

## A Systematic Literature Review on Impulse Buying in E-commerce Live Streaming with Co-occurrence Map

Fuyume Sai <sup>1,\*</sup>  
Yicheng Lu <sup>2</sup>  
Ruolan Lin <sup>3</sup>

\*Corresponding author

<sup>1</sup> Graduate School of Business Administration, Daito Bunka University, Tokyo, Japan, fuyume-sai@ic.daito.ac.jp

<sup>2</sup> Graduate School of Business Administration, Daito Bunka University, Tokyo, Japan

<sup>3</sup> Graduate School of Business Administration, Daito Bunka University, Tokyo, Japan

### ABSTRACT

This paper focuses on the current state of research on impulse buying in e-commerce live streaming. Two steps of a systematic review approach are used to search for prior empirical studies. 127 studies that treat impulse buying or intention as an outcome variable were gathered. Furthermore, a co-occurrence network analysis is carried out in terms of the most widely used theoretical model and methods, as well as the most investigated influencing factors in prior literature, utilizing words extracted from study abstracts. Finally, some suggestions are addressed.

**Keywords:** Impulse buying, E-commerce live streaming, systematic review, co-occurrence network, SOR model.

### INTRODUCTION

Since its launch in 2016 (e.g., Alibaba Taobao Live), e-commerce live streaming has become a hot spot where users experience a new shopping mode that presents an innovative take on traditional e-commerce and live streaming (Arora et al., 2021). Besides functions and services provided in traditional e-commerce (e.g., Amazon.com), e-commerce live streaming brings buyers, salespeople, and viewers together into a visualized shopping environment (livestream room) and enables personal selling, along with the immediacy and interactivity of live streaming to trigger consumers to buy or to buy impulsively (Sai & So, 2023). Over the years, online impulse buying has been extensively studied. For example, Amos et al. (2014) conducted a meta-analysis to examine the common antecedent factors of online impulse buying behavior synthesized into three types (dispositional, situational, and social demographic). Chan et al. (2017) provided a systematic literature review, presenting the factors affecting online impulse buying using the stimulus-organism-response (SOR) framework.

In recent years, impulse buying in e-commerce live streaming has attracted considerable research interest. However, few papers provide an overview of prior research on this topic. Therefore, with three questions, this paper attempts to attain an aggregate understanding of the research logic in previous studies. (1) What research theory, model, and method for this topic are most commonly used in previous literature? (2) Which factors (constructs) influencing impulse buying in the context of e-commerce live streaming are most studied? (3) What are the potentials for future research on impulse buying in e-commerce live streaming?

For doing so, we use the systematic review approach to search and select the relevant literature and focus on the theories, methods, and constructs applied in prior studies. In addition, co-occurrence word analysis technique is chosen to demonstrate the common factors examined in prior studies (Donthu et al., 2021). And some suggestions are made.

### CONCEPTUAL BACKGROUND

#### E-commerce Live Streaming

Unlike traditional online shopping channels such as the Amazon website or app, e-commerce live streaming is technically a combination of e-commerce and live streaming. As shown in Figure 1, it brings salespeople to show up at the frontend to conduct sales operations and interact with and serve customers in real-time to improve their shopping experience. It links up an online livestream broadcast with an e-commerce store to allow consumers to watch and shop at the same time (Arora et al., 2021). To date, many major e-commerce platforms, such as Taobao Live, JD, Douyin (TikTok), Amazon, and others, have adopted e-commerce with live streaming. In livestream rooms, streamers demonstrate products and meanwhile talk with consumers to help them understand the featured product more intuitively, and conversely, consumers can express what they think about the product through chat functions and reaction buttons, which in turn help streamers to know their customers' needs better and encourage them to engage in live selling (Wei et al., 2022; Liu et al., 2020; Yin & Wang, 2022).

With the rapid development of e-commerce live streaming in recent years, e-commerce live streaming has become a widely used shopping channel among Chinese online shoppers (Bu et al., 2023). As reported by CNNIC (China Internet Network Information

Center), until December 2023, the number of users of e-commerce live streaming reached 597 million, accounting for 65.2% of online shoppers (915 million). The existing research mainly focuses on the influences of the characteristics of e-commerce live streaming platforms and/or streamers on consumers' purchase intentions and behaviors (Wei et al., 2022; Gong & Jiang et al., 2023; ). Still, not many studies have been done on impulse buying via e-commerce live streaming.

