

The Impact of Livestream Viewing Frequency on Users' Impulse Buying Behavior

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Abstract. This study examines the affective dynamics of impulsive purchases through livestream e-commerce, an emerging media format that blends real-time interactivity with persuasive marketing. While emotional drivers of consumer behavior have been widely recognized, the interplay between emotional arousal and user attitudes remain insufficiently understood in livestreaming environments. Drawing on a cross-sectional survey of 258 participants, this research analyzes how livestream viewing frequency influences impulse buying behavior, with positive and negative emotional arousal as mediators and user attitude as a moderator. The results show that viewing frequency positively predicts impulse buying both directly and through positive emotional arousal, while user attitude significantly moderates this effect. Findings from this study provide a practical basis for optimizing the user experience of the live e-commerce platform. Merchants can stimulate users' positive emotions by enhancing interactive design to promote transformation. These insights advance a media-centric view of emotional digital engagement and draw attention to the design implications of interactive media environments.

Keywords: livestream e-commerce, impulse buying, emotional arousal, viewing frequency, consumer behavior

1. Introduction

The global live-streaming e-commerce market has seen a significant rise in recent years. Since 2016, Alibaba has pioneered a new form of livestream e-commerce - a consumer model that enables viewers to ask questions, learn about products, and place orders in real time during a livestream. Data suggests a market size of \$940.3 billion in 2024 and a trend of continuous growth over the next decade [1]. Livestream e-commerce has shifted consumer motives from functional to social and entertainment-oriented goals [2].

One behavioral feature that explains this rapid consumer response is impulse buying. Today, impulse buying has become an important and non-negligible part of e-commerce, especially live e-commerce, not only as a user response, but as a core profitability strategy for e-commerce platforms [3]. The uniqueness and immersive nature of online environments such as hedonic browsing and real-time interaction is a powerful incentive for unplanned purchases [4]. At the same time, live-streaming environments leverage scarcity cues and limited-time offers to motivate users to spend

beyond their original budgets, a tendency that is often prompted by emotional reactions rather than logical decision-making [4-6].

While these factors have been shown to increase impulse buying, existing literature has primarily focused on anchor traits and influence or platform design and lacks insight into the consumer-side conditions that significantly trigger impulse purchases. In particular, the mechanism of whether user viewing frequency affects impulse buying is unclear and lacks analysis of how emotional arousal mechanisms (positive/negative) influence impulsive buying behavior, alongside the impact of individual differences in users' attitudes toward live streaming in this context, which has not yet been systematically studied and analyzed.

This study fills these gaps by investigating the correlation between users' viewing frequency and their impulsive purchasing action in livestreams, with a focus on the mediation function of emotional arousal and the moderation function of viewer attitudes.

2. Literature review

Impulsive buying describes an abrupt and compelling urge to purchase something with the spot. This behavior is often emotionally driven and may occur without fully considering the consequences [7]. It is important to recognize impulsive buying differs to some extent from planned purchasing. On the other hand, planned buying is an organized and planned behavior, in which consumers usually conduct a more comprehensive information search, compare prices, and rationally evaluate product attributes before making a purchase [8].

A distinguishing feature of livestream e-commerce is its seamless integration of product browsing, information acquisition and product purchase into a coherent real-time behavior. Unlike traditional offline or standard e-commerce platforms-which typically involve longer decision-making processes such as product comparisons, browsing user reviews, or thinking through requirements - live shopping can lead to instant transactions in a short period of time.

3. Research design and data analysis

3.1. Variable explanation

Based on the reviewed literature, the questionnaire focused on five key variables.

The independent variable adopted in this paper is Live Viewing Frequency (ViewFreq). Livestream viewing frequency refers to how often individuals watch e-commerce livestreams within a given period. It reflects users' habitual exposure to real-time shopping environments and persuasive content. Measurement items were adapted from previous scales developed in livestream commerce research [9].

The dependent variable is Impulse Buying Behavior (ImpulseBuy). Impulsive buying behavior is characterized by a spontaneous desire to purchase, often triggered by emotional factors [7]. The construction was assessed using a validated instrument designed to capture unplanned buying tendencies in digital environments [7,9].

The mediating variable 1 is Positive Emotional Arousal (PosEmo). Positive emotional arousal refers to heightened emotional states such as excitement, joy, and anticipation during livestream viewing. The measurement scale was adapted from foundational studies on affective precursors to impulse buying behavior [10].

