statistical data, thus strengthening the interpretative power of our findings. The integration of these two methods enhances the validity and reliability of the study, making it more robust in addressing the complexities of technology acceptance in childhood education. These interviews will delve into their experiences, perceptions, and preferences related to social media and learning. Additionally, observational sessions will be organized, wherein researchers will monitor children's interactions with social media platforms and note their subsequent learning behaviors, providing real-time insights into the learning mechanisms at play.

3.3. Intervention Design

A six-week program will be designed where children will be exposed to curated educational content on popular social media platforms. This content, while mirroring standard educational curricula, will be tailored to the unique formats native to social media, such as short videos, interactive polls, and stories. The intention is to simulate a genuine social media experience but with an educational underpinning, thereby assessing if social media, when used appropriately, can enhance traditional learning mechanisms.

3.4. Outcome Measures and Control Group

The success of the intervention will be measured against several outcomes. Primary among these will be the improvement in the understanding of educational content post-intervention. Changes in learning habits, strategies post-exposure, and engagement levels with the educational content on social media will also be pivotal markers. To ensure the validity of the results, a control group of children, who continue with their regular learning routines without the intervention, will be incorporated. This will facilitate comparative analysis, highlighting the effectiveness, or lack thereof, of the social media-based learning approach.

3.5. Parental Involvement and Long-Term Impact

Therefore, focus group discussions with parents will be organized to understand their views on their children learning through social media. Furthermore, to gauge the sustainability and long-term impact of this approach, a three-month follow-up post-intervention will be conducted. This will assess knowledge retention and the continued influence of social media on children learning habits.

This methodology, while comprehensive, is designed to be adaptable, ensuring it remains relevant in the ever-evolving landscape of social media and education.

4. FINDING AND RESULTS

In a pioneering exploration into the dynamic nexus between social media and childhood learning mechanisms, this research has unveiled compelling findings that offer fresh insights into the roles of various variables: parental or educational influence, types of social media, knowledge sharing, social media features, motivation and uses, and childhood learning mechanisms. Conducted in Indonesia with a focus on children aged 6-12 years, the study presents innovative perspectives on leveraging social media for educational purposes:

4.1. Measurement Model

Therefore, the data generated needs to be tested for its validity and accuracy against two components to test construct validity: convergent validity, determined by loading factor and AVE of 0.5. This study Reliability tests used composite reliability and Cronbach alpha. Specifically, the analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) through SmartPLS 4.0, following a two-step approach:

- Measurement Model Evaluation, assessing construct reliability and validity,
- Structural Model Evaluation, testing hypothesis relationships.

The Measurement Model was examined using factor loadings (>0.7), Cronbach Alpha (>0.6), Composite Reliability (CR >0.7), and Average Variance Extracted (AVE >0.5) to ensure internal consistency and convergent validity. Furthermore, Heterotrait-Monotrait Ratio (HTMT) analysis (<0.9) was conducted to confirm discriminant validity. In the Structural Model Evaluation, we employed Bootstrapping (5.000 resamples) to assess path coefficients, t-values, and p-values, ensuring robust statistical significance. Model fit was validated using the Standardized Root Mean Square Residual (SRMR <0.08) to confirm an acceptable level of residual discrepancies. This methodological rigor strengthens the robustness of our findings, providing a comprehensive empirical validation of the proposed framework.