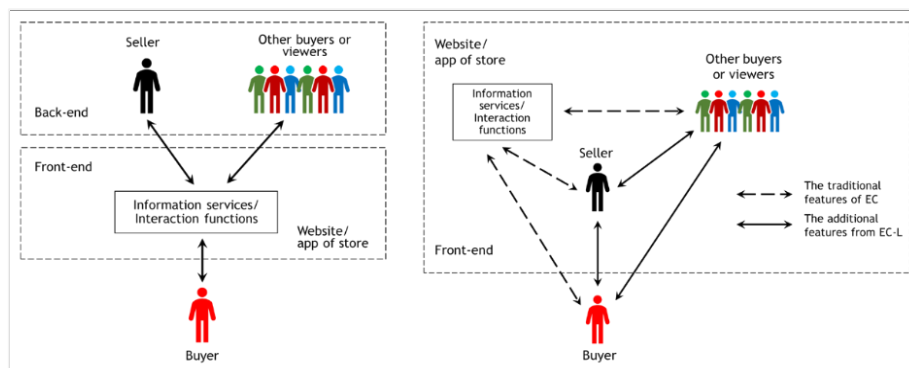


Figure 1: Traditional e-commerce (left) and e-commerce live streaming (right)

### Impulse buying

Impulse buying is a pervasive aspect of consumers' behavior. It was originally measured in early literature as an "unplanned purchase" by the mismatch between items from consumers' previous planned purchases and those purchased after the shopping trip (Beatty & Ferrell, 1998). However, this unplanned purchase concept was criticized as too broad to measure accurately the reactive behavior, which often involves an immediate action to stimuli (Rook, 1987). For example, as Stern (1962) classified, besides the so-called pure impulse buying occurring when consumers make purchases that break a normal buying pattern, impulse buying could happen when shoppers are alerted to such problems as a low stock at home or recall an advertisement and a previous decision to buy (reminder impulse buying); or it could take place when customers first see an item and recognize that it is needed (suggestion impulse buying); or it could be an additional purchase influenced by external signals such as price discounts or promotions, although the consumers already have a particular shopping list (planned impulse buying). And consumers' plans could be contingent on and altered by the retail store environment (Nesbitt, 1959; Rook, 1987), such as store layout, atmosphere, personal selling, and so on. In empirical marketing and behavioral research, a variety of different definitions and models of impulse purchase have been developed over time. However, there is an abstract agreement that consumer impulse purchase is not a directly observable, hypothetical construct. Much empirical research deals with impulse buying as a sudden, spontaneous, and immediate purchase with no specific buying intentions and an urge to buy without much consideration of the buying consequences triggered by the stimuli from the product, marketing, or factors such as impulsive buying tendency, among others (Beatty & Ferrell, 1998).

In contrast with offline purchases, impulse buying is a more common phenomenon in online shopping. It is theorized that online impulse buying is an immediate buying when an individual's mental state and emotions change triggered by their' perception of external stimuli (Amos et al., 2014; Chan et al., 2017; Tommy et al. 2017). For example, Huang et al.(2022) showed that online shopping is more likely to trigger consumers' impulsive buying behavior, which is more driven by the real-time presentation of goods or services and marketing strategies. Mo et al. (2022) summarized the antecedents of online impulse buying into two categories: internal factors, referred to as personal traits in terms of impulsiveness, hedonism, self-control, etc., and external factors such as product type, marketing stimuli, and shopping environment. Regarding impulse buying in e-commerce live streaming, studies point out that sales promotion, the streamer's characteristics, the atmosphere in the livestream room, and viewers' existence during live streaming can influence consumers' impulse buying behavior (Sai & So, 2023). Based on the SOR model, Gong et al. (2019) investigated how atmosphere cues affect consumers' flow experience, which in turn leads to impulse buying. Xiao et al. (2023) indicated that e-commerce live streaming makes consumers perceive a higher social presence than traditional e-commerce, which can arouse their positive emotions and induce impulse purchases.