The mediating variable 2 is Negative Emotional Arousal (NegEmo). Negative emotional arousal refers to anxiety and stress triggered by time pressure or scarcity cues. Items were derived from

models examining emotional triggers in livestreaming contexts [10].

The moderating variable is Users' Attitude Toward Livestream Shopping (UserAtt). Attitude toward livestream shopping reflects a consumer's overall evaluation—positive or negative—of livestream as a shopping method. The corresponding scale was informed by contemporary research rooted in behavioral intention theory [11].

3.2. Research hypothesis

This study intends to investigate how users' impulsive purchasing behavior is influenced by the frequency of livestream viewing, with particular attention to how this relationship is shaped by the mediating effects of positive and negative emotional arousal and the moderating influence of consumer attitudes. Accordingly, the following hypotheses are proposed.

H1: Higher livestream viewing frequency leads to stronger impulsive buying behavior. Repeated exposure to emotionally engaging livestream content may gradually lower users' resistance to impulse purchases by fostering familiarity and reducing hesitation over time.

H2a: The association between livestream viewing frequency and impulsive buying behavior is partially mediated by positive emotional arousal. Excitation, anticipation, and other positive emotions are likely to increase impulsive buying behavior, particularly during livestreams where viewers feel more involved and stimulated.

H2b: The association between livestream viewing frequency and impulsive buying behavior is partially mediated by negative emotional arousal. Anxiety, tension, and other negative emotions are likely to increase impulsive buying behavior during livestreams.

H3: The association between livestream viewing frequency and impulsive buying behavior is moderated by the attitudes of users toward livestream shopping. Users with positive perceptions of livestream shopping may be more easily persuaded by frequent exposure, whereas those with negative attitudes may remain more resistant despite high viewing frequency.

The hypothetical paths are shown in Figure 1.

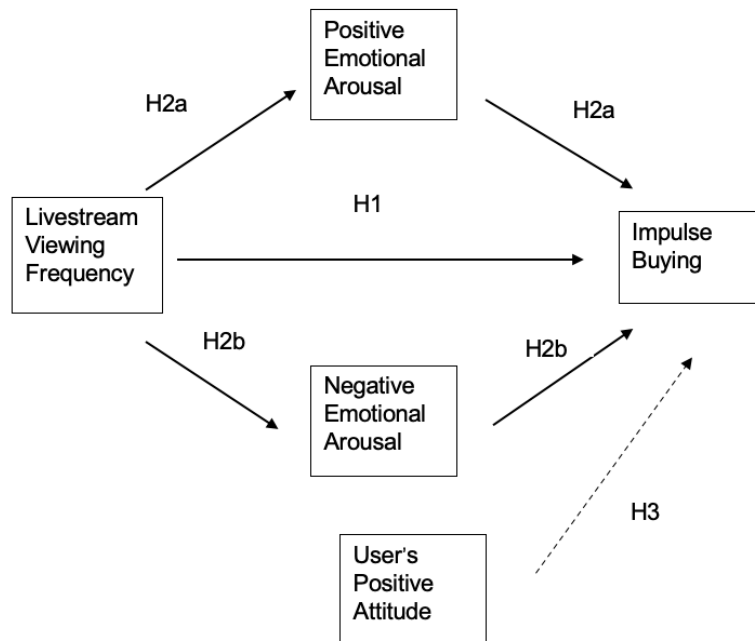


Figure 1. Hypothetical paths

3.3. Research subjects

In order to investigate the connections between the important components, the present investigation used a quantitative research methodology and a structured questionnaire. Prior to distribution, the questionnaire underwent a pilot test with 15 participants and was revised based on their feedback. The finalized questionnaire was distributed online via the Chinese platform Wen Juan Xing. All items were carefully translated into Chinese, and any discrepancies that arose during translation were resolved to ensure scale accuracy. Table 1 lists a comprehensive overview of the characteristics of participants.

Table 1. Participant characteristics

Participant Characteristic	Category	Amount	Percentage (%)
Gender	Female	152	58.91
	Male	105	41.09
Age	≤18	8	3.10
	19-25	94	36.43
	26-30	18	6.98
	31-40	44	17.05
	41-50	56	21.71
	≥51	38	14.73
Occupation	Student	92	35.66
	Freelancer	50	19.38
	Corporate	34	13.18
	Gov/Institution	20	7.75
	Self Employed	20	7.75
	Other	42	16.28
Platform Used	Douyin	162	62.79
	Kuaishou	14	5.43
	Xiaohongshu	22	8.53
	Taobao Live	24	9.30

3.4. Data analysis

Descriptive statistics and scale reliability were assessed for each of the main variables. Table 2 indicates that all core variables had high internal coherence, with Cronbach's alpha values above the suggested cutoff of 0.80. Additionally, the factor loadings for each variable were greater than 0.70, indicating strong associations between each item and its corresponding latent construct.

