

Developing an Integrated HMSAM-FoMO Model and Its Instrument Testing for Social Live Streaming

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Abstract- Context: The rapid growth of social live streaming platforms has transformed how individuals interact and experience digital entertainment. Despite this expansion, prior studies have largely focused on commercial or gaming-related live streaming, leaving the social and hedonic aspects underexplored. Furthermore, psychological mechanisms such as the Fear of Missing Out (FoMO) have received limited attention in explaining behavioral intention in live streaming environments. **Objective:** This study aims to develop and validate an integrated model combining the Hedonic-Motivation System Adoption Model (HMSAM) with FoMO to explain users' behavioral intention in social live streaming contexts. **Method:** A quantitative approach was employed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with data from 57 Indonesian social media users. The research process consisted of three stages: conceptual integration, instrument operationalization, and empirical validation, supported by expert qualitative evaluation to enhance construct clarity and theoretical consistency. **Results:** The findings show that hedonic motivations such as joy, curiosity, and immersion strongly influence behavioral intention, while FoMO acts both as a direct determinant and as a mediator linking hedonic motivations to user engagement. Two indicators (CTR2 and CTR4) were removed for weak conceptual fit, and constructs with AVE values slightly below 0.50 (Control and Perceived Usefulness) were retained for theoretical reasons. The integrated HMSAM-FoMO model explained 64.4% of the variance in behavioral intention, demonstrating strong explanatory power. **Conclusions:** The study contributes theoretically by extending HMSAM with FoMO to capture both emotional enjoyment and psychological tension in digital engagement. It also provides practical guidance for designing psychologically balanced live streaming experiences that enhance enjoyment while minimizing FoMO-induced anxiety. These findings offer a foundation for future research and policy development toward healthier digital participation.

Keywords: Model development, HMSAM, Fear of missing out, Social live streaming, Instrument validation.

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1. Introduction

The rapid growth of digital technologies has reshaped how people access entertainment and information. With over 5.24 billion social media users worldwide, and approximately 1.2 billion engaging with live streaming monthly, this phenomenon has become central to digital life [1]. In Indonesia alone, 143 million individuals actively use social media, with 36.5% regularly watching live streams [2]. Unlike pre-recorded content, live streaming offers audiences real-time, authentic, and interactive experiences. Beyond functional benefits, research shows that user motivations are often driven by hedonic and emotional factors such as enjoyment, curiosity, and parasocial interactions [3], [4], [5]. At the same time, the real-time and transient nature of live streaming creates a psychological concern known as fear of missing out (FoMO), which refers to anxiety about missing social experiences or important information [6], [7], [8].

Despite growing attention, existing studies have focused predominantly on commercial or gaming live streaming, where economic incentives dominate user behavior [9], [10], [11]. In contrast, social live streaming, characterized by spontaneity, entertainment, and emotional engagement, remains underexplored, particularly from psychological and hedonic-motivation perspectives. Previous models have examined FoMO in relation to social media addiction or compulsive use [12], [13], [14], but little empirical work has combined FoMO with hedonic system adoption mechanisms to explain how emotional enjoyment and psychological pressure jointly shape user intention.

To address these gaps, this study integrates the Hedonic-Motivation System Adoption Model (HMSAM) [15] with FoMO as a mediating psychological construct, drawing on studies by Ji et al. [16]. HMSAM emphasizes intrinsic motivations such as joy, curiosity, control, and immersion as core drivers of system adoption [17], while FoMO introduces a psychological lens that captures how anxiety and social comparison transform these motivations into sustained behavioral intention. This integration represents a conceptual advancement by extending HMSAM with affective and anxiety-based elements that are increasingly relevant in contemporary digital interactions. Moreover, it offers a stronger explanatory framework compared to traditional models such as the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) and Uses and Gratifications Theory (UGT). Unlike UTAUT2, which focuses on utilitarian and performance-based factors, and UGT, which emphasizes content-driven gratifications, the integrated HMSAM–FoMO model captures both hedonic enjoyment and psychological tension, more accurately reflecting user behavior in social live streaming contexts.