### SYSTEMATIC REVIEW PROCEDURE

As the aim of this review is to achieve a cumulative understanding of the research topic (i.e., impulse buying in e-commerce live streaming) through applying techniques of research synthesis, we use multiple databases to search the relevant literature and target the published and unpublished prior studies (screening) without restriction regarding the research field (eligibility).

### Search Strategy and Selection Criteria

Before entering the search process, a search strategy is formed using query strings of ("e-commerce live streaming" OR "live streaming e-commerce" OR "live streaming commerce" OR "live commerce" OR "live shopping" OR "live stream") AND ("impulse buying" OR "impulse purchase") to find studies relevant to the same topic. And three criteria are set for inclusion: (1) empirical study; (2) impulse buying behavior or intention is treated as an outcome variable; and (3) sample source, research method, and results are reported. Thus, studies that don't treat impulse buying as an outcome construct, studies that are conceptual without explicit examination of factors affecting impulse buying behavior or intention, and studies that don't explicitly report sample, research method, or analysis results are excluded.

## Search Process

Literature searching takes two steps. The first step is to target studies published in English using several databases involving EBSCOhost (academic search complete and business search complete), Emerald Insight, ScienceDirect, Taylor & Francis, Wiley, Sage, Springer, and ProQuest. The time period is limited to 2017–2024 due to the launch year of e-commerce live streaming. The relevant studies are collected according to processes as shown in figure 2 (left), and duplications across the databases are removed. As a result, the first step collected 25 articles. As indicated in Table 1, the data examined in prior studies is mainly from China's consumers, which makes us decide to take the second step to search for relevant existing research by using the CNKI (China National Knowledge Infrastructure) database. The initial round searched 151 articles, including 49 journal articles, 97 master's, and 5 doctoral theses. After applying selection criteria, 102 studies in total remained. Figure 3 shows the number of articles written in English (left) and articles written in Chinese (right) by year. As can be seen, the theses (Chinese) took the first move, and the number is greater than articles. Accordingly, all 102 studies' abstracts are filed as data sources for further co-occurrence network analysis.

