SHORT VIDEO APPLICATION USAGE AND FLOW EFFECT ON IMPULSE BUY

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Abstract

Mobile Short Video Applications (MSA), offering short video content and often including referral and commercial features, have attracted a substantial user base, appealing to marketers. However, previous research has not specifically focused on how the use of MSA can influence impulsive buying. Therefore, this research aims to fill this gap by integrating the concept of flow (intense engagement with an activity) into the Stimulus-Organism-Response (SOR) Model. In this context, the utilization of MSA serves as the Stimulus, while flow is divided into enjoyment, concentration, and time distortion, acting as the Organism. The observed Response is impulsive buying. A survey-based questionnaire research method was employed, with a sample of 190 university students. Structural equation modeling (SEM) techniques were used to examine the relationships among the constructs, complemented by qualitative analysis. The research findings indicate that the use of MSA significantly influences the experience of flow, which, in turn, affects impulsive purchasing behavior. Flow (enjoyment) exerts the strongest influence on impulsive buying (0.459 correlation), compared to concentration (0.204) and time distortion (0.212). Enjoyment also mediates the relationship between MSA usage and impulsive purchasing. Users tended to engage in spontaneous and unplanned impulsive purchases when they were in a heightened state of flow, predominantly triggered by enjoyment while using MSA, as opposed to concentration or time distortion. The testing model is valid and reliable within a statistical confidence level exceeding 90%, explaining 29.5% of the variance in impulse buying.

Keywords: MSA usage, SOR model, flow, impulse buy

INTRODUCTION

MSA has seamlessly integrated into individuals' daily routines, attracting a vast user base that devotes substantial time to its usage (Statista, 2023). This phenomenon presents a promising opportunity for marketers, as the substantial user population holds the potential to constitute a distinct market segment within the realm of social commerce (Turban et al., 2016). MSA, as part of smartphones, may function as a tool capable of igniting impulsive buying behavior among its users (Bozaci, 2020). This potential is particularly advantageous, as products sold without much contemplation or prior planning tend to yield higher sales and profitability (Iyer et al., 2020).

While prior research has explored impulsive purchasing behavior in the context of smartphones, the specific focus on MSA's role in influencing impulsive buying within users has been scarce. This study seeks to address this gap in knowledge by employing the Stimulus-Organism-Response (SOR) Model framework as a conceptual tool to elucidate impulsive buying behavior stemming from users' interactions with MSAs (Le et al., 2022).

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The SOR model dissects the process into three distinct phases: the presence of stimuli, their impact on the organism, and the subsequent response. Within the context of this research, the response pertains to impulsive buying, the organism's influence revolves around the flow state, and the stimulus arises from MSA utilization. The flow state is characterized by a person's intense engagement with an activity, to the extent that they become completely absorbed, disregarding both time and their immediate environment (Shahpasandi et al., 2020). Notably, this factor has received limited attention in the realm of impulsive buying in previous meta-research (Redine et al., 2023). Consequently, it is integrated into this study to address the existing gap in understanding impulsive purchases induced by the use of short video applications, such as MSA.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Impulse buying is marked by spontaneous, unplanned purchases driven primarily by hedonic desires, with little consideration given to potential consequences. This behavior aims to provide immediate satisfaction and evoke positive emotions, catering to the desire for instant gratification (Chan et al., 2017).

In the context of online purchases, especially when interacting with MSA, this phenomenon takes on a unique dimension. MSAs offer a variety of stimuli to users, ranging from content tailored to individual preferences based on past usage algorithms to captivating product presentations and concise video clips that require minimal time commitment. The confluence of these features has the potential to induce users to prolong their engagement with MSA and enter a sustained state of flow during its use.

Flow is a psychological state characterized by deep engagement and intense focus on an activity, often leading to a sense of timelessness and heightened satisfaction. In a state of flow, consumers are more likely to make impulsive, less rational decisions, potentially resulting in purchases they had not previously considered (Panda & Pandey, 2017; Barta et al., 2022).

When users derive pleasurable experiences from viewing short videos on MSA, they are inclined to extend their viewing sessions. The brief duration of MSA videos is designed to prevent boredom, allowing users to effortlessly continue swiping through videos. The combination of these two factors facilitates extended usage with minimal exertion. These three elements collectively contribute to the flow state, which can be subdivided into three key components: enjoyment, concentration, and time distortion (Qin et al., 2022). Therefore, the research hypothesis is formulated as follows:

H_{1a}: Flow (enjoyment) affects impulse buy.
H_{1b}: Flow (concentration) affects impulse buy.
H_{1c}: Flow (time distortion) affects impulse buy.

