

Contribution of Social Media Content Technology as a Source of Learning and Entertainment (Survey Study on Indonesian Public Viewers of All Generations)

Muhamad Aras¹, Feby Cintia Sahabu¹

¹Master of Strategic Marketing Communication, Bina Nusantara University, Jakarta, Indonesia

Correspondence: Muhammad Aras, Master of Strategic Marketing Communication, Bina Nusantara University, Jakarta, Jl. Kebon Jeruk Raya No. 27, Indonesia.

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Abstract

This study investigates how social media platforms YouTube, TikTok, Facebook, X (formerly Twitter), and Instagram contribute to learning and entertainment among Indonesian users across generations. These platforms have become integral spaces where individuals seek both knowledge and enjoyment. Using a survey method, data were collected from active social media users across Indonesia. A total of 385 respondents were determined through the Lemeshow formula and selected via purposive sampling. The results reveal that YouTube serves as the most influential platform for learning, whereas X dominates in entertainment. Instagram, TikTok, and Facebook also demonstrate significant yet varying contributions to both domains. All constructs in the analysis were found to be valid and reliable, and the structural model exhibited strong predictive power. Overall, the findings affirm that social media plays a vital role in fulfilling the learning and entertainment needs of Indonesian users across generational groups.

Keywords: communication, content, social media, learning media, entertainment media, media technology

1. Introduction

Social media technology has transcended spatial and temporal boundaries, emerging as a global phenomenon of innovation diffusion. In Indonesia, this growth is reflected in a substantial increase in active users. Platforms such as YouTube, TikTok, Facebook, X (formerly Twitter), and Instagram perform dual functions as sources of knowledge, learning, and information, as well as spaces for entertainment. In educational contexts, these platforms foster engagement through broad accessibility and interactive content that support both independent and collaborative learning while nurturing creativity (Gulzar et al., 2021). From an entertainment perspective, social media provides vlogs, viral challenges, and comedic content that cultivate emotional connection through parasocial interactions (Sokolova & Kefi, 2020). Together, these dual functions position social media as an interactive environment that integrates information sharing, social collaboration, skill development, and personalized yet meaningful entertainment experiences.

2. Literature Review

As of January 2025, Indonesia had approximately 143 million YouTube users, the fourth largest audience globally after India, the United States, and Brazil, out of a total of 2.53 billion worldwide (Yonatan, 2025). The average duration of YouTube use via Android in Indonesia reached 1,744 minutes per month, ranking the country tenth globally and indicating both high penetration and usage intensity. YouTube is widely adopted in higher education as a flexible visual platform that allows students to review learning materials and lecturers to illustrate real-world examples (Greeves & Oz, 2024). This study examines YouTube's dual role in education-through tutorials, lectures, and complex explanations-and entertainment, such as vlogs, comedy, and music, which help relieve academic stress while supporting cross-generational learning and entertainment experiences in Indonesia.

Building on this, TikTok has evolved beyond its entertainment origins into an effective learning medium that provides interactive and visually engaging content supporting educational management and student motivation (Wang et al., 2024; Roberd & Roslan, 2022). With 184.95 million users in Indonesia, TikTok is popular for both educational and entertainment purposes, although it carries the risk of spreading non-medical misinformation, highlighting the importance of source verification (Kong et al., 2021). While YouTube excels in facilitating in-depth learning, TikTok is

more effective in capturing short-term attention. A combination of both platforms has been found to offer an optimal strategy for digital media-based learning and entertainment (Al-Marroof et al., 2021; Kuswanti & Oktarina, 2019; Kofo et al., 2022; Hajj, 2019).

At the same time, as of January 2025, Facebook maintained 122 million active users in Indonesia-representing about 43% of the population-demonstrating its continued dominance despite being perceived as outdated (Rizaty, 2025a). With 2.28 billion global users and relatively stable domestic engagement over the past three years, Facebook remains competitive with TikTok and Instagram (Fauziah, 2025). The platform serves a dual function as both a social communication medium and a learning support tool. Puja (2024) notes that Facebook increases learners' motivation through interaction and educational content, while groups, pages, and comments facilitate discussion and information exchange. Accordingly, this study conceptualizes Facebook as a platform that combines learning (via educational groups and forums) and entertainment (through humorous videos, memes, and nostalgic content), balancing informational and recreational functions across generations.