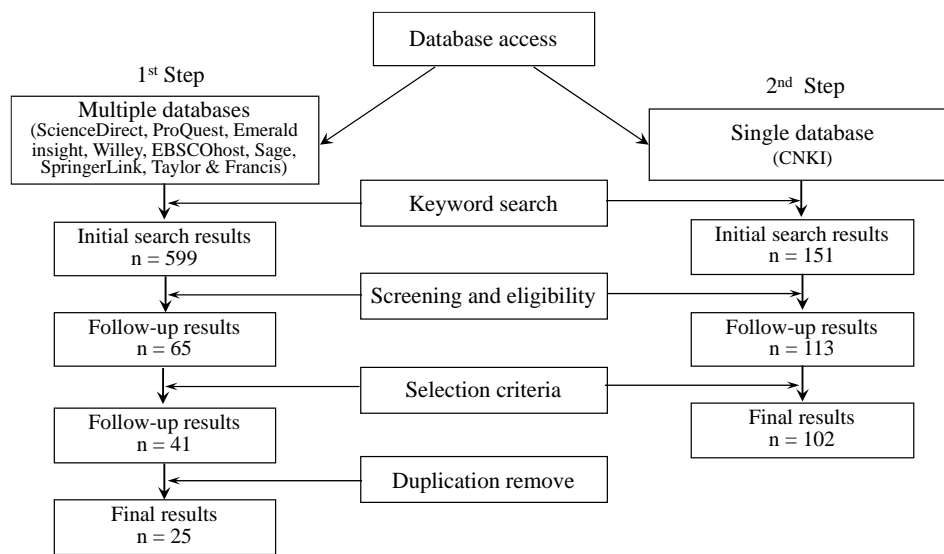


Figure 2: The search process adopted in this study

Table 1: The outcome of the first step

No.	Citation	Publication (SCImago)	Sample	Method	Data source	Theory/model
1	Ming et al., (2021)	International Journal of Web Information Systems (Q4)	405	SEM	China	SOR
2	Lee & Chen (2021)	Information	433	PLS-SEM	China	SOR
3	Yan et al., (2022)	Internet Research (Q1)	236	PLS-SEM	China	Attitude-behavior
4	Lo et al., (2022)	Journal of Business Research (Q1)	295	SEM-ANN	Malaysia	SOR
5	Zhang et al., (2022)	Sustainability (Q2)	533	SEM	China	SOR
6	Yang et al., (2022)	Sustainability (Q2)	339	PLS-SEM	Multiple *	SOR
7	Li et al., (2022)	International Journal of Environmental Research and Public Health (Q2)	189	SEM	China	SOR
8	Cui et al., (2022)	Journal of Global Information Management (Q2)	210	SEM	China	SOR
9	Lin et al., (2022)	Asia Pacific Journal of Marketing and Logistics (Q3)	355	PLS-SEM	Taiwan	SOR
10	Shi et al., (2023)	Electronic Commerce Research (Q1)	367	SEM	China	SOR
11	Kong et al., (2023)	Electronic Commerce Research (Q1)	200	Regression	China	**
12	Khoei et al., (2023)	Electronic Commerce Research and Applications (Q1)	376	PLS-SEM	Vietnam	SOR
13	Zhang et al., (2023)	International Journal of Human-Computer Interaction (Q1)	267	PLS-SEM	China	**
14	Hao & Huang (2023)	The Service Industries Journal (Q1)	385*	ANOVA	China	**
15	Li et al., (2023)	Information Technology & People (Q1)	433	PLS-SEM	China	SOR, Motivation
16	Pham et al., (2023)	Asia Pacific Business Review (Q2)	500	PLS-SEM	Vietnam	SOR, TAM**
17	Li et al., (2023)	Multimedia Tools Application (Q2)	270	SEM	China	SOR
18	Andika et al., (2023)	Journal of Theoretical and Applied Management	205	PLS-SEM	Indonesia	SOR
19	Li et al., (2024)	Journal of Retailing and Consumer Services (Q1)	327	SEM-ANN	China	**
20	Zhang et al., (2024)	Journal of Retailing and Consumer Services (Q1)	411	PLS-SEM	China	SOR
21	Feng et al., (2024)	Heliyon (Q1)	837	PLS-SEM	China	SOR
22	LI et al., (2024)	BMC Psychology (Q1)	250	SEM	China	SOR
23	Viet et al., (2024)	Journal of Promotion Management (Q2)	742	SEM	Vietnam	Swift guanxi
24	Liu et al., (2024)	Journal of Systems and Information Technology (Q2)	427	SEM	Malaysia	**
25	Chen et al., (2024)	Behavioral Sciences (Q3)	330	PLS-SEM	China	**

\* 385-sum of two samples (191+194); \* Multiple - Australia, China, Singapore, New Zealand, others. \*\* [11] Construal Level Theory; [13] Cognitive-affective framework; [14] Psychological reactance theory; [20] Attitude-behavior-context framework, Emotional contagion theory; [25] Use and gratification theory; [26] Interaction theory, Affective distance theory, Trust theory; [16] TAM-Technology Acceptance Model. SEM for structural equation model, PLS for partial least squares. ANOVA for analysis of variance. SOR for stimulus-organism-response model