Flow can be induced by activities like MSA usage, with research indicating a robust and positive correlation (Zhao & Wagner, 2023; Huang et al., 2022). Consequently, the following hypotheses are formulated, with an additional exploration of mediating relationships:

H_{2a}: MSA usage affects flow (enjoyment).
H_{2b}: MSA usage affects flow (concentration).
H_{2c}: MSA usage affects flow (time distortion).
H_{3a}: Impulse buy is mediated by flow (enjoyment).
H_{3b}: Impulse buy is mediated by flow (concentration).
H_{3c}: Impulse buy is mediated by flow (time distortion)

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The constructs were tested using the SOR framework where SOR is stimulus, organism, and reaction. The SOR model describes how environmental stimuli (S) affect an individual's internal state (O), which then results in a behavioral response (R). In the context of using MSA on smart devices, the stimuli are features of the device or application (S), which trigger affective and cognitive states in users (O), to trigger impulse purchases (R) (Redine et al., 2023)(Chan et al., 2017). The SOR model and the relationship between constructs can be modeled as follows on the next page (figure 1).

RESEARCH METHOD

The research employed quantitative research methods, utilizing a direct data collection approach through surveys with questionnaire media. Additionally, qualitative components, such as focused group discussions, were incorporated to refine measurement instruments and delve deeper into the survey findings (Creswell, 2014; Sekaran & Bougie, 2016). The sampling strategy utilized a non-probability technique, specifically targeting students from one of the universities in Pontianak. This specific sampling approach was chosen to enhance the precision of the investigation and facilitate access to respondents for qualitative exploration. Respondents were selected under the condition that they had engaged in impulsive buying behavior while using MSA.

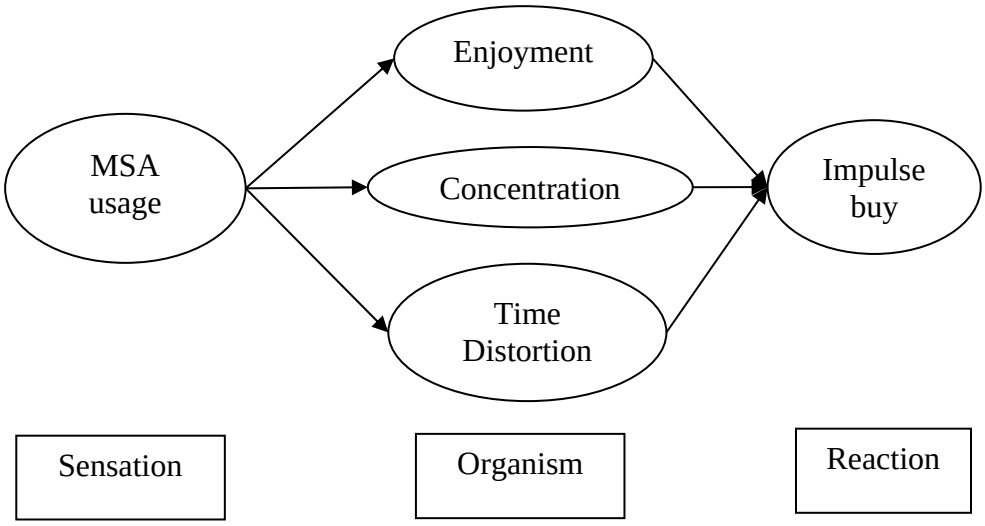

Figure 1
Structural Research Model
Source: Hypothesized Structural Relationships

The measurement instrument utilized a Likert scale ranging from 1 to 9 (1 for strong disagreement, 5 for neutrality, and 9 for strong agreement) (Norman, 2010). This instrument was adapted from previous studies (Qin et al., 2022; Aiolfi et al., 2022; Deng & Yu, 2023), with adjustments made to statement phrasing and initial validation through pretesting. We collected 190 completed questionnaires, considered sufficient based on the Pontianak university student population (Disdukcapil, 2023), meeting the minimum sample size requirements and ensuring the suitability of the number of instrument questions, with a permissible error rate of 7.1% (Rea & Parker, 2014). Table 1 presents details of the measurement instrument and its results.

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For data analysis, we employed structural equation modeling (SEM) techniques, specifically a PLS-based SEM, chosen for the homogeneous nature of the respondents. Our research objectives align with examining the "flow" construct (Qin et al., 2022), subdivided into three additional constructs to offer a more specific explanation of the flow effect on impulse buying behavior.