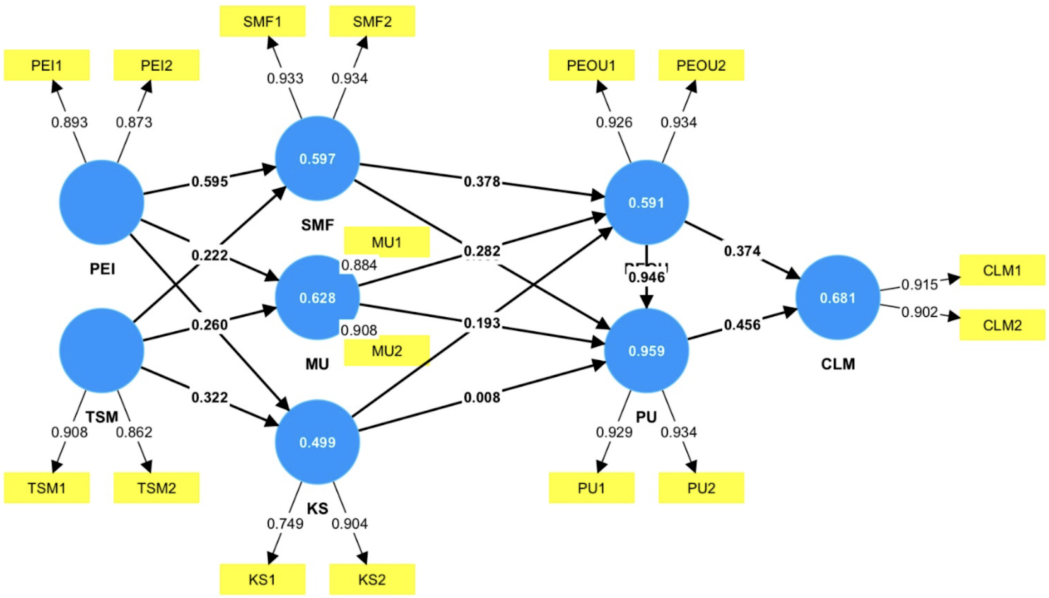

Figure 2. Structural Model

Figure 2. displays the output model obtained after the dataset was processed in SmartPLS, which can further show the Average Variance Extracted (AVE), Cronbach alpha, and Reliability.

Table 1. AVE Results

Variable	Average Variance Extracted
Childhood Learning Mechanisms (CLM)	0.825
Knowledge Sharing (KS)	0.690
Motivation and Uses (MU)	0.803
Parental or Educational Influence (PEI)	0.780
Perceived Ease of Use (PEOU)	0.864
Perceived Usefulness (PU)	0.868
Social Media Features (SMF)	0.872
Types of Social Media (TSM)	0.783

Table 1 displays the AVE results where three variables out of eight have met the criteria for the designated Average Variance Extracted (AVE) threshold, which is above 0.5.

Table 2. Reliability Test Results

Variable	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)
CLM	0.789	0.792	0.904
KS	0.566	0.638	0.815
MU	0.756	0.763	0.891
PEI	0.719	0.722	0.877
PEOU	0.843	0.845	0.927
PU	0.848	0.849	0.929
SMF	0.853	0.853	0.932
TSM	0.726	0.744	0.878

Table 2 shows that Cronbach alpha value of seven out of eight designated variables has met the requirement of values above 0.6. Similarly, the composite reliability value of each variable also has seven that have met the requirement value of above 0.7. Overall, the results of the measurement model (Outer Model) are worthy of further continuation to the structural model (Inner Model).

4.2. Structural Model

In the next step, a structural model (Inner Model) was created to improve confidence that can be optimally developed, and the following results were obtained:

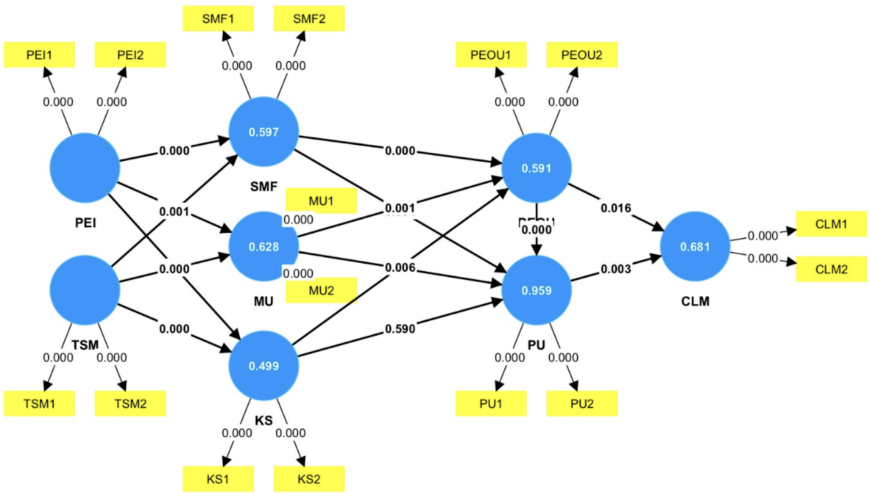

Figure 3. Path Coefficients Results

Figure 3 displays the output obtained after the dataset was processed in SmartPLS, which can show the path coefficients graph.

SmartPLS is one of the supporting factors in knowing the significance level of the variables designated in this study. From the SmartPLS calculation table above, it can be seen that the eleven relationships between variables have a p-value <0.01, which means that each variable is significant. From these data, Knowledge Sharing (KS) $\rightarrow$ Perceived Usefulness (PU) and Motivation and Uses (MU) $\rightarrow$ Perceived Usefulness (PU) are not correlated and have a significant influence.