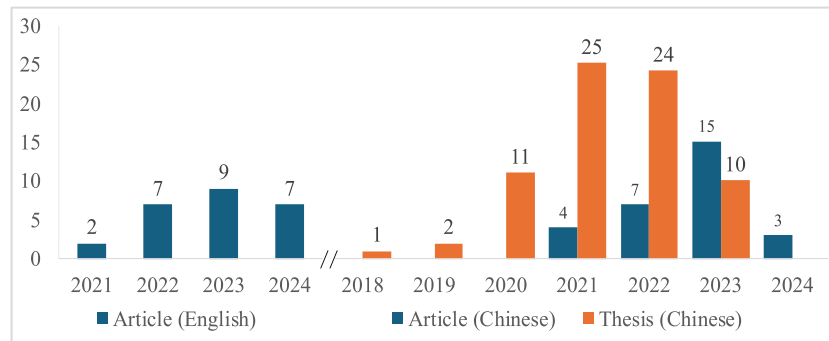


Figure 3: The breakdown of the results in each year

### Co-Occurrence Network Map

A co-occurrence map is based on word connections that are viewed as a network or graph structure, where nodes (words) of different sizes are connected by the edge (co-occurring). 161 words with an occurrence frequency higher than 30 are chosen for further analysis. Words for mapping co-occurrence are limited to nouns, verbs, and adjectives due to the context of the data in this study, which primarily focuses on the constructs examined in the existing literature. Before creating the co-word occurrence map, we need to stop words that are general expressions and commonly occur in the corpus, such as nouns like “consumer,” “research,” “e-commerce,” “Internet,” or verbs such as “yield,” and “propose,” as well as words that are extracted as both verb and noun, such as “livestream/ing,” “develop/development,” “analyze/analysis,” “interact/interaction,” and so on. After comparing the map to the one created prior to stopword removal, we decided to remove 46 stopwords while keeping the basic structure of the co-occurrence network. The removal included words counted twice as a noun and a verb. Thus, there were 115 words in all. The words that produce a co-occurrence network map are displayed in Table 2.

Table 2: The words used for network map (frequency &gt; 30; 115 words)

Noun	Verb	Adj
冲动 559 问卷 135 情感 78 心 64 商品 48 心流 40 信息源 34 购买 793 促进 49 起到 32 愉悦 75	Impulse Questionnaire Affect Heart Product Flow Information sender Buy promote Play/has Pleasant	
影响 515 变量 132 临场感 77 意见 64 压力 47 技术 40 路径 34 感知 115 能够 46 提升 30	Influence Variable presence Opinion Pressure Technology Path Perceive Can Increase	
意愿 346 购买 128 方式 74 信任 63 文献 47 质量 40 品牌 33 影响 74 流 44 能 30	Intention Buying Way Trust Literature Quality Brand Influence Flow Can	
主播 307 社会 127 专业性 72 基础 63 行业 47 线上 39 折扣 32 构建 74 探讨 43	Streamer Social Professionalism Base Industry Online Discount Construct Discuss	
行为 283 因素 125 风险 72 效应 62 意义 46 领域 39 梳理 32 提供 70 观看 39	Behavior Factor Risk Effect Significance Area Summarization Provide Watch	
理论 234 互动性 121 促销 71 领袖 62 线索 45 视角 38 角度 32 存在 68 提高 35	Theory Interactivity Promotion Leader Cue Perspective Angle Exist Improve	
中介 203 平台 117 商家 71 策略 59 销售 45 心理 37 程度 31 冲动 64 采用 35	Mediation Platform Merchant Strategy Sell Psychology Degree Impulse Adopt	
营销 197 关系 104 机制 71 认知 56 s-o-r 44 方面 37 唤醒 64 利用 34	Marketing Relation Mechanism Cognition s-o-r Aspect Arouse Employ	
模型 172 特征 104 氛围 69 吸引力 54 决策 42 社交 37 作为 62 探究 34	Model Characteristics Atmosphere Attractiveness Decision Social contact As a Explore	
产品 156 感知 96 时间 68 内容 53 特性 42 场景 36 起 57 收集 34	Product Perception Time Content Feature Scene Danmu Invoke Collect	
情境 154 信息 94 过程 68 环境 52 反应 41 弹幕 36 成为 54 发挥 33	Scene Information Process Environment Reaction Danmu Become Play	
体验 151 模式 90 刺激 65 维度 50 实验 41 直播间 36 结合 53 后悔 32	Experience Model Stimuli Dimension Experiment livestream room Combine Regret	
情绪 142 调节 88 价值 64 价格 49 建议 41 触觉 35 感 52 得出 32	Emotion Moderation Value Price Suggestion Touching Feel Obtain	

Additionally, the co-occurring structure of words (Jaccard index > 0.14) is visualized by KH Coder 3. To further observe the word co-occurrence, the modularity metric is used for graph detection. The co-occurrence map from the second stage is shown in Figure 4, and Table 3 lists the words that are related in each subgraph.

Table 3: Words of each subgraph in the map

Subgraph	Word
A	impulse, buying, buy, behavior, intention, influence (noun), streamer, platform, merchant, suggestion, scene, mechanism, explore, factor, influence (verb), stimuli, reaction, emotion, cognition.
B	theory, model, base, s-o-r, variable, construct (verb), literature, summarization, combine, “as a”.
C	mediation, effect, cause, heart, flow (verb), flow (noun), experience, social, presence, relation, moderation.
D	emotion, arouse, pleasant, feel, value, perception, perceive, risk.
E	interactivity, professionalism, attractiveness, “information sender”, characteristic. feature, leader, brand, opinion.
F	product, information, quality.
G	promotion, price, discount, time, pressure.
H	clue, atmosphere.
I	marketing, model, strategy.
J	questionnaire, collect, adopt.