In January 2025, Indonesia ranked third globally in the number of X users, with 25.2 million accounts representing 8.8% of the national social media population, despite a decline from the previous year (Rizaty, 2025c). Globally, the platform reached 586 million users, marking a 0.7% decrease over the past three months (Rizaty, 2025e). X functions as a microblogging platform for rapid information sharing and has played a crucial role in disseminating real-time updates, particularly during crises such as the COVID-19 pandemic (Cinelli et al., 2020). In this study, X is examined as a medium that combines learning and entertainment through informative yet engaging thread features, which appeal to multiple generations as a means of fast information consumption, social reflection, and intellectual enjoyment.

Additionally, as of April 2025, Indonesia ranked fourth worldwide in the number of Instagram users-after India, Brazil, and the United States-with 1.84 billion global users, although the platform's user base slightly declined from the previous year (Rizaty, 2025d; Rizaty, 2025b). This decrease reflects growing competition and shifting user preferences within the social media landscape. Instagram remains highly popular among younger generations due to its visual appeal and the interactive nature of Stories and Reels, which often encourage impulsive engagement (Djafarova & Bowes, 2021). From a learning perspective, Instagram's visuals are effective as forms of indirect education, while influencers amplify educational and entertainment messages through personal and engaging parasocial relationships (Conde & Casais, 2023).

Overall, this study connects developments in Computer-Mediated Communication (CMC) theory with analyses of cross-generational social media interaction influenced by algorithmic design, media affordances, and digital behavior. CMC has evolved from textual exchanges into complex digital interactions, where technology actively shapes communicative experiences. Following Carr (2020), he study emphasizes the mobile-social era, in which smartphones, AI, and algorithms transform how users access information and interact for both learning and entertainment. According to Jones-Jang & Park (2022), users demonstrate selective trust and skepticism toward AI-based recommendations, with technological control affecting reflective media use. The findings align with Scharlach & Hallinan (2023) concept of value affordances, which posits that features such as "like" and "share" buttons perform both technical and symbolic roles in motivating informal learning and emotional entertainment. Collectively, this framework enriches CMC theory by integrating technology, algorithms, and affordances into a dynamic model of contemporary mediated communication between users, technology, and social context.

Building on recent advances in CMC theory, contemporary research emphasizes that digital interaction is no longer confined to human-to-human exchanges but is deeply shaped by algorithmic mediation and technological affordances (Carr, 2020). Algorithms on social media platforms curate and prioritize content, influencing how users interact, learn, and entertain themselves in ways that transcend traditional communication. This transformation marks a shift from purely social interaction to technology-driven communication, in which platform design and AI-based curation actively construct meaning and visibility.

Moreover, the concepts of automation bias and algorithmic aversion offer new insights into how users across generations perceive and respond to algorithmic systems (Jones-Jang & Park, 2022). Younger users tend to display greater trust and reliance on algorithmic suggestions, whereas older users often approach them with skepticism or reflective caution. These differences underscore distinct intergenerational media behaviors and highlight the significance of algorithmic literacy and perceived controllability as mediating factors in users' digital experiences.

The concept of value affordances further strengthens this theoretical framework by explaining how features such as "like," "share," and "comment" serve both technical and symbolic purposes (Scharlach & Hallinan, 2023). These affordances not only stimulate participation but also shape emotional and cognitive pathways that foster learning engagement and hedonic satisfaction. Integrating these perspectives, this study extends the CMC framework to encompass algorithmic impact and intergenerational variation as central mechanisms explaining how social media platforms simultaneously serve learning and entertainment functions.

In recent years, theoretical perspectives have increasingly emphasized the centrality of algorithmic mediation in shaping user experiences and generational differences in digital engagement. Algorithms are no longer perceived as neutral technological tools but as socio-technical agents that actively curate visibility, influence participation, and structure intergenerational communication patterns on social media. Swart (2021) highlights how younger users develop algorithmic literacy and tactical awareness in navigating recommender systems, demonstrating a reflexive relationship with personalization logics. Expanding on this, Oeldorf-Hirsch & Neubaum (2023) show that algorithmic awareness varies across age cohorts, with younger audiences exhibiting greater familiarity and comfort with automated systems, while older generations maintain a more cautious stance. These behavioral and perceptual gaps reveal how algorithmic personalization shapes generational “media diets,” influencing what users learn, enjoy, and trust.

In addition, Trillò (2023) observes that platform aesthetics and interface design reinforce generational tastes and symbolic boundaries, explaining why different generations favor distinct formats and affordances within the same platform. Complementing this, a segmentation study by Serrano-Malebrán & Arenas-Gaitán (2021) demonstrates that the effectiveness of algorithmic personalization on social media depends largely on users’ prior attitudes and media habits, which often correlate with age and technological proficiency. Taken together, these studies demonstrate that understanding intergenerational media consumption requires integrating algorithmic logic, literacy, and generational habitus into contemporary Computer-Mediated Communication frameworks.