These groundbreaking findings collectively advance our understanding of how social media can be harnessed to enrich childhood learning mechanisms. The intricate interplay between parental or educational influence, types of social media, knowledge sharing, social media features, motivation, and uses, and childhood learning mechanisms shapes a dynamic landscape that offers immense opportunities for educational innovation. This research not only underscores the potential of social media as an educational tool but also paves the way for tailored interventions that cater to diverse learning styles, enhance intrinsic motivation, and empower children to effectively apply digital knowledge in their everyday lives.

Table 3. Path Coefficients Test Results

Variable	Original sample (O)	Standard deviation (STDEV)	T Statistics (O/STDEV)	P Values	Conclusions
KS → PEOU	0.193	0.070	2.770	0,006	Significant
KS → PU	0.008	0.015	0.538	0,590	Not Affect
MU → PEOU	0.282	0.081	3.463	0,001	Significant
MU → PU	0.005	0.012	0.403	0,687	Not Affect
PEI → KS	0.436	0.070	6.232	0,000	Significant
PEI → MU	0.582	0.070	8.302	0,000	Significant
PEI → SMF	0.595	0.068	8.756	0,000	Significant
PEOU → CLM	0.374	0.156	2.400	0,016	Significant
PEOU → PU	0.946	0.022	42.886	0,000	Significant
PU → CLM	0.456	0.155	2.941	0,003	Significant
SMF → PEOU	0.378	0.084	4.473	0,000	Significant
SMF → PU	0.033	0.016	2.120	0,034	Significant
TSM → KS	0.322	0.066	4.921	0,000	Significant
TSM → MU	0.260	0.070	3.743	0,000	Significant
TSM → SMF	0.222	0.069	3.217	0,001	Significant

The results underscore the profound impact of social media on childhood learning mechanisms. While entertainment remains a significant draw, the educational potential of social media is evident. With the right guidance from parents and educators, social media can be harnessed as a powerful tool to complement traditional learning methods and cater to the diverse learning preferences of children. These findings and results are crafted to provide a comprehensive understanding of the impact of social media on childhood learning mechanisms, based on the specified variables.

5. MANAGERIAL IMPLICATIONS

From a managerial perspective, the findings of this study highlight the need for educational institutions, policymakers, and edtech developers to strategically integrate social media platforms into early childhood learning. Schools should leverage interactive digital tools such as collaborative discussions, gamification, and AI-driven adaptive learning to enhance engagement and retention. Policymakers must establish structured digital learning guidelines, ensuring that privacy, accessibility, and equitable education are prioritized, aligning with Sustainable Development Goal 4 (SDG 4: Quality Education). Additionally, training programs for educators and parents should be developed to improve digital literacy and responsible online learning practices, ensuring children maximize the benefits of technology-driven education while minimizing risks. Collaborative partnerships between schools, edtech companies, and social media platforms should be encouraged to create safe and structured digital learning environments, fostering an inclusive, accessible, and personalized approach to education. Lastly, continuous research and impact assessments should be conducted to evaluate the long-term effectiveness of social media-based learning, ensuring that emerging digital trends are optimally leveraged for sustainable educational development.

6. CONCLUSION

This study has delved into the multifaceted impact of social media on childhood learning mechanisms, offering valuable insights into the roles of parental or educational influence, types of social media, knowledge sharing, social media features, motivation, and uses, and childhood learning mechanisms. The findings underscore the importance of collaborative efforts among parents, educators, and institutions to guide responsible social media engagement for educational purposes. By tailoring learning experiences to specific platform affordances, educators can tap into diverse learning preferences and optimize digital content delivery. The significance of knowledge sharing as a catalyst for both individual growth and community learning has been highlighted, along with the potential of interactive features to foster intrinsic motivation among young learners.

Looking ahead, future research could explore the longitudinal effects of the identified variables on

childhood learning mechanisms. Additionally, investigating the influence of age and cultural background on the observed relationships could provide further insights into the nuances of this dynamic landscape. Furthermore, delving into the design and development of child-friendly social media platforms that align with educational objectives and promote safe online interactions holds promising avenues for research and practical application. As digital landscapes continue to evolve, this study serves as a foundation for harnessing the transformative potential of social media to enrich childhood learning experiences and empower the next generation of learners.

7. DECLARATIONS

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7.2. Author Contributions

Conceptualization: SW; Methodology: LM; Software: TW; Validation: AG and DJ; Formal Analysis: SW and LM; Investigation: TW; Resources: AG; Data Curation: SW; Writing Original Draft Preparation: DJ and NI; Writing Review and Editing: DJ and NI; Visualization: LM; All authors, SW, LM, TW, AG, DJ and NI, have read and agreed to the published version of the manuscript.

7.3. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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7.5. Declaration of Conflicting Interest

The authors declare that they have no conflicts of interest, known competing financial interests, or personal relationships that could have influenced the work reported in this paper.

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