Methodologically, this study employs a quantitative approach using Partial Least Squares-Structural Equation Modeling (PLS-SEM) to test the integrated model with data from Indonesian social media users. PLS-SEM is particularly suited for exploratory models with small sample sizes and complex relationships [18], [19]. This research has three purposes: (1) to develop an integrated model combining hedonic motivations and FoMO in the context of social live streaming, (2) to operationalize this model into measurable constructs, and (3) to conduct initial validation of the measurement instrument. This work contributes theoretically by extending HMSAM through psychological integration and practically by providing insights for platform developers and policymakers to design engagement mechanisms that enhance enjoyment while mitigating FoMO-related risks. Accordingly, this article addresses three research questions: (1) How can HMSAM and FoMO be integrated into a conceptual model for social live streaming? (2) How can the constructs and indicators of this model be operationalized into measurable items? (3) What are the results of initial validation of this instrument? The following sections present the research methods, results of model development and instrument validation, and conclude with discussions on contributions, limitations, and future research directions.

2. Methods

This study employed a quantitative research design to examine the proposed research model integrating the Hedonic-Motivation System Adoption Model (HMSAM) with the concept of Fear of Missing Out (FoMO).

As shown in Figure 1, the research followed three primary stages: conceptual development, operationalization, and validation [20]. At the conceptual stage, a theoretical model was constructed by combining the HMSAM dimensions of perceived ease of use, perceived usefulness, joy, curiosity, control, and immersion with FoMO as a mediating variable and behavioral intention as the outcome. Hypotheses were derived from prior empirical and theoretical studies to ensure conceptual validity.

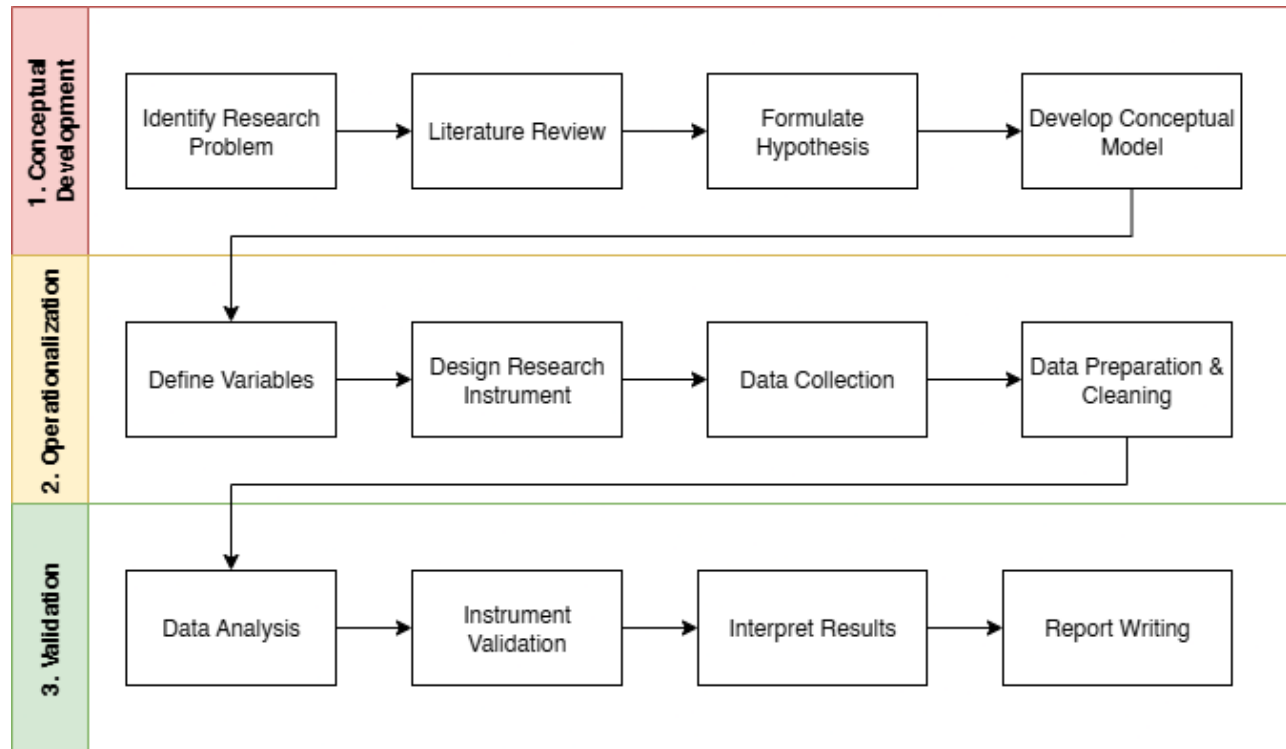


Figure 1. Research Procedure.