Table 2. Reliability and construct validity of variables

Variable	Mean	Median	SD	Min	Max	Factor	Cronbach's Alpha
ViewFreq	3.98	3.96	0.88	1	5	0.79	0.86
ImpulseBuy	3.40	3.31	0.72	1	5	0.91	0.84
PosEmo	3.9	3.93	0.70	1	5	0.74	0.84
NegEmo	2.88	2.89	0.70	1	5	0.75	0.83
UserAtt	3.94	3.92	0.86	1	5	0.72	0.85

Table 3 reports on the Pearson correlation coefficients among the main study variables. Livestream viewing frequency displayed a strongly positive connection with impulsive buying behavior ($r = 0.78$, $p < 0.01$), providing statistical support for Hypothesis H1. This finding fits with the previous expectation that frequent exposure to persuasive livestream content increases the likelihood of impulsive buying behavior. In addition, viewing frequency was moderately linked to positive ($r = 0.63$, $p < 0.01$) and negative feelings of emotion ($r = 0.55$, $p < 0.01$), offering initial evidence for the proposed mediating mechanisms in Hypotheses H2a and H2b. Negative emotional arousal was also moderately associated with purchase impulses ($r = 0.58$, $p < 0.01$), further supporting its role in shaping impulsive tendencies. Furthermore, users' positive attitudes toward livestream shopping were positively tied to both viewing frequency ($r = 0.46$, $p < 0.01$) and impulsive buying ($r = 0.70$, $p < 0.01$), pointing to a potential moderating role as posited in Hypothesis H3.

Table 3. Intercorrelations among variables

	ViewFreq	ImpulseBuy	PosEmo	NegEmo	UserAtt
ViewFreq	1	0.78**	0.63**	0.55**	0.46**
ImpulseBuy	0.78**	1	0.69**	0.58**	0.70**
PosEmo	0.63**	0.69**	1	0.44	0.11
NegEmo	0.55**	0.58**	0.44	1	0.11
UserAtt	0.46**	0.70**	0.11	0.11	1

Additional mediation analyses were conducted to examine H2a and H2b.

Table 4's findings support H2a by demonstrating that positive emotional arousal significantly mediated the association between viewing frequency and impulsive purchases (mediated effect = 0.110, $p < 0.001$). Significant results were obtained for both the mediation effect ($B = 0.297$, $p < 0.001$) and the overall impact ($B = 0.407$, $p < 0.001$), suggesting that livestream content not only directly triggers impulse buying but also strengthens this tendency by eliciting positive emotions—demonstrating a dual mechanism involving both cognitive and affective pathways.

Table 4. Mediation results for H2a

Effect Type	Coefficient	SE	Z	p
Mediated Effect	0.110	0.0257	4.27	< 0.001
Primary Effect	0.297	0.0478	6.22	< 0.001
Aggregate Effect	0.407	0.0444	9.18	< 0.001

Table 5 presents the mediation analysis results for Hypothesis H2b. The association between the frequency of livestream viewing and impulsive purchases was found to be partially mediated by negative emotional arousal, with a statistically significant mediated effect ($B = 0.155$, $p = .014$). The primary influence of viewing frequency on impulsive purchases was still noticeable ($B = 1.216$, $p < 0.001$), as did the aggregate effect ($B = 1.371$, $p < 0.001$). These results indicate that negative emotional arousal contributes to impulse buying alongside the direct effect of viewing frequency, providing statistical support for H2b.

Table 5. Mediation results for H2b

Effect Type	Coefficient	SE	Z	p
Mediated Effect	0.155	0.063	2.45	0.014
Primary Effect	1.216	0.106	11.42	<0 .001
Aggregate Effect	1.371	0.091	14.99	< 0.001

Additionally, according to moderation analysis (as indicated in Table 6), the relationship between viewing frequency and impulse buying was significantly moderated by users' attitudes toward livestream shopping (interaction term $B = -0.00117$, $p < 0.001$; 95% confidence interval $[-0.00176, -0.000572]$, which does not include zero). This finding confirms H3 and indicates that the strength of this relationship is influenced by users' attitudes toward livestream e-commerce.