Based on the theoretical perspectives outlined above, this study positions algorithmic mediation, generational media habits, and platform-specific affordances as the conceptual foundation for the research model. These frameworks directly inform the operationalization of variables in the methodology, guiding the selection of social media platforms, the formulation of learning and entertainment constructs, and the interpretation of cross-generational patterns in the results. Accordingly, the following methodology section translates these concepts into measurable indicators and analytical procedures, ensuring a coherent linkage between the literature, research design, and empirical findings.

3. Method

This research employs a positivist quantitative approach to measure numerical data and statistically analyze patterns and relationships between variables in order to produce generalizable results (Neuman, 2007). It adopts an explanatory design aimed at assessing and determining causal relationships between hypotheses and variables, thereby contributing to the development or verification of existing theories (Nardi, 2014). According to Creswell & Creswell (2018) surveys allow researchers to collect data from large populations, offering a broad overview of variable relationships that can be summarized using tables, graphs, and percentages to determine statistical significance.

This study adopts an explanatory survey design that integrates descriptive and causal objectives to examine how social media platforms influence users’ perceptions of learning and entertainment. The design aligns with the positivist paradigm, which emphasizes objectivity, measurement, and hypothesis testing to derive generalizable findings (Hair Jr et al., 2021). The survey method was selected for its efficiency in capturing cross-sectional behavioral patterns from large and geographically dispersed populations (Creswell & Creswell, 2018). Online data collection was used to ensure accessibility across Indonesia’s diverse demographic segments, consistent with contemporary digital research practices that emphasize inclusivity and ecological validity.

3.1 Survey Methods

The survey method was used to collect data from a large population through questionnaires, providing a representative picture of the variables under study. Surveys are effective tools for gathering responses that are difficult to observe directly, such as public attitudes and opinions (Nardi, 2014), and for obtaining data from social media users distributed across Indonesia (Fowler Jr, 2014). The questionnaire comprised three sections: respondent demographics (age, gender, occupation, and preferred social media platforms), questions on social media usage, and statements assessing the perceived benefits of social media in Indonesia.

3.2 Population and Research Sample

The study population consisted of Indonesian social media users of YouTube, TikTok, Facebook, X, and Instagram. Indonesia was chosen due to its status as one of the countries with the largest social media user bases worldwide. Using the Lemeshow formula with a 5% margin of error, a sample of 385 respondents was determined (Hosmer Jr et al., 2013). A nonprobability sampling technique was employed to ensure that participants had specific and relevant experiences (Keyton, 2011), using purposive sampling to select respondents who met predetermined criteria (Sahabu et al., 2025).

Purposive sampling was selected due to Indonesia’s large and geographically dispersed digital population, which makes probability sampling impractical. This method allowed the intentional inclusion of respondents who actively use at least three of the five studied platforms (YouTube, TikTok, Facebook, X, and Instagram) and who engage with these platforms for both learning and entertainment purposes. This approach is consistent with previous Indonesian studies that used purposive criteria to target specific social media user groups (Chan et al., 2024).

Despite its usefulness, purposive sampling carries inherent risks of bias, including the potential overrepresentation of younger, digitally literate individuals and the underrepresentation of older or less active users. Moreover, reliance on online distribution channels (via social media or messaging applications) introduces self-selection bias, as participation depends on Internet access and voluntary willingness—a concern also noted in studies of digital-only surveys in Indonesia (Kusumalestari et al., 2024; Arafah & Hasyim, 2023).

Several methodological limitations must be acknowledged. First, as a cross-sectional design, the study captures perceptions at a single point in time and cannot establish causal inference between variables. Second, reliance on self-reported data may lead to recall and social desirability biases. Third, disparities in digital infrastructure between urban and rural areas may affect representativeness. Spatial analyses of Indonesia's regional digital development confirm persistent inequalities in Internet access and infrastructure (Kartiasih et al., 2023). These limitations, common in digital survey research, should be considered when interpreting the findings. Future research could adopt stratified or longitudinal designs to enhance external validity and explore generational shifts over time.

Furthermore, the purposive sampling strategy may have introduced additional demographic and technological biases. Because the study relied on online distribution channels, individuals with limited digital literacy, particularly older adults who are less familiar with digital surveys, were less likely to participate. This underrepresentation may skew the results toward younger, more digitally active respondents, potentially inflating perceptions of certain platforms while reducing the visibility of alternative media behaviors among older cohorts. These sampling constraints should be considered when assessing the extent to which the findings can be generalized to the broader Indonesian population.