In the operationalization stage, the constructs were transformed into measurable indicators. Each variable was defined based on established scales in previous literature [8], [15], [16], [17], [21], and adapted to the context of social live streaming. The final survey instrument consisted of 45 items across eight constructs, measured using a five-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5). Demographic questions were also included to capture respondents' age, gender, education, occupation, preferred platforms, and frequency of live streaming usage.

Sampling was conducted using a non-probability, purposive approach targeting active social media users in Indonesia who had watched live streaming on YouTube, TikTok, Instagram, or Facebook within the last three months. Respondents were required to be at least 17 years old to ensure sufficient cognitive maturity in their use of digital media. Data were collected from 57 respondents, consisting of 38 males (66.7%) and 19 females (33.3%). The majority were aged 21–25 years (59.6%), followed by 17–20 years (36.8%), and a small proportion aged 26–35 years (3.6%). Regarding platform preference, YouTube was the most frequently used (61.4%), followed by TikTok (31.6%), Instagram (3.5%), and Facebook (3.5%).

Additional descriptive statistics were collected to provide a richer understanding of participants' live streaming behavior. The data show that most respondents used live streaming features 2–3 times per week (36.8%), typically for 30–60 minutes per session (38.6%). Over the past three months, more than one-third of respondents reported watching live streaming over 10 times (35.1%), and gaming-related content (54.4%) emerged as the most popular category, followed by entertainment (15.8%), social interaction (15.8%), online shopping (12.3%), and educational content (1.8%).

These findings indicate that participants were active and experienced users, suitable for evaluating the constructs of hedonic motivation and FoMO in social live streaming contexts.

The Indonesian context provides an important and relevant background for this study. Indonesia has a high level of social media penetration and rapid growth in live streaming usage, particularly among younger audiences. The strong social orientation and collectivistic tendencies within Indonesian digital culture amplify users' sensitivity to social connectedness and real-time interaction. These characteristics make FoMO especially salient as users experience both enjoyment and social pressure to remain continuously engaged. With most respondents using platforms such as YouTube and TikTok, which emphasize spontaneous and interactive content, this context offers a meaningful environment to examine how hedonic motivations and psychological tension jointly shape behavioral intentions in social live streaming.

The relatively small sample size is considered acceptable given the study's exploratory and model validation objectives. PLS-SEM was chosen because it is robust in handling small to moderate samples, non-normal data, and complex model structures [18], [19]. The focus of this research is to establish initial construct validity and identify areas for refinement prior to large-scale testing, ensuring both theoretical and empirical soundness.

Before the analysis began, the instrument was evaluated to assess reliability and validity. The analysis used Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS 4, following a two-step evaluation procedure. First, the measurement model was tested for convergent and discriminant validity as well as construct reliability. Second, the structural model was assessed using path coefficients, R^2 , f^2 , Q^2 , and bootstrapping procedures for hypothesis testing. These steps ensured methodological transparency and strengthened the credibility of the findings. In addition to the quantitative validation, semi-structured expert interviews were conducted with three doctoral-level academics to evaluate conceptual clarity and theoretical consistency of the instrument, complementing the statistical results with qualitative insights [22].

3. Results

3.1. Model Development

The research model integrates the Hedonic-Motivation System Adoption Model (HMSAM) and Fear of Missing Out (FoMO) to explain behavioral intention in social live streaming contexts. Live streaming is a hedonic, socially dynamic, and time-sensitive activity, which makes this integration both relevant and necessary. The HMSAM emphasizes cognitive absorption through joy, curiosity, control, and immersion [15], while FoMO captures the psychological anxiety of missing ongoing social experiences [8]. Recent work by Ji et al. [16] demonstrated that FoMO can mediate the relationship between intrinsic hedonic motivations and behavioral intention, providing a theoretical rationale for its inclusion in the model.

The adoption process followed three steps. First, HMSAM served as the conceptual foundation to capture intrinsic motivations. Second, FoMO was integrated as a psychological mediator linking joy and curiosity to behavioral intention, following prior empirical findings [16]. Third, perceived usefulness and perceived ease of use from the Technology Acceptance Model [21] were retained to connect hedonic dimensions with behavioral outcomes. The final framework consisted of eight constructs and twelve hypotheses (Figure 2).