Table 6. Moderation results for H2b

Variable	Coefficient	SE	Lower	Upper	β	df	t	p
(Intercept)	4.99987	1.50e ⁻⁴	4.99958	5.00	0.0000	254	33399.51	<0.001
UserAtt	4.87e ⁻⁴	2.04e ⁻⁴	8.55e ⁻⁵	8.89e ⁻⁴	0.1443	254	2.39	0.018
ViewFreq	3.27e ⁻⁴	2.12e ⁻⁴	-9.04e ⁻⁵	7.44e ⁻⁴	0.0929	254	1.54	0.124
UserAtt* View Freq	-0.00117	3.01e ⁻⁴	-0.00176	-5.72e ⁻⁴	-0.2443	254	-3.87	<0.001

4. Discussion

The findings of this study highlight how frequent livestream viewing influences impulse buying by fostering a sense of immediacy. Streamers use tactics like scarcity cues, time-limited discounts, and real-time interaction to heighten urgency and activate psychological pressure to stay involved. Unlike traditional e-commerce environments, the immersive and time-sensitive nature of livestream commerce fosters conditions conducive to spontaneous purchasing decisions.

Furthermore, the strong association between positive emotional arousal and viewing frequency provides additional empirical support for emotion-driven models of consumer behavior. Emotions such as excitement, anticipation, and joy have been identified as key drivers of impulsive purchasing decisions, consistent with prior theoretical frameworks in consumer psychology [10]. Within the livestreaming context, such emotional responses are not incidental but actively cultivated through host charisma, persuasive language, interactive viewer engagement, and dynamic visual stimuli.

In addition to positive emotions, the findings also suggest that negative emotional arousal—such as anxiety, tension, or fear of missing out—can contribute to impulse purchasing behavior within the livestream context. While the mediation effect of negative emotional arousal was statistically supported, its influence appeared comparatively less pronounced than that of positive emotions. This

indicates that although negative emotions can activate urgency-driven responses, their explanatory strength may be more contingent upon contextual factors such as platform design, shopping scenarios, or individual emotional sensitivity.

Another key finding concerns the moderating role of consumer's positive attitude toward livestream shopping. Individuals with favorable attitudes are more responsive to the emotional triggers and promotional stimuli embedded within the livestream environment. For these users, livestreaming may be perceived not only as a commercial channel but also as a source of gratification, entertainment, or social connection. Consequently, they are more likely to convert feelings into real purchases. In contrast, users holding neutral or negative attitudes demonstrate greater resistance to such cues, even under conditions of frequent exposure. This suggests that user attitudes influence both emotional and behavioral responsiveness.

5. Conclusion

To examine the connections between livestream viewing frequency, emotional arousal, user attitudes, and impulsive purchasing behavior, this study used a quantitative survey method. The findings indicate that:

First, by continuously exposing users to compelling and emotionally charged content, livestream viewing frequency has a fundamental impact on how consumers behave. This repeated exposure cultivates a heightened expectation for immediacy and primes users for spontaneous purchase decisions.

Second, a major mediating mechanism in the correlation between viewing frequency and impulsive purchases is emotional arousal, especially positive emotions like excitement and anticipation. These emotions are intentionally triggered through platform features like charismatic hosts, live interaction, and visuals. The findings also indicate that negative emotional arousal may serve as a parallel affective pathway, though its influence appears to be more context-sensitive.

Third, user's positive attitude toward livestream shopping moderates the strength of the emotional-behavioral relationship. Consumers with favorable attitudes are more susceptible to emotionally driven purchase behaviors, while those with neutral or negative attitudes exhibit greater resistance, even under frequent exposure.

Building on these findings, future research in media studies could further explore how emotionally driven design features shape consumer behavior in livestream commerce. As emotional engagement proves central to impulsive purchasing, subsequent studies might investigate how specific interface elements—such as time-limited offers, interactive chat, or host charisma—interact with user traits to influence decision-making. Comparative work across different media forms (e.g., short video, live commentary, or influencer streams) could shed light on how temporality, performativity, and narrative pacing contribute to affective decision-making. Ultimately, future studies may benefit from integrating theories of affect, media ritual, and emotional labor to better understand how digital media structures shape and sustain emotionally charged consumer behavior.

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