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The Effect of Mobile Legends Social Media Engagement on the Perception of Game Image among SMAN 5 Jakarta Students

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A B S T R A C T
This study aims to analyze the influence of social media engagement on the perceived brand image of Mobile Legends: Bang Bang among students of SMAN 5 Jakarta. Social media engagement in this study is measured through three dimensions: cognitive engagement, affective engagement, and behavioral engagement. This research employs a quantitative approach using a survey method, where data were collected through questionnaires distributed to 30 respondents who are students of SMAN 5 Jakarta. The data analysis technique used is Partial Least Squares Structural Equation Modeling (PLS-SEM) with the assistance of SmartPLS software. The results indicate that social media engagement has an influence on game brand image perception, where each engagement dimension contributes to shaping students' perceptions of the game. Cognitive engagement relates to information processing, affective engagement relates to emotional responses, and behavioral engagement relates to users' active interactions on social media. This study is expected to contribute to the development of digital communication studies, particularly in understanding the role of social media in shaping the image of digital products among adolescents.

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INTRODUCTION

The rapid development of information and communication technology over the past few decades has significantly transformed how individuals communicate, access information, and engage with digital entertainment. The internet and mobile devices have made it possible for people to connect quickly and broadly through various digital platforms, with social media emerging as one of the most visible outcomes of this transformation, particularly among the younger generation. Indonesia's internet penetration has reached approximately 221 million users, or 79.5% of the national population, of which around 167 million are active social media users with an average daily usage of three hours and eleven minutes (APJII, 2024). Through social media, individuals not only communicate and build social relationships but also access various forms of digital entertainment, including online games.

Alongside the growth of social media usage, the online gaming industry has also expanded rapidly. Online games are no longer understood merely as a leisure activity but have evolved into a digital cultural phenomenon involving social interaction among players across regions. The global mobile gaming market has surpassed USD 150 billion and is projected to continue growing rapidly as smartphone penetration increases worldwide (Syvertsen et al., 2022), with some projections estimating the market will exceed USD 300 billion by the end of this decade (Kim et al., 2021). In Indonesia, approximately 94.5% of gamers play using mobile devices, making smartphones the primary gaming platform in the country (Niko Partners, 2023).

Mobile Legends: Bang Bang, a Multiplayer Online Battle Arena (MOBA) game released by Moonton in 2016, has become one of the most popular mobile games in Southeast Asia, including Indonesia, with a substantial player base that has positioned it as a dominant title within the regional esports ecosystem (Ong et al., 2023). Its popularity has further driven the growth of the esports industry, attracting sponsors and large player communities, particularly through competitions such as the Mobile Legends Professional League (MPL) (Nathanel & Otok, 2025; Putri & Kuswinarno, 2024). A 2025 survey by the Indonesian Internet Service Providers Association (APJII) found that Mobile Legends is the most frequently accessed online game in Indonesia, chosen by 48.99% of respondents, followed by Free Fire (23.05%), PUBG (11.05%), and Call of Duty (6.74%), underscoring the continued appeal of MOBA-genre games among Indonesian players.

User involvement in social media is commonly referred to as social media engagement, which encompasses various forms of user activity in interacting with content related to a product or brand, such as viewing content, commenting, liking, sharing, and creating new content. According to Schivinski (2021), social media engagement can influence how individuals perceive a brand because digital interaction enables the exchange of information and experience among users. In the context of digital games, user perception is often associated with the concept of brand image—the set of associations, impressions, and evaluations formed in an individual's mind regarding a product or brand. Zeqiri (2024) demonstrated that social media marketing activities significantly influence brand

image formation, as digital interaction allows consumers to obtain information and symbolic experiences about a product.