3.3 Data Collection Technique

Data collection involved both primary and secondary sources. Primary data were obtained through a structured questionnaire distributed online via Google Forms, targeting respondents based on the study's inclusion criteria. Secondary data were used to complement the primary findings and were obtained from books, peer-reviewed journal articles, credible websites, and previously published surveys.

3.4 Research Model

Based on the phenomena, problems, and previous theoretical studies and conceptual foundations, the framework for this research can be seen in Figure 6 below:

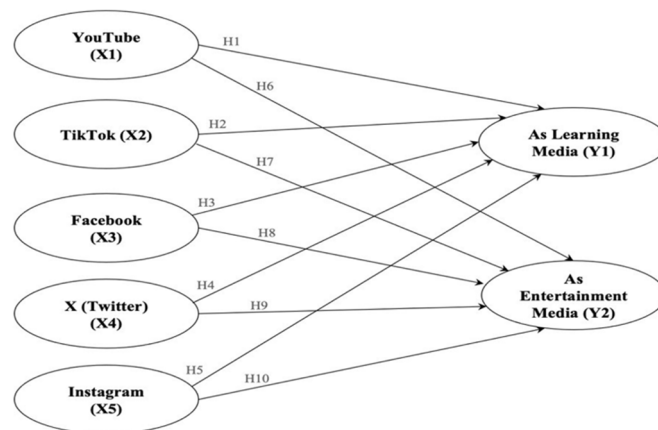


Figure 1. Research model

This study examines the influence of YouTube, TikTok, Facebook, X (formerly Twitter), and Instagram as learning (Y1) and entertainment (Y2) media among Indonesian users. It includes five independent variables (X1–X5) and two dependent variables, with directional arrows illustrating the hypothesized causal relationships between constructs.

4. Results and Discussion

This study employed Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS 4.1.0.3 to analyze the relationships between five social media platforms and user perceptions of their roles as learning and entertainment media. This analytical method was chosen because it is capable of handling complex models with multiple indicators and non-normally distributed data. Data were collected through a cross-generational online survey conducted in Indonesia and analyzed through convergent validity, discriminant validity, reliability, coefficient of determination (R^2), and path coefficient testing. Hypothesis testing was performed using bootstrapping procedures with t-statistics and p-values to assess the significance of the relationships among variables.