To establish the robustness of the measurement instrument, we subjected the study to validity and reliability assessments. Convergent and discriminant validity were evaluated, and reliability was assessed using composite reliability, indicator reliability, and a test for multicollinearity (VIF). These tests ensure the instrument effectively gauges the objectives and constructs.

After validation and reliability assessment, we explored structural relationships, investigating associative connections between constructs as depicted in Figure 1 (Matthews, 2018; Joseph F. Hair et al., 2017). Subsequently, we analyzed SEM test outcomes, further elucidating findings through focused group discussions (FGD) (Creswell, 2014) for a qualitative perspective, enhancing comprehension and contributing to future research endeavors.

Table 1
Measurement Items and Response

Construct and Indicator	Descriptive Data				
	Mean	*1-4 Score*	*5 Score*	*6-9 Score*	*StDev*
MSA Usage	7.31	0	2	188	0.92
I use MSA apps usually out of boredom	8.01	0	0	190	0.77
When using MSA apps, it is usually for new stimuli/sensation.	7.13	0	7	183	0.95
I often use MSA apps on a daily basis	7.45	1	5	184	1.03
I use MSA apps because it's a habit					
Flow (Enjoyment)	7.89	0	0	190	0.74
Using MSA is fun	7.69	0	3	187	0.89
Viewing short videos on MSA is interesting	7.63	0	2	188	0.89
I enjoy watching short videos on MSA	7.83	0	0	190	0.84
While watching short videos on MSA, the experience is fun					
Flow (Concentration)	6.67	5	18	167	1.06
I concentrated deeply while watching the short video	6.92	2	14	174	1.06
I was deeply immersed/very engaged while watching the short video	7.15	1	8	181	1.02
While watching the short video at MSA, I was totally focused	7.10	0	8	182	1.01
While watching the short video, my attention was fully focused on the video.					
Flow (Time Distortion)	7.87	0	2	188	0.91
Time passes quickly when watching short videos	7.66	0	3	187	0.99
I didn't realize that time had passed while watching the short video	7.24	0	10	180	1.01
When watching a short video, I lose track of time	7.06	0	13	177	1.04
The experience of watching a video makes me forget to keep track of / pay attention to the clock					
Impulse buy	7.66	0	0	190	0.88
When I use MSA, I often make unplanned purchases	7.50	0	2	188	0.98
I am one of those people who like to buy without a plan	6.54	5	24	161	1.06
I often see videos of interesting items on MSA and immediately buy them.	7.18	0	9	181	1.02

**items are translated to Indonesian.*

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RESULT AND ANALYSIS

Based on the findings in Table 1, it is clear that respondents generally agree with each item on the measurement instrument. Notably, the question about impulse buying, specifically the tendency to make immediate purchases upon encountering an intriguing video item, generated somewhat mixed responses. In the context of using Mobile Short Video Applications (MSA), the primary motivation observed revolves around the pursuit of novel stimuli, sensory experiences, and habitual behaviors.

Regarding the flow construct, it can be inferred that the occurrence of flow is primarily influenced by the perception of enjoyment rather than concentration, as indicated by the higher overall mean score in this category. The perceived sense of flow also influences time perception, where the experience of enjoyment might affect how users perceive the passage of time. This descriptive data suggests that the experience of flow is more substantially influenced by feelings of enjoyment, leading to a disregard for the passage of time, as opposed to the level of concentration experienced.

In assessing the impulse buying measurement tool, it is noteworthy that all selected respondents frequently engage in unplanned purchases when accessing MSA, as indicated by the high mean score of 7.5. Furthermore, the impulse buying behavior is associated with a notable sense of pleasure derived from spontaneous purchases, as reflected in a mean score of 7.18. User characteristics also play a significant role in this context, as respondents express a strong inclination towards perceiving themselves as individuals inclined to make unplanned purchases (with a mean score of 7.5).

Subsequently, the testing proceeded to evaluate the validity and reliability of the measurement instruments. Since each latent variable comprises multiple measuring instruments or indicators, it is imperative to ensure that these instruments effectively reflect the intended latent variables. Validity assessment involved examining convergent validity, with all indicators meeting the requirement of loading values exceeding 0.7, as indicated in Table 2. Discriminant validity, which measures the loading values of each instrument in relation to its respective construct and other constructs, was also examined. The results in Table 3 demonstrate that the instruments meet the criteria, as the diagonal values surpass the values in each row, confirming the unique formation of each construct distinct from the others.