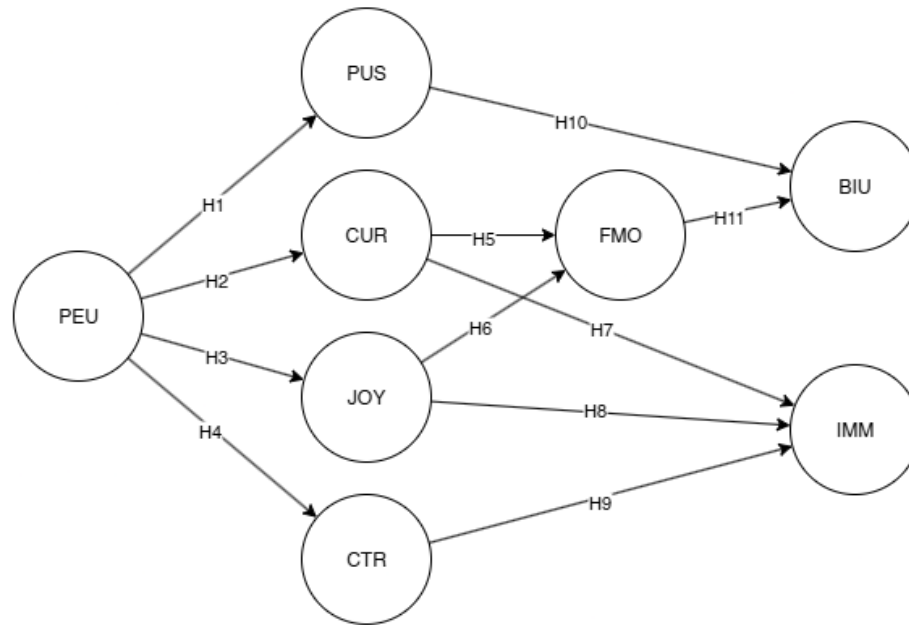


Figure 2. Proposed research model.

3.2. Operationalization Results

The operationalization stage translated theoretical constructs into measurable indicators. A total of eight constructs comprising 45 indicators were included in the survey, measured using a five-point Likert scale ranging from "strongly disagree" to "strongly agree." Variable definitions and indicator items are summarized in Tables 1 and 2. The operationalization was guided by prior validated scales but adjusted linguistically and contextually for social live streaming users in Indonesia.

Table 1. Variable Definitions. [8], [15]

Var.	Definition
PEU	The degree to which live streaming features are clear, understandable, and require little effort to use.
PUS	The extent to which live streaming is perceived as beneficial for entertainment, relaxation, information, effectiveness, productive use of time, and social connectedness.
JOY	The degree of pleasure, excitement, enjoyment, and emotional satisfaction experienced while watching live streaming.
CUR	The intrinsic motivation to explore, seek novelty, and engage with content due to interest and desire for discovery.
CTR	The extent to which users perceive autonomy, customizability, and control over their interactions and viewing decisions.
IMM	The state of deep cognitive and emotional involvement in live streaming, including focus, absorption, flow, and time dissociation.
FMO	The anxiety and compulsion to stay connected to avoid missing important experiences, updates, or social interactions.
BIU	The intention to continue using live streaming, increase usage, recommend it to others, and make it a habit.

Table 2. List of Measurement Items. [8], [15], [16], [17], [21], [23].

Code	Measurement Item
PEU1	"I find it easy to learn how to use live streaming features."
PEU2	"I find it easy to operate live streaming features as I need."
PEU3	"I find the display and instructions in live streaming clear and understandable."
PEU4	"I find live streaming navigation simple."
PEU5	"I find myself quickly getting used to live streaming."
PEU6	"I find live streaming features easy to use."
PUS1	"I find live streaming useful for entertainment."
PUS2	"I find live streaming useful for relaxation."