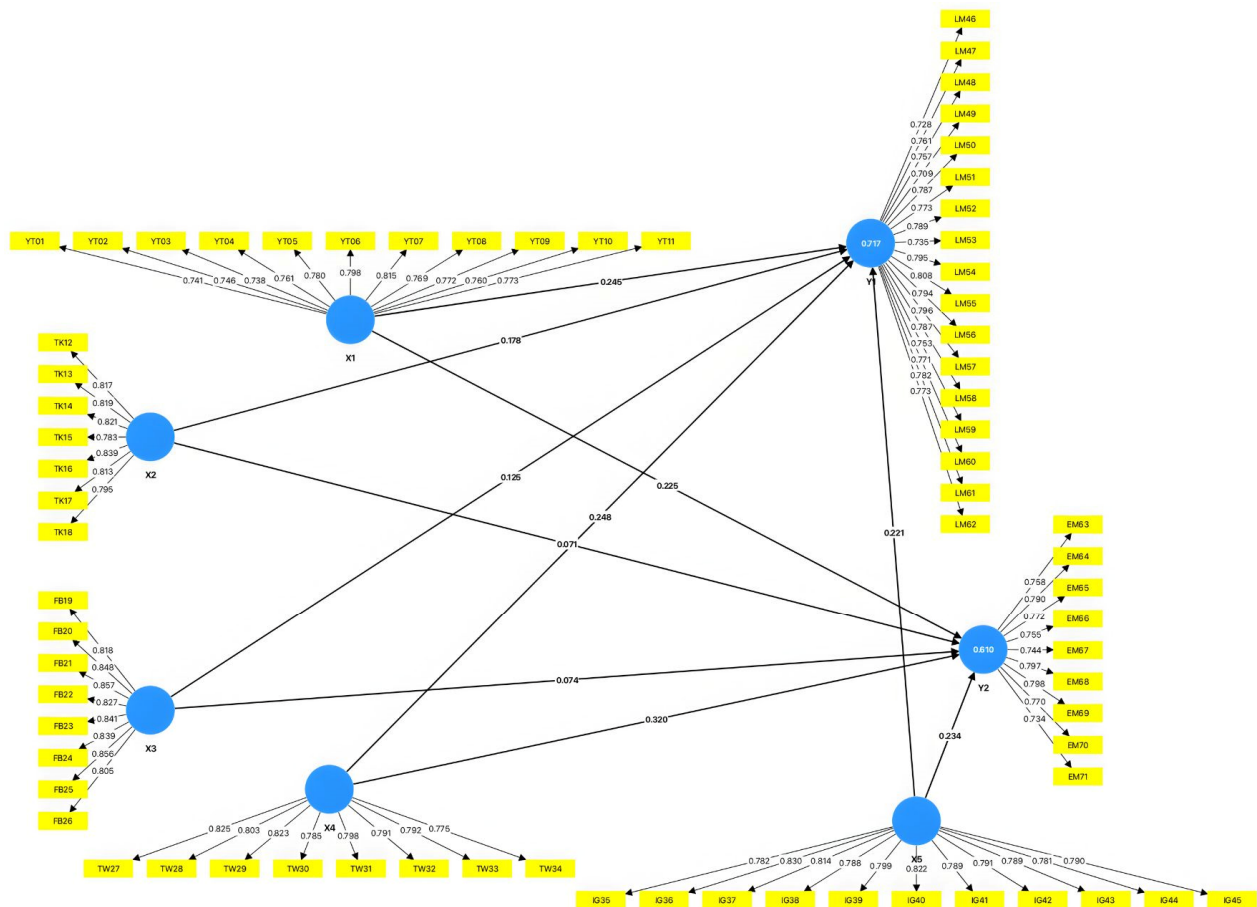


Figure 2. Smart PLS model

The structural model (Figure 2), analyzed using SmartPLS, reveals a positive relationship between the five social media platforms and the two main functions-learning and entertainment. SmartPLS was selected because it enables the testing of complex models with numerous constructs and reflective indicators. The analysis indicates that X exerts the strongest influence on entertainment, whereas YouTube shows the highest impact on learning. These findings illustrate platform-specific characteristics that shape cross-generational preferences, confirming that social media simultaneously serves as a means of entertainment and a source of educational information.

Outer loadings indicate the strength of the relationships between indicators and latent constructs in PLS-SEM, used to assess convergent validity. The ideal threshold value is above 0.70, though values between 0.50 and 0.70 remain acceptable (Garson, 2016). Based on Table 1, most indicators for the five independent variables-YouTube (X1), TikTok (X2), Facebook (X3), X (Twitter) (X4), and Instagram (X5)-and the two dependent variables, Learning Media (Y1) and Entertainment Media (Y2), exceeded 0.70. This confirms that the indicators are valid, strongly associated with their respective constructs, and contribute meaningfully to the measurement model.

Table 1. Results of Convergent Validity Analysis

Variable	Code	Outer loading
Youtube (X1)	YT01	0.741
	YT02	0.746
	YT03	0.738
	YT04	0.761
	YT05	0.780
	YT06	0.798
	YT07	0.815
	YT08	0.769
	YT09	0.772
	YT10	0.760
TikTok (X2)	YT11	0.773
	TK12	0.817
	TK13	0.819
	TK14	0.821
	TK15	0.783
	TK16	0.839
	TK17	0.813
	TK18	0.795
Facebook (X3)	FB19	0.818
	FB20	0.848
	FB21	0.857
	FB22	0.827
	FB23	0.841
	FB24	0.839
	FB25	0.856
	FB26	0.805
X (Twitter) (X4)	TW27	0.825
	TW28	0.803
	TW29	0.823
	TW30	0.785
	TW31	0.798
	TW32	0.791
	TW33	0.792
	TW34	0.775
Instagram (X5)	IG35	0.782
	IG36	0.830
	IG37	0.814
	IG38	0.788
	IG39	0.799
	IG40	0.822
	IG41	0.789
	IG42	0.791
	IG43	0.789
	IG44	0.781
	IG45	0.790
As a Learning Media (Y1)	LM46	0.728
	LM47	0.761
	LM48	0.757
	LM49	0.709
	LM50	0.787
	LM51	0.773
	LM52	0.789
	LM53	0.735
	LM54	0.795
	LM55	0.808
	LM56	0.794
	LM57	0.796
	LM58	0.787
	LM59	0.753
	LM60	0.771
As a Entertainment Media (Y2)	LM61	0.782
	LM62	0.773
	EM63	0.758
	EM64	0.790
	EM65	0.772
	EM66	0.755
	EM67	0.744
	EM68	0.797
	EM69	0.798
	EM70	0.770
	EM71	0.734

Discriminant validity ensures that each construct represents a unique concept, tested using the Fornell–Larcker criterion, which compares the Average Variance Extracted (AVE) of each construct to its correlations with other constructs (Falebita & Kok, 2024). As shown in Table 2, all constructs meet this criterion. For instance, YouTube recorded an AVE of 0.769-higher than its correlations with other constructs (TikTok = 0.587; Facebook = 0.575). Similarly, TikTok = 0.813, Facebook = 0.836, X = 0.799, Instagram = 0.798, Y1 = 0.771, and Y2 = 0.769. These results confirm that the constructs possess good discriminant validity and are empirically distinct.