Furthermore, reliability was gauged through Cronbach's alpha, Rho alpha, and composite reliability, with all latent variables meeting the stipulated requirements by surpassing a value of 0.8, as displayed in Table 2. To prevent multicollinearity issues, the study considered the VIF (Variance Inflation Factor) values, all of which were found to be below 0.5, satisfying the necessary conditions for the SEM analysis (Hair et al., 2017a; J. Hair et al., 2017b; Ringle et al., 2014).

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Table 2
Validity and Reliability Results

Construct	Indicator	Loading	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
MSA Usage	MSA1	0.821	0.80	0.83	0.87	0.62
	MSA2	0.7				
	MSA3	0.826				
	MSA4	0.791				
Flow (Enjoyment)	F11	0.761	0.76	0.77	0.85	0.58
	F12	0.775				
	F13	0.754				
	F14	0.766				
Flow (Concentration)	F21	0.872	0.85	0.94	0.89	0.68
	F22	0.798				
	F23	0.828				
	F24	0.794				
Flow (Time Distortion)	F31	0.837	0.86	0.87	0.91	0.71
	F32	0.844				
	F33	0.851				
	F34	0.833				
Impulse Buy	IMP1	0.797	0.82	0.83	0.88	0.65
	IMP2	0.769				
	IMP3	0.839				
	IMP4	0.814				

Table 3
Discriminant Validity

	Concentration	Enjoyment	Impbuy	Msa	Timedist
Concentration	0.82				
Enjoyment	0.05	0.76			
Impbuy	0.23	0.46	0.81		
Msa	0.13	0.32	0.29	0.79	
Timedist	(0.01)	(0.05)	0.19	0.15	0.84

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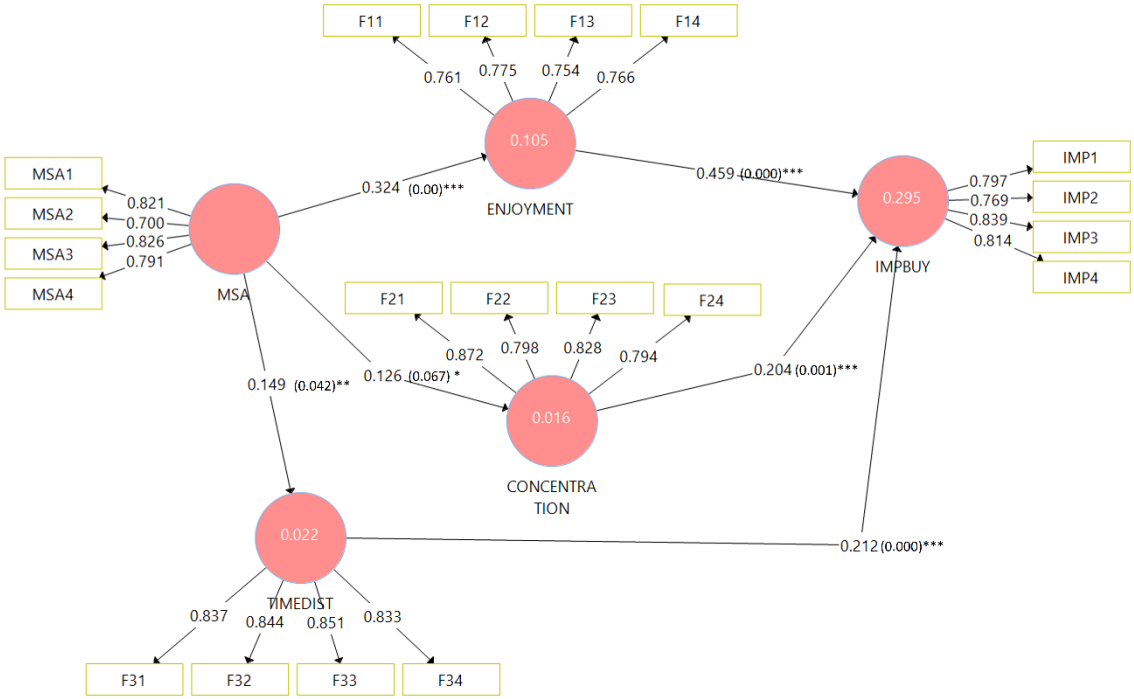