PUS3	"I find live streaming provides the information I need."
PUS4	"I find live streaming useful in my daily life."
PUS5	"I find live streaming helps me spend my leisure time."
PUS6	"I find live streaming useful for expanding my social connections."
JOY1	"I find using live streaming enjoyable."
JOY2	"I find live streaming entertaining."
JOY3	"I find myself truly enjoying live streaming."
JOY4	"I find myself satisfied after using live streaming."
JOY5	"I find the live streaming experience pleasant."
CUR1	"I find myself curious to keep exploring live streaming."
CUR2	"I find myself eager to discover new things through live streaming."
CUR3	"I find myself driven to learn new things from live streaming."
CUR4	"I find myself interested in live streaming content."
CUR5	"I find live streaming stimulates my curiosity."
CTR1	"I find I am free to choose the live streaming content I watch."
CTR2	"I find I can manage my watching time on live streaming."
CTR3	"I find I have full control over how I use live streaming."
CTR4	"I find I can manage my interactions while watching live streaming."
CTR5	"I find I can use live streaming according to my own preferences."
IMM1	"I find myself fully focused when watching live streaming."
IMM2	"I find myself absorbed when using live streaming."
IMM3	"I find myself losing track of time while watching live streaming."
IMM4	"I find myself feeling present in live streaming."
IMM5	"I find my full attention absorbed in live streaming."
IMM6	"I find live streaming usage makes me immersed."
FMO1	"I find myself worried about missing information if I do not open live streaming."
FMO2	"I find myself left behind compared to others if I do not watch live streaming."
FMO3	"I find myself checking live streaming often to avoid missing updates."
FMO4	"I find it necessary to stay online to avoid missing live streaming information."
FMO5	"I find myself anxious if I do not know what my friends do on live streaming."
FMO6	"I find myself often comparing with others on live streaming."
FMO7	"I find myself afraid of being excluded if I do not follow live streaming trends."
BIU1	"I intend to keep using live streaming."
BIU2	"I plan to use live streaming more often."
BIU3	"I want to continue using live streaming long-term."
BIU4	"I want to recommend live streaming to others."
BIU5	"I want to make live streaming a habit."

3.3. Instrument Testing Results

The measurement model was evaluated in terms of reliability and validity. As shown in Table 3, several indicators fell below the recommended loading threshold of 0.70 and were therefore flagged for removal or revision, including CTR2 (0.277), CTR3 (0.666), CTR4 (0.456), CUR4 (0.623), FMO6 (0.494), PUS1 (0.444), and PUS6 (0.547). The remaining indicators demonstrated acceptable to strong loadings, ranging from 0.704 to 0.971, particularly in the joy and perceived ease of use constructs.

As summarized in Table 4, Cronbach's alpha values ranged from 0.704 to 0.970, composite reliability exceeded 0.75, and AVE values ranged from 0.412 to 0.893. Although Control (AVE = 0.412) and Perceived Usefulness (AVE = 0.480) were slightly below the conventional threshold, both constructs were retained. The decision was based on two considerations: (1) their strong theoretical importance as core HMSAM dimensions that shape intrinsic motivation, and (2) internal consistency evidenced by satisfactory Cronbach's alpha and composite reliability. This indicates that despite modest convergent validity, these constructs remain conceptually integral to the model and will benefit from refinement in future work rather than exclusion.

To complement quantitative findings, a qualitative expert evaluation was conducted to assess the conceptual validity of each weak indicator. Experts classified each item as conceptually weak or conceptually strong but requiring revision. Based on this synthesis, CTR2 (“I find I can manage my watching time on live streaming”) and CTR4 (“I find I can manage my interactions while watching live streaming”) were removed because they lacked a strong conceptual link to user autonomy in the context of social live streaming. Both items represent behavioral regulation rather than perceived system control, which is the core of the HMSAM control dimension. In contrast, CTR3, although below the statistical threshold, was retained for revision due to its conceptual relevance to perceived control. Similarly, CUR4, FMO6, PUS1, and PUS6 were maintained for wording improvement, as experts agreed that their theoretical foundation remains solid and that their relatively low loadings might result from phrasing or contextual interpretation rather than weak conceptual alignment. This combined quantitative and qualitative approach strengthened the content validity of the instrument and provided a clear roadmap for refinement in future applications.

Table 3. Indicator Loadings and Status.

Construct	Indicator	Loading Value	Status
BIU	BIU1	0.824	Accepted
	BIU2	0.928	Accepted
	BIU3	0.891	Accepted
	BIU4	0.735	Accepted
	BIU5	0.831	Accepted
CTR	CTR1	0.736	Accepted
	CTR2	0.277	Rejected
	CTR3	0.666	Rejected
	CTR4	0.456	Rejected
	CTR5	0.887	Accepted
CUR	CUR1	0.936	Accepted
	CUR2	0.754	Accepted
	CUR3	0.901	Accepted
	CUR4	0.623	Rejected
	CUR5	0.777	Accepted
FMO	FMO1	0.721	Accepted
	FMO2	0.900	Accepted
	FMO3	0.898	Accepted
	FMO4	0.845	Accepted
	FMO5	0.802	Accepted
	FMO6	0.494	Rejected
	FMO7	0.801	Accepted
IMM	IMM1	0.787	Accepted
	IMM2	0.821	Accepted
	IMM3	0.842	Accepted
	IMM4	0.771	Accepted
	IMM5	0.800	Accepted
	IMM6	0.816	Accepted
JOY	JOY1	0.971	Accepted
	JOY2	0.948	Accepted
	JOY3	0.957	Accepted
	JOY4	0.902	Accepted
	JOY5	0.946	Accepted
PEU	PEU1	0.935	Accepted
	PEU2	0.945	Accepted
	PEU3	0.963	Accepted
	PEU4	0.929	Accepted
	PEU5	0.905	Accepted
	PEU6	0.897	Accepted