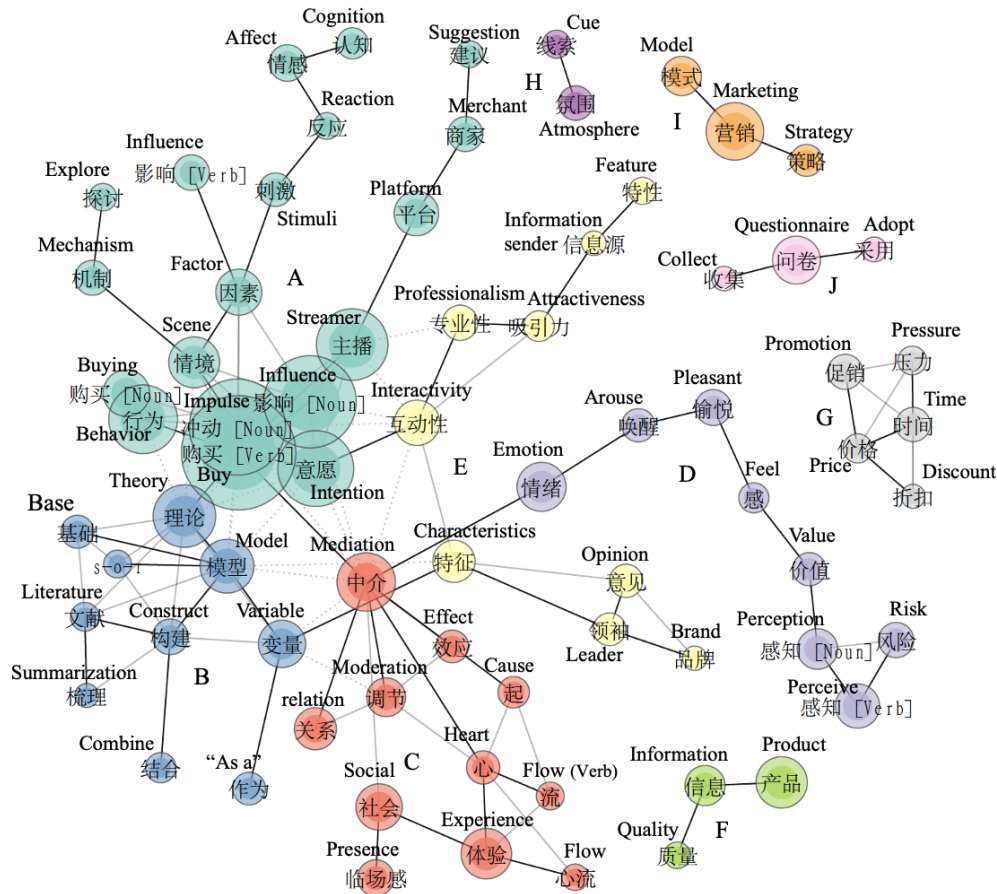


Figure 4: The co-occurrence word network (Jaccard index > 0.14)

More specially, the co-word occurrence network, as shown in figure 4, is composed of ten subgraphs: (A) about the research topic (impulse + buying); (B) theory and model (theory + model + s-o-r); (C) mediation factor (mediation + effect); (D) emotion and perception (emotion + pleasant + arouse + value + risk); (E) characteristics (interactivity + professionalism + attractiveness); (F) product presentation (product + information + quality); (G) sales promotion (price + discounts + time + pressure); (H) atmosphere cue; (I) marketing strategy; (J) questionnaire. The more frequently the words (nodes) were co-used (connected), the more likely it was that those two words reflected related concepts.

## FINDINGS

Previous research on impulse buying in e-commerce live streaming has primarily focused on the scene aspect of e-commerce live streaming (subgraph A). Past studies have tended to investigate how the affect and cognition triggered by stimuli from the scene of e-commerce live streaming influence impulse buying intention and behavior. Thus, most of the research on this topic has used the SOR model as a theoretical framework (see subgraph B; Table 1) to explore the complex factors affecting consumers to buy impulsively while shopping via e-commerce live streaming.