Figure 2
SEM Structural Model Test Result
Source: SmartPLS 3

Table 4
Direct Relationship Hypotheses

	Hypotheses	Supported	Confidence
H_{1a}	Flow (enjoyment) → impulse buy	Yes	>99%
H_{1b}	Flow (concentration) → impulse buy	Yes	>99%
H_{1c}	Flow (time distortion) →impulse buy	Yes	>99%
H_{2a}	MSA usage → Flow (enjoyment)	Yes	>99%
H_{2b}	MSA usage → Flow (concentration)	Yes	>90%
H_{2c}	MSA usage → Flow (time distortion)	Yes	>95%

After establishing reliability and validity, the research conducted hypothesis testing to assess the relationships between constructs. As shown in Figure 2 and detailed in Tables 4 and 5, it is concluded that respondents' unplanned purchase behaviors are influenced by their engagement with Mobile Short Video Applications (MSA) and the flow experiences perceived during use. Flow, consisting of enjoyment, concentration, and time distortion, significantly impacts impulse buying at a 95% confidence level. Enjoyment exhibits the strongest correlation (coefficient 0.459), followed by time distortion (0.212) and concentration (0.204), categorizing enjoyment as a construct with a moderate level of influence on impulse buying.

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Table 5
Indirect Relationship Hypotheses

Hypotheses	Correl	t Stat	P Val	Sig.
Msa → Concentration → Impbuy	0.026	1.564	0.119	-
Msa → Enjoyment → Impbuy	0.149	4.503	0.000	***
Msa → Timedist → Impbuy	0.032	1.63	0.104	-

Flow, in turn, is influenced by MSA usage, with the most pronounced impact from enjoyment (correlation coefficient 0.324, exceeding a 99% confidence level). MSA also affects concentration (0.126, confidence level below 90%) and time distortion (0.149, 95% confidence level). These findings indicate that MSA usage primarily heightens enjoyment, influencing impulse buying, with flow mediating this relationship via enjoyment. Notably, the mediation relationships through concentration (H3b) and time distortion (H3c) were rejected in the structural hypotheses.

Implications of the research model's results include the substantial correlation between enjoyment and impulse buying, supporting previous research on the positive impact of short video content on user emotions. Additionally, the findings align with prior research indicating that the flow state is closely linked to positive activity experiences, making users more amenable to impulsive actions. Marketing professionals and developers can focus on crafting experiences that evoke enjoyment, fostering positive interactions and a flow state, thereby increasing the potential for impulsive buying.

Qualitative exploration revealed distinctions in impulse purchasing behaviors based on the platforms used. Nearly 90% of respondents reported making impulsive purchases through TikTok and Instagram, as opposed to e-commerce platforms. Focused group discussions highlighted user preferences for short videos, habitual engagement, and habitual navigation to Instagram and TikTok, leading to occasional unplanned purchases. Users found Shopee less engaging due to promotional content, leading them to switch to alternative applications.

In contrast, Instagram served as a daily fixture for users, with frequent visits for status updates, live events, and promotions. Insights from discussions provided valuable material for future research, particularly on platform preferences, the impact of live broadcast promotions, and the role of time-sensitive discounts in stimulating impulsive buying behaviors. Subsequent studies may explore how the duration of entertainment from live broadcasts influences impulsivity.

CONCLUSION

This research yields several noteworthy conclusions. Impulse buying is significantly influenced by different aspects of the flow experience, such as enjoyment, concentration, and time distortion. The occurrence of flow, encompassing enjoyment, concentration, and time distortion, is notably influenced by the use of mobile short video applications. Empirically, it is established that the use of short video applications influences impulsive purchases through the mediation of the flow state, especially in terms of the enjoyment dimension.

When users access short videos through applications, they experience a sense of enjoyment, subsequently influencing their inclination towards spontaneous or unplanned purchasing behavior. The tested research model demonstrates commendable validity and reliability, explaining 29.5% of the variability in the impulse buy construct (R2) with a statistical confidence level exceeding 95%. It's crucial to note that the evaluation of research relationships was confined to student respondents. Despite using the bootstrap method in the

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PLS-based SEM, further research is needed to extend the generalizability of these findings to a more diverse population.

Additionally, responses were self-assessments, implying the potential for response bias due to the absence of a controlled laboratory environment. Future research avenues, incorporating both quantitative testing and qualitative exploration, may explore various dimensions, including the duration of application use, distinctions among provider platforms, the impact of live broadcasts and promotional activities, as well as the effects of strategically placed advertisements during video access.

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