PUS	PUS1	0.444	Rejected
	PUS2	0.748	Accepted
	PUS3	0.794	Accepted
	PUS4	0.704	Accepted
	PUS5	0.833	Accepted
	PUS6	0.547	Rejected

Table 4. Construct Reliability and Validity.

Construct	Cronbach's Alpha	Composite Reliability		AVE
		rho_a	rho_c	
BIU	0.899	0.916	0.925	0.713
CTR	0.704	0.680	0.756	0.412
CUR	0.859	0.869	0.901	0.650
FMO	0.893	0.902	0.919	0.626
IMM	0.898	0.928	0.918	0.650
JOY	0.970	0.971	0.977	0.893
PEU	0.968	0.970	0.974	0.863
PUS	0.774	0.820	0.841	0.480

Table 5. Results of the Rejected Indicators and Expert Interpretation.

Indicator	QUAN	QUAL	Prior Findings	Recommendation
CTR2	Rejection	Rejection	Weak	Rejection
CTR3	Rejection	Revision	Strong	Instrument Revision
CTR4	Rejection	Rejection	Weak	Rejection
CUR4	Rejection	Revision	Strong	Instrument Revision
FMO6	Rejection	Revision	Strong	Instrument Revision
PUS1	Rejection	Revision	Strong	Instrument Revision
PUS6	Rejection	Revision	Strong	Instrument Revision

3.4. Structural Model Results

The structural model (Figure 3) demonstrated significant and theoretically consistent relationships among constructs. Perceived Ease of Use exerted strong positive effects on Perceived Usefulness (0.898), Joy (0.853), and Curiosity (0.782). Both Joy (0.169) and Curiosity (0.357) positively influenced FoMO, indicating that heightened hedonic engagement may trigger social anxiety and a desire to stay continuously connected. Immersion was positively influenced by Joy (0.357), Curiosity (0.294), and Control (0.234). Finally, FoMO (0.233) and Perceived Usefulness (0.695) significantly predicted Behavioral Intention to Use.

The model explained a substantial portion of variance in key endogenous constructs, with $R^2 = 80.6\%$ for Joy, 72.8% for Perceived Usefulness, and 64.4% for Behavioral Intention. These results indicate that the integrated HMSAM–FoMO framework provides a strong explanatory power for behavioral intention in social live streaming contexts.

To ensure transparency, the evaluation results were reported separately for measurement and structural models, avoiding redundancy between instrument validation and hypothesis testing. The outcomes confirm that the developed model is theoretically coherent, statistically adequate, and methodologically suitable for future large-scale validation.