Table 2. Fornell-Larcker Criterion discriminant validity analysis results

	X1	X2	X3	X4	X5	Y1	Y2
X1	0.769						
X2	0.587	0.813					
X3	0.575	0.492	0.836				
X4	0.619	0.753	0.543	0.799			
X5	0.700	0.558	0.586	0.574	0.798		
Y1	0.730	0.693	0.618	0.728	0.707	0.771	
Y2	0.672	0.612	0.550	0.688	0.659	0.640	0.769

As presented in Table 3, all Cronbach's alpha values exceeded 0.70, indicating strong internal reliability (Hair Jr et al., 2021). Composite reliability values (both rho_a and rho_c) also surpassed 0.70, suggesting consistency among indicators in representing their constructs. All Average Variance Extracted (AVE) values were greater than 0.50, indicating that more than half of the variance in each indicator was explained by its construct (Garson, 2016). These results confirm that the measurement model demonstrates satisfactory validity and reliability, making it suitable for further structural analysis.

Table 3. Reliability and validity test analysis results

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
X1	0.931	0.932	0.941	0.591
X2	0.914	0.916	0.932	0.660
X3	0.939	0.939	0.949	0.700
X4	0.919	0.920	0.934	0.639
X5	0.943	0.943	0.951	0.637
Y1	0.957	0.958	0.961	0.594
Y2	0.914	0.916	0.929	0.592

The coefficient of determination (R^2) measures the proportion of variance in the dependent variables explained by the independent variables, where values ≥ 0.75 are considered strong, 0.50 moderate, and 0.25 weak (Garson, 2016). Based on Table 4, the variable “Learning Media” (Y1) yielded $R^2 = 0.717$ and adjusted $R^2 = 0.713$, indicating that 71.7% of its variance is explained by the five independent variables-a strong category. The “Entertainment Media” variable (Y2) produced $R^2 = 0.610$ and adjusted $R^2 = 0.605$, meaning 61% of its variance is explained, representing a moderately strong category. These findings demonstrate that the model possesses good predictive capability for both outcome variables.

Table 4. Determination coefficient test results (R^2)

	R-square	Adjusted R-square
Y1	0.717	0.713
Y2	0.610	0.605

Path coefficients in PLS-SEM measure the strength and direction of relationships between latent variables, ranging from -1 to $+1$ (Garson, 2016). According to Table 5, for Learning Media, the strongest influences were found for X (Twitter) (0.248) and YouTube (0.245), followed by Instagram (0.221) and TikTok (0.178), with Facebook exerting the lowest effect (0.125). For Entertainment Media, X (Twitter) showed the highest effect (0.320), followed by Instagram (0.234) and YouTube (0.225), while TikTok (0.071) and Facebook (0.074) contributed the least. These results highlight differences in platform preferences based on usage purpose, with X (Twitter) and YouTube showing distinct dominance in entertainment and learning, respectively.

Table 5. Results of path test analysis coefficients

Variables	Path Coefficient
YouTube -> As a Learning Media	0.245
TikTok -> As a Learning Media	0.178
Facebook -> As a Learning Media	0.125
X (Twitter) -> As a Learning Media	0.248
Instagram -> As a Learning Media	0.221
YouTube -> As a Entertainment Media	0.225
TikTok -> As a Entertainment Media	0.071
Facebook -> As a Entertainment Media	0.074
X (Twitter) -> As a Entertainment Media	0.320
Instagram -> As a Entertainment Media	0.234

Hypothesis testing using PLS-SEM employed the criteria of t-statistics (>1.96) and p-values (<0.05) to determine significance (Hair Jr et al., 2021). Based on Table 6, most hypotheses were supported, indicating significant effects of social media on user perceptions of learning and entertainment. TikTok, Facebook, and Instagram demonstrated significant impacts on both roles, whereas X (Twitter) showed no significant relationship with learning, and YouTube exhibited no significant relationship with entertainment.