Factors affecting impulse buying in e-commerce live streaming examined as stimuli variables in prior studies mainly include the streamer's characteristics (subgraphs A and E), product information (subgraph F), sales promotion (subgraph G), and atmosphere of the livestream room (subgraph H). In terms of endogenous variables, prior studies have attempted to investigate the influence of exogenous variables (i.e., stimuli) on impulse buying intention and behavior, mainly mediated by the positive emotion and perceived risk (subgraph D), social presence, and flow experience (subgraph C). Some studies hypothesized social presence as an antecedent to examine the role of flow experience in the formation of impulse buying behavior, while others tested perceived risk as a moderator affecting the impact of the endogenous variables (i.e., the organism) on the outcome intention and behavior. Regarding dimensions of constructs, previous studies have focused on three common attributes of streamers (i.e., interactivity, professionalism, and attractiveness) and defined positive emotion as a two-dimensional construct (i.e., pleasure and arousal). Concerning research method, most of previous research utilized quantitative methods, specifically surveys by questionnaire (subgraph J) and conducting statistical analysis with structural equation modeling (SEM), partial least squares (PLS)-based SEM, multiple linear regression (MLR), and SEM-artificial neural network (ANN). Among the English papers collected from the first search step, PLS-SEM seems to be the most utilized analysis method (e.g., see Table 1).

Additionally, considering the potential for future research, except for what we found, research on impulse buying in e-commerce live streaming can be conducted from the perspective of the consumer purchase process. Based on the AISAS model, for example,

Li et al. (2023) explored the mechanisms of impulse buying decisions in the context of e-commerce live streaming. Also, future studies might consider relationship quality for enhancing the quality of interaction and satisfaction via e-commerce live streaming among the triple parties (i.e., seller, buyer, and viewer).

## CONCLUSION

In conclusion, this paper contributes to the empirical literature on impulse buying in e-commerce live streaming. Following two steps of systematic procedure, previous studies are first collected from multiple English databases. As the data investigated in the studies is mostly from China's consumers, the second step is to search the CNKI database to find relevant research that focuses on examining factors affecting impulse buying or intention in the context of e-commerce live streaming. Consequently, the relevant literature includes both English and Chinese empirical studies from 2017 to 2024. Three research questions are posed to achieve the primary goal of this paper: (1) What research theory, model, and method for this topic are most commonly used in previous literature (RQ1)? (2) Which factors (constructs) influencing impulse buying in the context of e-commerce live streaming are most studied (RQ2)? (3) What are the potentials for future research on impulse buying in e-commerce live streaming (RQ3)? And A co-occurrence network analysis is performed to find the answers. For RQ1, it is revealed that most previous studies have used the SOR model as a theoretical framework and employed PLS-SEM to examine the predictive theoretical model. For RQ2, the results show that streamers' influences as stimuli have been most concerned, whereas social presence, flow experience, and positive emotion as mediators of stimulus-response have been most investigated. And lastly, RQ3 suggested different research angles for the future study on impulse buying in e-commerce live streaming.