This phenomenon becomes particularly relevant when considered alongside adolescent characteristics. Adolescence is a developmental stage marked by identity formation and heightened sensitivity to peer and social media influence (Santrock, 2021), and in Indonesia, internet usage among adolescents aged 13–18 is exceptionally high, at approximately 99.16% (APJII, 2023), with social media access and online gaming among the most common online activities. SMAN 5 Jakarta was selected as the research site because it is a public senior high school located in central Jakarta with students from diverse socio-economic backgrounds, representative of urban adolescents who are active social media users; preliminary observation also indicated that most of its students were active social media users with considerable exposure to Mobile Legends content, and the researcher's prior familiarity with the school as an alumnus facilitated data collection and contextual relevance.

While previous studies have examined social media use and mobile gaming phenomena among adolescents, most have focused on the impact of gaming on social behavior or mental health (Utami et al., 2022; Ramadhan et al., 2025), or on digital marketing aspects such as influencer and sponsorship effects on purchase intention (Nurohman & Riptiono, 2021; Nathanel & Otok, 2025). A research gap remains regarding how active user engagement with a digital game's content on social media—encompassing cognitive, affective, and behavioral dimensions—directly shapes the formation of perceived game image among senior high school students, a segment that has received comparatively little attention in the academic literature despite being among the most active social media users. The novelty of this study lies in its effort to address this gap by specifically examining the effect of Mobile Legends social media engagement on the perception of game image among SMAN 5 Jakarta students as a representation of urban senior high school adolescents.

Based on this background, it can be understood that user engagement on social media has the potential to influence how individuals perceive a digital game through various forms of interaction. Therefore, this study aims to analyze the effect of Mobile Legends social media engagement on the perception of game image among students of SMAN 5 Jakarta, with the broader objective of contributing to the development of digital communication studies, particularly regarding the relationship between social media engagement, gaming culture, and the formation of users' perceptions of digital entertainment products.

LITERATURE REVIEW

Previous Research

Previous studies have shown that Mobile Legends: Bang Bang is associated not only with user behavior but also with social media activity and the formation of perceptions toward digital products. Utami et al. (2022), using a qualitative approach, found that the game positively affected cooperation among students but negatively affected direct social interaction, while Ramadhan et al. (2025), using a quantitative survey method, found positive effects on strategic ability and social relationships but also a decline in students' learning focus. In

the social media context, Nurohman and Riptiono (2021) found that social media influencers significantly affect brand image and purchase intention, a finding consistent with Zeqiri (2024), who showed that user engagement in social media significantly influences brand image formation. Ong et al. (2023), applying the UTAUT2 model, found that ease of use, user experience, and player engagement affect the popularity of Mobile Legends.

These studies share similarities with the present research in examining digital gaming phenomena and the role of social media activity in shaping user behavior and perception. However, most prior studies focused on the social and academic impacts of gaming, or on marketing contexts such as influencer effects and general brand image, typically using university students or general users as subjects. The present study instead specifically focuses on social media engagement as a multidimensional construct (cognitive, affective, and behavioral) and its effect on the perception of game image among senior high school students, offering novelty in examining this relationship within an adolescent population of active digital media users.

Uses and Gratifications Theory

Uses and Gratifications Theory was first developed by Katz, Blumler, and Gurevitch (1974) as a response to the view that media exerts a one-directional influence on audiences. In contrast, the theory regards audiences as active and selective in choosing and using media to satisfy their needs and goals. Its core assumptions are that audiences are active and goal-oriented in their media use, that individuals use media to fulfil specific cognitive, affective, social-integrative, and entertainment needs, that media compete with other sources of gratification, and that audiences are able to articulate their own needs and satisfactions (Katz et al., 1974; McQuail, 2010). Ruggiero (2000) further argued that the theory is highly relevant to new media research, as the internet and social media offer far greater interactivity, engagement, and control than conventional media, with users not only consuming but also contributing to and creating content—a pattern reflected in the consumption, contribution, and creation dimensions of social media engagement (Dessart et al., 2015).