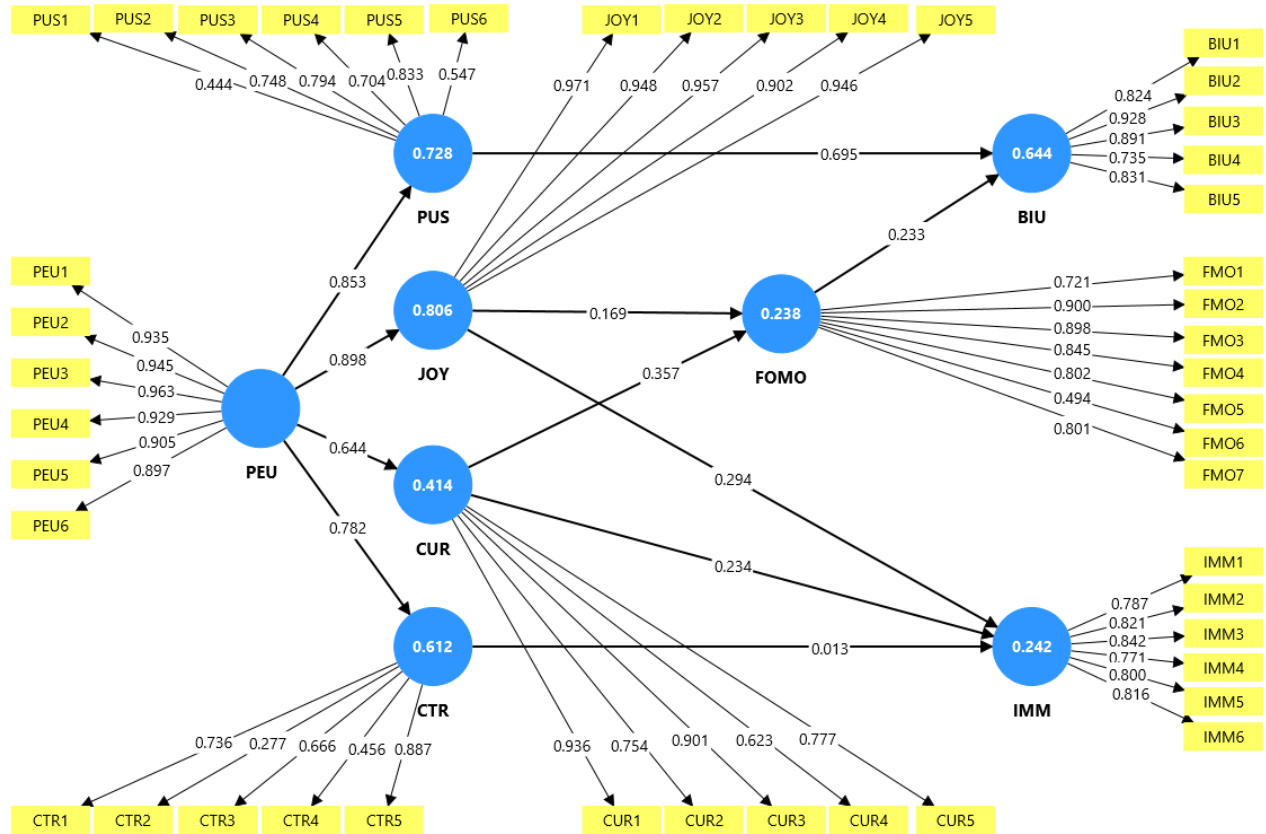


Figure 3. Results of the Statistical Calculation.

4. Discussion

This study directly addresses the research gaps identified in the introduction. Previous research primarily focused on commercial or gaming-related live streaming [9], [10], [11], while the social and entertainment-oriented context remained underexplored. The present findings provide initial evidence that hedonic motivations, particularly joy, curiosity, and immersion, play a central role in driving behavioral intention within social live streaming environments. Furthermore, this study expands existing knowledge by integrating FoMO into the HMSAM framework, highlighting the psychological dimension that links hedonic enjoyment with social anxiety and continuous engagement.

The analysis confirmed the reliability and validity of the measurement instrument. As presented in Table 3, several indicators exhibited loadings below the recommended threshold, yet decisions on their retention or removal were supported by both empirical and theoretical evaluations. CTR2 and CTR4 were rejected because they were conceptually weak and failed to represent perceived control in the HMSAM sense, while CTR3, CUR4, FMO6, PUS1, and PUS6 were retained for revision based on their theoretical strength despite weak statistical support. Although the constructs of Control and Perceived Usefulness presented AVE values below 0.50, they were maintained due to their theoretical significance within the model. This process illustrates the combined use of statistical evidence and conceptual justification, which enhances the validity of the measurement instrument and ensures theoretical coherence.

From a theoretical standpoint, the integration of FoMO into HMSAM demonstrates the value of combining hedonic and psychological mechanisms in explaining digital behavior. Compared to conventional frameworks such as the Technology Acceptance Model (TAM) and UTAUT2, which emphasize utilitarian and performance-based factors, the integrated HMSAM-FoMO model provides a more holistic view by capturing emotional engagement and social pressure

simultaneously. It also extends beyond the traditional Uses and Gratifications Theory (UGT) by addressing not only the pursuit of pleasure and information but also the psychological tension arising from social comparison and the need for connectivity. Therefore, this integration offers an enriched understanding of how users' enjoyment, curiosity, and anxiety interact to shape sustained behavioral intention in live streaming environments.

In addition to its theoretical contributions, the findings offer practical implications. For platform developers, the results highlight the importance of designing psychologically balanced engagement features that promote enjoyment while minimizing FoMO-driven anxiety and compulsive use. Features such as adjustable notification settings, content moderation, or time management tools may help maintain user engagement without encouraging excessive dependence. For policymakers and educators, the study underscores the need to foster digital well-being awareness, particularly among young users who are highly susceptible to FoMO effects.