Table 6. Hypothesis test results

Hypothesis	T-statistics	P-value	Notes
H1: Youtube has a significant impact as a learning media.	2.804	0.005	Hypothesis accepted
H2: TikTok has a significant impact as a learning media.	3.160	0.002	Hypothesis accepted
H3: Facebook has a significant impact as a learning media.	3.131	0.002	Hypothesis accepted
H4: X (Twitter) has a significant impact as a learning media.	0.943	0.346	Hypothesis rejected
H5: Instagram has a significant impact as a learning media.	2.386	0.017	Hypothesis accepted
H6: YouTube has a significant impact as a entertainment media.	1.512	0.131	Hypothesis rejected
H7: TikTok has a significant impact as a entertainment media.	3.639	0.000	Hypothesis accepted
H8: Facebook has a significant impact as a entertainment media.	3.457	0.001	Hypothesis accepted
H9: X (Twitter) has a significant impact as a entertainment media.	3.268	0.001	Hypothesis accepted
H10: Instagram has a significant impact as a entertainment media.	3.429	0.001	Hypothesis accepted

H1: The results ($t = 2.804$, $p = 0.005$) indicate that YouTube significantly influences users' perceptions as a learning medium, consistent with Su et al. (2024), who highlighted the algorithmic display of educational content, and Greeves & Oz (2024) as well as Basgall et al. (2023), who emphasized YouTube's effectiveness across various levels of education. Habibi et al. (2024) further demonstrated its success in enhancing Indonesian students' English-speaking skills. With a path coefficient of 0.245, YouTube's influence is categorized as moderate to strong, confirming its potential as an effective channel for educational institutions, instructors, and content creators to expand digital learning across generations.

H2: The results ($t = 3.160$, $p = 0.002$) reveal that TikTok significantly affects users' perceptions as a learning medium. Originally designed for entertainment, TikTok's short video format and engaging visuals enhance its educational utility supporting findings by Wang et al. (2024) and Roberd & Roslan (2022) who reported improved science learning outcomes among elementary students. Al-Marouf et al. (2021) noted that active users acquire and share knowledge via TikTok, while Kong et al. (2021) cautioned about verifying accuracy, particularly regarding health information. With a path coefficient of 0.178, TikTok's effect is significant yet smaller than that of YouTube or X (Twitter), suggesting that microvideo-based learning holds valuable potential for educators seeking to reach younger audiences.

H3: The analysis ($t = 3.131$, $p = 0.002$) confirms a significant relationship between Facebook and users' perceptions as a learning medium, supporting Hypothesis 3. These findings align with Puja (2024), who found that Facebook enhances learning motivation through interactive online services, and Ulla & Perales (2021), who described it as a space for academic collaboration. Although its path coefficient (0.125) indicates a moderate effect, lower than YouTube and TikTok, Facebook remains a relevant participatory learning tool across generations.

H4: The results ($t = 0.943$, $p = 0.346$) show that X (formerly Twitter) does not significantly influence perceptions as a learning medium, despite a path coefficient of 0.248. Although X offers text and discussion features, its educational value appears lower than that of YouTube or TikTok. This finding corresponds with Zheng & Dallaghan (2022), who argued that Twitter fosters social connectedness more than conceptual understanding. Déchène et al. (2024) nonetheless demonstrated X's potential for scientific communication, while Cinelli et al. (2020) highlighted its role in the COVID-19 infodemic, which weakened credibility perceptions. In Indonesia, limited educational impact may stem from opinion-dominated content and the lack of visual learning material across age groups.

H5: The results ($t = 2.386$, $p = 0.017$) indicate that Instagram significantly influences Indonesians' cross-generational perceptions as a learning medium, suggesting that users regard it as both a visual and informational platform. This

finding aligns with Djafarova & Bowes (2021), who confirmed the effectiveness of Instagram's visuals and narratives in fostering learning engagement, and González-Mohino et al. (2024), who found that interactive video and quiz features enhance motivation and comprehension. Supporting evidence from Escamilla-Sanchez et al. (2025) showed that 85.6 % of medical students improved their histology performance through Instagram-based learning activities.

H6: The test results ($t = 1.512$, $p = 0.131$) indicate that YouTube is not a significant entertainment medium among Indonesian users, thus rejecting Hypothesis 6. Although renowned for music, comedy, and vlogs, respondents perceive YouTube primarily as an informal educational resource. Valkenburg et al. (2022) observed that passive viewing yields low hedonic impact when content misaligns with preferences, and Budzinski et al. (2021) reported declining use outside prime viewing hours. While YouTube remains iconic as an audiovisual platform, it is increasingly valued for information and light learning—an insight crucial for creators and marketers.

H7: TikTok exhibits a significant influence on entertainment perceptions ($t = 3.639$, $p < 0.001$; path coefficient = 0.071), although its magnitude is smaller than that of other platforms. This supports Rahayu et al. (2025), who emphasized hedonic motivations—pleasure, curiosity, and relaxation—as drivers of TikTok use, particularly among Generation Z. Viral challenges, creative effects, and popular music enhance this experience, consistent with Hajj (2019) regarding the interactive potential of visual entertainment. Although the effect is modest, it remains strategically relevant for reaching entertainment-seeking audiences.