Uses and Gratifications Theory is relevant to this study in three respects. First, it explains why students actively seek out, consume, and interact with Mobile Legends content on social media to fulfil informational (cognitive), emotional/entertainment (affective), and social/identity (behavioral) needs—corresponding directly to this study's three independent dimensions: cognitive engagement (X1), affective engagement (X2), and behavioral engagement (X3). Second, the theory explains how the gratification obtained from consuming social media content shapes impressions and perceptions of the object portrayed in that content—namely, the perceived image of Mobile Legends as the dependent variable (Y). Third, it provides a theoretical basis for understanding why differing levels of engagement intensity among students may result in differing perceptions of the same game. Uses and Gratifications Theory therefore serves as the overarching theoretical framework unifying the constructs examined in this study, from active social media user behavior to the engagement process and the formation of perceived game image.

Social Media Engagement

Social media engagement refers to the level of user participation and interaction with content on social media. According to Dessart, Veloutsou, and Morgan-Thomas (2015), it reflects the relationship between a user and a brand within the social media environment, encompassing both passive activities, such as viewing content, and active participation in creating and disseminating information. Schivinski et al. (2021) further explained that user engagement on social media can influence consumer perception of a product or brand because digital interaction enables the exchange of information, experience, and opinion among users. Johnston (2023) added that digital engagement is formed through interaction among users, content, and platforms, producing responses such as attention, emotional attachment, and the formation of perceptions toward a product or brand.

Dessart et al. (2015) proposed that social media engagement can be explained through three principal dimensions: consumption, the act of viewing or consuming content such as gameplay videos or game reviews; contribution, active participation through commenting, liking, sharing, or discussing strategies; and creation, the act of producing new content such as gameplay videos, reviews, or other creative content related to a game. These dimensions indicate that user engagement on social media is not merely passive but encompasses various forms of active participation that can shape user perception of a digital product. In the context of Mobile Legends, this concept is relevant for explaining how user interaction with the game's content on social media potentially affects students' perception of its image.

Brand Image (Game Image)

Brand image reflects the set of perceptions, impressions, and associations formed in consumers' minds regarding a particular product or brand. According to Kotler and Keller (2022), brand image is a set of perceptions formed in consumers' minds regarding a brand, reflected through brand associations stored in memory, which are shaped both through direct product experience and indirectly through information obtained from media, advertisements, and other users' experiences. Keller (2013) similarly explained that brand image is formed through various associations arising in consumer memory, encompassing experience, evaluation, and information received about a product. In the digital communication era, information circulating on social media, such as user reviews, content creator material, and community discussions, plays an important role in shaping product image (Schivinski et al., 2021). In the context of digital games, game image refers to players' perception of a game's quality, reputation, and appeal, which can be shaped by gameplay experience, peer recommendations, and information obtained through social media and player communities.

Keller (2013) proposed that brand image can be measured through three principal dimensions: strength of brand association, which reflects how strongly an association is held in consumers' memory and tends to strengthen with repeated exposure to information about the product; favorability of brand association, which reflects the extent to which consumers hold a positive

evaluation of a brand, shaped by product experience, perceived quality, and positive information from various sources; and uniqueness of brand association, which reflects the distinctive characteristics that differentiate a brand from others, such as product features, visual characteristics, or the experience it offers. In this study, the brand image concept is used to understand how students perceive Mobile Legends as one of the most popular digital games among adolescents.

The Relationship Between Social Media Engagement and Game Image Perception

User engagement on social media, reflected through activities such as viewing content, commenting, liking, and sharing information, enables the exchange of information and experience among users that can ultimately influence perception of a product (Dessart et al., 2015). Schivinski et al. (2021) explained that social media interaction influences the formation of consumer perception of a brand, as social media enables consumers to obtain information not only from companies but also from other users' shared experiences. In the context of digital games, content such as gameplay videos, reviews, strategy discussions, and community interaction circulating on platforms such as YouTube, TikTok, Instagram, and Facebook can shape how players perceive a particular game. Zeqiri (2024) found that user activity on social media significantly affects brand image formation because digital interaction facilitates the exchange of information and experience among consumers, a finding echoed by Nurohman and Riptiono (2021), who found that digital communication activity through social media affects a product's brand image by shaping consumer perceptions of its quality, reputation, and appeal.