However, FoMO should not be viewed solely as a positive motivator. While it can stimulate curiosity and social participation, it may also lead to compulsive usage, emotional fatigue, and social anxiety, particularly in highly interactive environments like live streaming. This dual nature of FoMO suggests that hedonic enjoyment and psychological tension coexist and must be balanced in both theoretical models and practical design strategies.

The cultural context of Indonesia adds further nuance to the interpretation of findings. Indonesia's collectivistic culture and high social media engagement make FoMO a salient psychological driver of digital behavior. Users' strong desire for social inclusion and real-time interaction intensifies both enjoyment and anxiety, shaping unique patterns of participation that may differ from those in more individualistic societies. Consequently, the findings of this study should be interpreted within this cultural boundary. While the integrated HMSAM-FoMO model demonstrates strong explanatory power, its generalizability to other cultural or technological settings requires further investigation.

Methodologically, this study provides an example of how quantitative validation through PLS-SEM can be effectively complemented by expert qualitative review. This multi-method validation process strengthens the robustness of model development and highlights the potential of combining statistical rigor with theoretical reasoning. Nevertheless, several limitations remain. The sample size is relatively small, limiting the statistical power and generalizability of findings. The study also represents an initial validation phase, requiring further refinement of the measurement instrument and larger-scale testing to confirm the relationships identified.

Future research should build on these findings by employing larger and more diverse samples, testing the model across different cultural contexts, and exploring additional moderating variables such as gender, age, or type of live streaming platform. Longitudinal approaches would also help to capture temporal dynamics between hedonic motivation, FoMO, and behavioral intention. Despite these limitations, the current study establishes a strong theoretical and methodological foundation for future research on digital engagement and psychological drivers in social live streaming.

5. Conclusions

This study developed and validated an integrated model combining the Hedonic-Motivation System Adoption Model (HMSAM) with the Fear of Missing Out (FoMO) construct to explain behavioral intention in social live streaming contexts. The results demonstrate that hedonic motivations, particularly joy, curiosity, and immersion, are central drivers of user engagement, while FoMO functions both as a direct predictor and as a psychological mediator that links hedonic motivations to behavioral intention. These findings reveal that user engagement in social live streaming is shaped not only by enjoyment but also by psychological tension to remain socially connected and avoid exclusion.

Methodologically, the study employed PLS-SEM, complemented by expert evaluation to enhance conceptual validity. Most constructs achieved acceptable reliability and validity, though several indicators required refinement. Indicators CTR2 and CTR4 were removed due to weak conceptual grounding, while CTR3, CUR4, FMO6, PUS1, and PUS6 were

retained for future revision. Control and Perceived Usefulness were maintained despite slightly lower AVE values due to their theoretical relevance in HMSAM.

Theoretically, this research extends HMSAM with FoMO, creating a more comprehensive framework that captures both emotional enjoyment and psychological tension. This integration provides a stronger explanatory model than conventional frameworks such as TAM or UTAUT2, which focus primarily on utilitarian factors, and advances beyond UGT by addressing anxiety-based motivations alongside gratifications. The integrated model thus offers nuanced understanding of user behavior in hedonic systems, particularly within socially interactive platforms.

Practically, the findings provide insights for platform developers and policymakers. Developers should design balanced engagement mechanisms that enhance enjoyment while minimizing FoMO-driven anxiety. This may include features that encourage mindful consumption, flexible viewing options, or notification management. For policymakers and educators, the results highlight the importance of digital well-being initiatives, particularly among younger users more susceptible to FoMO-related effects.

This study has limitations. The relatively small sample size limits statistical generalizability, and the findings should be interpreted within the context of Indonesian digital culture, where collectivistic values and high social connectivity intensify FoMO dynamics. As this represents an initial validation phase, future research should refine the identified indicators, expand the sample to include diverse populations, and test the model across different cultural and technological settings. Longitudinal or experimental designs are recommended to explore causal relationships and temporal evolution of FoMO and hedonic motivations.

In conclusion, this study provides a theoretically grounded and empirically supported framework that advances understanding of hedonic system adoption by integrating psychological drivers such as FoMO. It establishes a foundation for future empirical testing and offers practical guidance for designing more engaging and psychologically sustainable digital experiences. This research contributes to both theoretical enrichment of technology adoption literature and promotion of healthier participation in social live streaming.

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