H8: Facebook also shows a significant yet weak influence as an entertainment medium ($t = 3.457$, $p = 0.001$; path coefficient = 0.074). Users engage with light content—friends' posts, memes, and live videos—driven by hedonic motivations such as relaxation and social enjoyment. Zhang & Jung (2022) noted that broadcasting and user-generated content foster enjoyment, especially among younger cohorts. Although not the primary entertainment platform, Facebook maintains social and emotional relevance as a source of casual engagement.

H9: The results ($t = 3.268$, $p = 0.001$; $\beta = 0.320$) confirm that X (Twitter) serves as a significant entertainment medium. Its concise, dynamic content—tweets, memes, and short clips—makes it ideal for instant entertainment consumption. Studies by Jaidka et al. (2021) and Beste et al. (2022) support this, identifying Twitter as a flexible information-entertainment channel accessible at any time.

H10: Finally, Instagram demonstrates a significant and strong influence as a cross-generational entertainment medium ($t = 3.429$, $p = 0.001$; path coefficient = 0.234). The platform provides authentic entertainment experiences through Reels, Stories, and interactive broadcasts. Ballester et al. (2021) found that visual composition, narrative imagery, and participatory features such as polls and hashtags enhance user enjoyment. Accordingly, Instagram successfully merges visual entertainment with social interactivity—core elements of contemporary digital lifestyles.

Generational differences also provide an important layer of interpretation for understanding the observed patterns. Baby Boomers in the sample tend to rely more heavily on Facebook and YouTube, platforms that offer familiar interfaces, longer-form content, and clearer informational structures. Generation X shows a more balanced pattern of consumption, engaging with Facebook, Instagram, and YouTube for both entertainment and informational purposes. In contrast, Millennials exhibit higher engagement across visually oriented platforms such as Instagram and TikTok, reflecting their preference for dynamic and interactive content. Meanwhile, Generation Z demonstrates the strongest inclination toward TikTok and Instagram, driven by algorithmically curated short-form videos that align with their rapid consumption style. These distinctions help contextualize the PLS-SEM results by indicating that the perceived learning and entertainment value of each platform is also shaped by the generational characteristics and digital habits of the users.

These generational tendencies also suggest that platform affordances may amplify different motivational drivers across age groups. For example, TikTok's algorithmic content delivery aligns well with Gen Z's preference for immediate stimulation, while YouTube's structured long-form videos meet the learning-oriented needs of older cohorts. Recognizing these differences enhances the interpretive depth of the findings and supports a more nuanced understanding of how learning and entertainment perceptions vary across generations.

5. Conclusion

This study examined the contribution of five major social media platforms—YouTube, TikTok, Facebook, X (Twitter), and Instagram—to learning and entertainment functions among Indonesian users across generations. Using the PLS-SEM method with 385 valid respondents, all constructs were found to be reliable and valid, establishing a robust model for analyzing the relationships between variables.

The results revealed that YouTube significantly contributes to learning but not entertainment, whereas X (Twitter) significantly supports entertainment but not learning. TikTok, Facebook, and Instagram demonstrated significant influence in both dimensions, with TikTok and Facebook more dominant in entertainment and Instagram showing strong dual functionality across learning and entertainment contexts.

These findings indicate that user perceptions are shaped by content format, platform characteristics, and demographic variation. Long-form videos on YouTube remain effective for educational purposes; short and dynamic content on TikTok and X appeals to users seeking entertainment; and Instagram's visual storytelling fosters both learning motivation and emotional engagement.

In practical terms, these insights offer several implications for educators, content providers, and marketers. Educators can leverage platform-specific strengths by integrating YouTube for structured explanations, Instagram for visual reinforcement, and TikTok for micro-learning modules that enhance motivation, particularly among younger cohorts. Content creators and media practitioners should design messages aligned with generational preferences, short, dynamic content for younger users and informative, discussion-oriented materials for older audiences. Marketers can optimize cross-platform communication strategies by tailoring engagement formats to each age segment while considering algorithmic behaviors that influence content visibility. Collectively, these recommendations underscore the importance of aligning digital communication strategies with generational media habits to improve learning, engagement, and entertainment outcomes.

Overall, social media functions as a multifaceted ecosystem that bridges information, learning, and entertainment across generations. The study underscores the importance of leveraging platform-specific affordances to design more effective strategies for digital education, cultural engagement, and cross-generational recreation, insights valuable for educators, policymakers, and content creators alike.

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No additional data are available.

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