Based on the theoretical foundation outlined above, a conceptual framework was developed in which the independent variables—cognitive engagement (X1), affective engagement (X2), and behavioral engagement (X3)—are hypothesized to influence the dependent variable, perceived game image of Mobile Legends: Bang Bang (Y). The conceptual model proposes that the higher the level of student engagement with Mobile Legends content on social media, the greater the likelihood that a particular perception of the game's image will be formed. Based on this framework, the following hypotheses are proposed:
H1: Cognitive engagement (X1) has an effect on the perception of Mobile Legends game image among SMAN 5 Jakarta students.
H2: Affective engagement (X2) has an effect on the perception of Mobile Legends game image among SMAN 5 Jakarta students.
H3: Behavioral engagement (X3) has an effect on the perception of Mobile Legends game image among SMAN 5 Jakarta students.

METHODOLOGY

This study employs a quantitative approach, which is used to test relationships between variables through numerical data processing and statistical analysis. This approach was chosen because the study focuses on objectively and measurably testing the effect of social media engagement on the perceived game image of Mobile Legends: Bang Bang. According to Creswell

(2018), quantitative research is used to test theory by examining the relationships among variables measured with research instruments and analyzed using statistical techniques. The research design used is a quantitative survey method, in which data were obtained from respondents through a questionnaire containing statements related to the research variables. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the assistance of SmartPLS software, a method chosen for its ability to simultaneously test relationships between latent variables and assess the validity and reliability of constructs.

The independent variables in this study consist of social media engagement, comprising cognitive engagement (X1), affective engagement (X2), and behavioral engagement (X3), while the dependent variable is the perceived game image of Mobile Legends (Y). Each variable was measured using a five-point Likert scale, with indicators adapted from Schivinski et al. (2021) and Johnston (2023) for cognitive and affective engagement (attention, information processing, and content comprehension for the former; enjoyment, emotional interest, and emotional attachment for the latter); from Dessart et al. (2015) for behavioral engagement (consumption, contribution, and creation); and from Keller (2013) and Kotler and Keller (2022) for perceived game image (strength, favorability, and uniqueness of brand association).

The population of this study consists of all students of SMAN 5 Jakarta who use social media and have been exposed to Mobile Legends content on social media. A purposive sampling technique was used, with respondents required to be active students of SMAN 5 Jakarta, to own a social media account, to have viewed or accessed content related to Mobile Legends on social media, and to be willing to participate as respondents. Owing to time and access constraints, the sample was drawn from a single class of students meeting these criteria, resulting in a final sample of 30 respondents.

Data analysis employed PLS-SEM with SmartPLS software, a method well suited to studies with relatively small sample sizes and which does not require normally distributed data. The analysis was conducted in two stages: evaluation of the measurement model (outer model) and evaluation of the structural model (inner model). The outer model evaluation tested convergent validity (outer loadings expected to exceed 0.70 and Average Variance Extracted, AVE, expected to exceed 0.50), discriminant validity, and construct reliability (Composite Reliability expected to exceed 0.70 and Cronbach's Alpha expected to exceed 0.60). The inner model evaluation tested the structural relationships among latent variables through the R-square (R^2) value, path coefficients, and hypothesis significance via a bootstrapping procedure, with hypotheses accepted when the T-statistic exceeded 1.96 and the p-value was below 0.05.

RESEARCH RESULT

The object of this study is Mobile Legends: Bang Bang, an MOBA game developed and published by Moonton since 2016 that has grown into one of the most popular online games in Southeast Asia, including Indonesia, supported by an active esports ecosystem through the Mobile Legends Professional League (MPL) (Ong et al., 2023; Nathanel & Otok, 2025; Putri & Kuswinarno, 2024). The

game also maintains a highly active digital community across platforms such as YouTube, TikTok, Instagram, and Facebook, which serves as a primary source of information and impression formation for players. The research subjects were 30 students of SMAN 5 Jakarta selected through purposive sampling, all of whom were active social media users exposed to Mobile Legends content. Data were processed using PLS-SEM with the assistance of SmartPLS 4.

Structural Model (Inner Model) and Hypothesis Testing

The structural model evaluation produced an R-square (R^2) value of 0.416 (adjusted $R^2 = 0.349$) for the perceived game image variable (Y). Following Chin's (1998) criteria, this value falls into the moderate category, indicating that the three social media engagement dimensions jointly explain approximately 41.6% of the variance in students' perceptions of Mobile Legends' game image, with the remaining 58.4% attributable to factors outside the model, such as direct gameplay experience, peer recommendation, or the game's general reputation. The results of hypothesis testing through the bootstrapping procedure are presented in Table 1.

Table 1. Hypothesis Testing Results (Path Coefficients)

Hypothesis	**Path**	**β**	**T-Statistics**	**P-Values**	**Result**
H1	Cognitive Engagement (X1) → Game Image (Y)	0.398	2.026	0.043	Accepted
H2	Affective Engagement (X2) → Game Image (Y)	0.048	0.193	0.847	Rejected
H3	Behavioral Engagement (X3) → Game Image (Y)	0.292	1.372	0.170	Rejected

Source: SmartPLS 4 data processing results, 2026

As shown in Table 1, only H1 is supported: cognitive engagement (X1) has a significant effect on perceived game image ($\beta = 0.398$; $t = 2.026 > 1.96$; $p = 0.043 < 0.05$), with an effect size (f^2) of 0.156, classified as medium-to-large according to Cohen (1988). H2 and H3 are not statistically supported. Affective engagement (X2) shows a very small and non-significant path coefficient ($\beta = 0.048$; $t = 0.193$; $p = 0.847$; $f^2 = 0.002$, negligible), while behavioral engagement (X3) shows the second-largest path coefficient ($\beta = 0.292$) and a small-to-medium effect size ($f^2 = 0.088$), but does not reach conventional significance ($t = 1.372 < 1.96$; $p = 0.170 > 0.05$).

Measurement Model (Outer Model)

Convergent validity was assessed through outer loadings, expected to exceed 0.70 (Hair et al., 2022), with results presented in Table 2.

Table 2. Outer Loading Results

Indicator	Latent Variable	Loading	T-Stat.	P-Value
X1.1	Cognitive Engagement	0.790	5.312	<0.001
X1.2	Cognitive Engagement	0.867	9.843	<0.001
X1.3	Cognitive Engagement	0.751	6.093	<0.001
X2.1	Affective Engagement	0.601	1.858	0.063
X2.2	Affective Engagement	0.791	3.947	<0.001
X2.3	Affective Engagement	0.698	2.948	0.003
X3.1	Behavioral Engagement	0.463	1.473	0.141
X3.2	Behavioral Engagement	0.781	5.996	<0.001
X3.3	Behavioral Engagement	0.783	4.675	<0.001
Y1	Game Image	0.786	6.197	<0.001
Y2	Game Image	0.696	5.136	<0.001
Y3	Game Image	0.874	17.808	<0.001

Source: SmartPLS 4 data processing results, 2026

Most indicators show loadings above 0.70 and are statistically significant ($p < 0.05$). Two indicators fall below this threshold—X2.1 (0.601; $p = 0.063$) under affective engagement and X3.1 (0.463; $p = 0.141$) under behavioral engagement—but were retained because their loadings remain within an acceptable range (> 0.40; Hair et al., 2022) and to preserve the content validity of the consumption, contribution, and creation indicators (Dessart et al., 2015) and the cognitive-affective engagement indicators (Schivinski et al., 2021; Johnston, 2023). Reliability and AVE results are presented in Table 3.

Table 3. Reliability and Convergent Validity Results

Variable	Cronbach's α	CR (rho_a)	CR (rho_c)	AVE
Cognitive Engagement (X1)	0.734	0.761	0.845	0.647
Affective Engagement (X2)	0.493	0.516	0.741	0.491
Behavioral Engagement (X3)	0.480	0.521	0.725	0.479
Game Image (Y)	0.698	0.752	0.830	0.622

Source: SmartPLS 4 data processing results, 2026

Composite Reliability (rho_c) for all constructs exceeds 0.70 (ranging from 0.725 to 0.845), satisfying the required reliability criterion (Hair et al., 2022). Cronbach's Alpha for affective engagement (0.493) and behavioral engagement (0.480) falls below the conventional 0.60 threshold, a common occurrence for constructs with few indicators, given that Cronbach's Alpha tends to be more conservative than Composite Reliability, which is therefore recommended as the

primary reliability reference in PLS-SEM (Hair et al., 2022). AVE values show that cognitive engagement (0.647) and game image (0.622) meet the 0.50 threshold, while affective engagement (0.491) and behavioral engagement (0.479) fall slightly below it, consistent with the lower loadings of X2.1 and X3.1, representing a limitation to be addressed in future instrument refinement.

Discriminant Validity, Multicollinearity, and Model Fit

Discriminant validity was tested using the Fornell-Larcker criterion and the Heterotrait-Monotrait Ratio (HTMT). The Fornell-Larcker criterion requires that the square root of a construct's AVE (the diagonal value) exceed its correlation with other constructs (Fornell & Larcker, 1981). Results are presented in Table 4.

Table 4. Fornell-Larcker Criterion

Variable	X1	X2	X3	Y
Cognitive Engagement (X1)	0.804			
Affective Engagement (X2)	0.580	0.701		
Behavioral Engagement (X3)	0.568	0.557	0.692	
Game Image (Y)	0.592	0.442	0.545	0.789

Source: SmartPLS 4 data processing results, 2026. Diagonal values are the square root of AVE.

As shown in Table 4, the square root of AVE on the diagonal for each variable (0.804 for X1; 0.701 for X2; 0.692 for X3; and 0.789 for Y) exceeds its correlation with other variables, satisfying the Fornell-Larcker criterion. However, the more sensitive HTMT criterion (Henseler et al., 2015), shown in Table 5, presents a different picture.

Table 5. Heterotrait-Monotrait Ratio (HTMT)

Construct Relationship	HTMT Value	Result
Affective Engagement (X2) ↔ Cognitive Engagement (X1)	0.950	Exceeds threshold
Behavioral Engagement (X3) ↔ Cognitive Engagement (X1)	0.984	Exceeds threshold
Behavioral Engagement (X3) ↔ Affective Engagement (X2)	1.166	Exceeds threshold
Game Image (Y) ↔ Cognitive Engagement (X1)	0.776	Meets threshold
Game Image (Y) ↔ Affective Engagement (X2)	0.756	Meets threshold
Game Image (Y) ↔ Behavioral Engagement (X3)	0.855	Meets threshold

Source: SmartPLS 4 data processing results, 2026. Conservative HTMT threshold = 0.90 (Henseler et al., 2015).

The HTMT values among the three engagement dimensions all exceed the conservative threshold of 0.90 (ranging from 0.950 to 1.166), while HTMT values between each engagement dimension and game image fall within the acceptable range (0.756 to 0.855). This indicates considerable conceptual overlap among the three engagement dimensions at the level of respondent perception, even though they are theoretically distinct constructs (Dessart et al., 2015; Schivinski et al., 2021), suggesting that the senior high school respondents in this study may not sharply distinguish between the cognitive, affective, and behavioral aspects of their engagement with Mobile Legends content.

Multicollinearity, assessed via the Variance Inflation Factor (VIF), showed indicator-level VIF values ranging from 1.091 to 1.910, and structural-level VIF values of 1.735, 1.703, and 1.669 for cognitive, affective, and behavioral engagement, respectively—well below the threshold of 5.0 (Hair et al., 2022), indicating no serious multicollinearity issue. Model fit, assessed through the Standardized Root Mean Square Residual (SRMR) and the Normed Fit Index (NFI), produced an SRMR of 0.137, above the ideal threshold of 0.08 (Hu & Bentler, 1999; Henseler et al., 2014), and a relatively low NFI of 0.401. While these results indicate room for model refinement—consistent with the HTMT findings—it should be noted that NFI originates from covariance-based SEM and is regarded as a less central index in PLS-SEM relative to predictive indicators such as R^2 and f^2 (Hair et al., 2022).

Overall, the validity and reliability tests indicate that the research instrument is sufficiently valid and reliable for hypothesis testing, evidenced by convergent validity in most indicators, satisfactory composite reliability across all constructs, and a satisfied Fornell-Larcker criterion. Nonetheless, several limitations remain, including slightly below-ideal loadings and AVE values for indicators X2.1 and X3.1, conceptual overlap among engagement dimensions under the HTMT criterion, and a suboptimal model fit—largely attributable to the relatively small sample size (n = 30), suggesting that future research should employ a larger sample to obtain more stable and accurate parameter estimates.

DISCUSSION

The finding that cognitive engagement is the sole significant predictor of perceived game image is consistent with the core assumption of Uses and Gratifications Theory (Katz et al., 1974) discussed earlier, namely that media users actively select and process content to satisfy specific cognitive needs, and that this gratification process ultimately shapes impressions of the object consumed. The dominance of cognitive engagement suggests that students' attention to and processing of information in Mobile Legends content on social media (Schivinski et al., 2021; Johnston, 2023) constitutes the primary pathway through which game image perception is formed, consistent with Zeqiri (2024), who found that digital interaction enables consumers to obtain information and symbolic experience that shape brand image. The statistical non-significance of affective and behavioral engagement does not necessarily imply that these dimensions are irrelevant; the relatively small sample size (n = 30) limits the statistical power of the bootstrapping procedure to detect small-to-medium

effects (Hair et al., 2022), particularly for behavioral engagement, which still shows a numerically non-negligible contribution.

Ritual as Action

An important development within Uses and Gratifications Theory is the distinction between instrumental and ritualized media use. Rubin (1984) explained that instrumental media use is goal-directed, such as seeking specific information, whereas ritualized media use is more habitual and repetitive, performed as part of everyday routine and not necessarily driven by a specific informational goal. Here, "ritual" is understood not in a religious or ceremonial sense but as a patterned, recurring form of media action—that is, ritual as action. The behavioral engagement dimension (X3) in this study, operationalized through the patterns of consumption, contribution, and creation (Dessart et al., 2015), essentially represents such repeated actions—for example, habitually watching Mobile Legends gameplay videos, commenting on or liking related posts, and sharing or creating similar content. These activities are generally performed repeatedly as part of students' social media routines, and can therefore be regarded as a form of "ritual action" in the context of digital content consumption, rather than activities driven purely by a specific informational need on each occasion.

Behavioral engagement shows the second-largest path coefficient (β = 0.292) with a non-negligible effect size (f^2 = 0.088), although not yet statistically significant in this sample. This finding may be interpreted as indicating that ritualized behavioral engagement functions as a "raw-material provider" of exposure to Mobile Legends content, which is then cognitively processed by students (through the attention and information-processing mechanisms of cognitive engagement) into a more structured image perception. In other words, ritual as action does not directly and significantly shape game image perception on its own, but rather sustains students' ongoing exposure to Mobile Legends content, thereby creating the conditions under which cognitive processing can form impressions and evaluations of the game. This interpretation aligns with Ruggiero's (2000) view that new media use can fulfil users' needs even when not explicitly goal-driven, such that seemingly repetitive, routine ritual activity nonetheless retains function and meaning for its users.

It should be emphasized that this interpretation of ritual as action is exploratory and contextual, given that the path from behavioral engagement to game image perception has not yet reached statistical significance in this study. This finding is therefore best regarded as a direction for theoretical discussion that opens an avenue for future research to examine more deeply—for instance, by enlarging the sample size or introducing a mediating variable linking ritual action (behavioral engagement) and cognitive processing (cognitive engagement) in the formation of digital product image perception.

CONCLUSIONS AND RECOMMENDATIONS

This study aimed to analyze the effect of Mobile Legends: Bang Bang social media engagement on the perception of game image among SMAN 5 Jakarta students, in response to the research question of whether such

engagement influences game image perception. Based on the SEM-PLS analysis, the following conclusions can be drawn.

Cognitive engagement (X1) was found to have a positive and significant effect on perceived Mobile Legends game image ($\beta = 0.398$; $t = 2.026 > 1.96$; $p = 0.043 < 0.05$), supporting H1. This indicates that the greater students' attention to and processing of Mobile Legends content on social media, the stronger their perception of the game's image.

Affective engagement (X2) was not found to have a significant effect on perceived game image ($\beta = 0.048$; $t = 0.193 < 1.96$; $p = 0.847 > 0.05$), and H2 is rejected. Students' emotional responses to Mobile Legends content, within this sample, were not strong enough to directly shape game image perception.

Behavioral engagement (X3) likewise showed no statistically significant effect on perceived game image ($\beta = 0.292$; $t = 1.372 < 1.96$; $p = 0.170 > 0.05$), and H3 is rejected. Nonetheless, this dimension showed the second-largest path coefficient and effect size, indicating a numerical contribution not yet statistically confirmed at this sample size, consistent with the ritual-as-action discussion above.

Collectively, the three social media engagement dimensions explain 41.6% of the variance in perceived game image ($R^2 = 0.416$), classified as moderate according to Chin (1998), and the research instrument was generally found to be sufficiently valid and reliable.

In conclusion, Mobile Legends social media engagement does influence the perception of game image among SMAN 5 Jakarta students, although this influence is not uniform across its three dimensions: a statistically significant effect was found only for the cognitive dimension, while the affective and behavioral dimensions contributed numerically but not significantly within this sample. These findings address the research question posed at the outset and affirm the relevance of Uses and Gratifications Theory in explaining how active engagement of younger generations with social media content shapes their perception of a digital entertainment product's image, particularly through the pathway of cognitive information processing.

Practically, these findings suggest that developers, publishers, and community managers seeking to strengthen Mobile Legends' brand image should prioritize content strategies that enhance informational clarity and ease of processing—such as well-structured gameplay tutorials, clear strategy explanations, and easily digestible updates—as these appear to translate most directly into favorable perceptions among adolescent audiences, while emotionally engaging and participatory content may still play a complementary role in sustaining overall exposure.

ADVANCED RESEARCH

This study has several limitations related to sample size, discriminant validity among the social media engagement dimensions, and model fit. Based on these limitations, the following directions are recommended for future research.

Future studies should enlarge the sample size, as the relatively small sample ($n = 30$) in this study limited the statistical power of the bootstrapping

procedure to detect small-to-medium effects, particularly for the affective and behavioral engagement dimensions.

Researchers should also refine the measurement indicators, as indicators X2.1 and X3.1 showed outer loadings below the ideal threshold of 0.70, suggesting a need to revisit the corresponding questionnaire items to improve convergent validity.

Future work should address the conceptual overlap among the social media engagement dimensions revealed by the HTMT test, for example by modeling the three dimensions as a higher-order construct or refining the measurement indicators to achieve clearer differentiation between dimensions. Researchers may also incorporate mediating or moderating variables, testing whether the effect of behavioral engagement on game image perception operates indirectly through cognitive engagement as a mediator, to further examine the ritual-as-action interpretation proposed in this study.

Future research should expand the population and scope of the study, as this research was limited to students from a single class at SMAN 5 Jakarta; broader sampling across multiple schools, regions, or age groups would allow for greater generalizability.

A longitudinal research design is also recommended, as the cross-sectional design used here captures engagement and perception at only a single point in time; a longitudinal design would allow researchers to observe how social media engagement and game image perception evolve over time and support stronger causal inference.

Finally, future studies could broaden the research object to test whether the dominance of cognitive engagement found here also applies to other mobile games or digital entertainment products beyond Mobile Legends: Bang Bang, in order to assess the generalizability of these findings.

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