## REFERENCES

- Andika, A., Anisah, T. N., Najmudin, M., & Sardi, A. E. (2023). From interaction to transaction: Analyzing the influence of social presence on impulsive purchasing in live streaming commerce, *Journal of Theoretical and Applied Management*, 16(3), 454-472. <https://doi.org/10.20473/jmtt.v16i3.49490>
- Arora, A., Glaser, D., Kluge, P., Kim, A., Kohli, S., & Sak, N. (2021). It's showtime! How live commerce is transforming the shopping experience. *McKinsey Digital*. Retrieved from <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/its-showtime-how-live-commerce-is-transforming-the-shopping-experience#/> (accessed 11 November 2024).
- Beatty, S. E., & Ferrell, M. E. (1998). Impulse buying: Modeling its precursors, *Journal of Retailing*, 74(2), 169-191. [https://doi.org/10.1016/S0022-4359\(99\)80092-X](https://doi.org/10.1016/S0022-4359(99)80092-X)
- Bu, L., Wang, J., Wang, K. W., & Zipser, D. (2023). Powering growth in China with social and live commerce. *McKinsey & Company*. Retrieved from <https://www.mckinsey.com/cn/our-insights/our-insights/powering-growth-in-china-with-social-and-live-commerce> (accessed 11 November 2024).
- Cai, J., & Wohn, D. Y. (2019). Live streaming commerce: Uses and gratifications approach to understanding consumers' motivations. *Proceedings of The Annual Hawaii International Conference on System Sciences* 2019, 2548-2557. <https://doi.org/10.24251/hicss.2019.307>
- Chen, J., Luo, J., & Zhou, T. (2024). Research on determinants affecting users' impulsive purchase intention in live streaming from the perspective of perceived live streamers' ability, *Behavioral Sciences*, 14(3), 190. <https://doi.org/10.3390/bs14030190>.
- China Internet Network Information Center (2024). The 53rd statistical report on China's internet development. Retrieved from <https://www.cnnic.net.cn/n4/2024/0322/c88-10964.html> (accessed 11 November 2024).
- Cui, Y., Liu, Y., & Gu, M. (2020). Investigating the key drivers of impulsive buying behavior in live streaming, *Journal of Global Information Management*, 30(1), 1-18. <https://doi.org/10.4018/jgim.314226>
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines, *Journal of Business Research*, 133(9), 285-296. <https://doi.org/10.1016/j.jbusres.2021.04.070>
- Feng, Z., Mamun, A. A., Masukujjaman, M., Wu, M., & Yang, Q. (2024). Impulse buying behavior during livestreaming: Moderating effects of scarcity persuasion and price perception. *Heliyon*, 10(7). <https://doi.org/10.1016/j.heliyon.2024.e28347>
- Gong, X. X., Ye, Z. L., Wu, Y. P., & Liu, J. Y. (2019). Research on the influencing mechanism of atmosphere clue on impulse purchase intention in live streaming context. *Chinese Journal of Management*, 16(6), 875-882.
- Hao, S., & Huang, L. (2023). How the time-scarcity feature of live-streaming e-commerce affects impulsive buying. *The Service Industries Journal*, 43(11-12), 875-895. <https://doi.org/10.1080/02642069.2023.2185231>
- Huang, X. (2022). Influence of marketing availability of live e-commerce on consumer's online impulse purchase - chain mediation of psychological distance and psychological account flexibility, *Journal of Commercial Economics*, 11, 59-62.
- Jiang, N., Guo, Q., Gu, F., & Liu, M. (2023). The impact of product scarcity on impulse purchase intention in live streaming shopping context: The moderating effect of characteristics of live streaming platform and anchor. *Industrial Engineering and Management*, 28(4), 1-8. <https://doi.org/10.19495/j.cnki.1007-5429.2023.04.001> (in Chinese).
- Khoi, N. H., Le, A. N., & Dong, P. N. (2023). A moderating – mediating model of the urge to buy impulsively in social commerce live-streaming, *Electronic Commerce Research and Applications*, 60, 101286. <https://doi.org/10.1016/j.elerap.2023.101286>.
- Kong, D., Zhan, S., & Zhu, Y. (2023). Can time pressure promote consumers' impulse buying in live streaming e-commerce? Moderating effect of product type and consumer regulatory focus. *Electronic Commerce Research*. <https://doi.org/10.1007/s10660-023-09788-0>
- Li, X., Huang, D., Dong, G., & Wang, B. (2024). Why consumers have impulsive purchase behavior in live streaming: The role of the streamer, *BMC Psychology*, 12, 129. <https://doi.org/10.1186/s40359-024-01632-w>



- Lee, C.-H., & Chen, C.-W. (2021). Impulse buying behaviors in live streaming commerce based on the stimulus-organism-response framework. *Information*, 12(6), 241. <https://doi.org/10.3390/info12060241>
- Li, L., Chen, X., & Zhu, P. (2024). How do e-commerce anchors' characteristics influence consumers' impulse buying? An emotional contagion perspective. *Journal of Retailing and Consumer Services*, 76, 103587. <https://doi.org/10.1016/j.jretconser.2023.103587>
- Li, L., Kang, K., Zhao, A., & Feng, Y. (2023). The impact of social presence and facilitation factors on online consumers' impulse buying in live shopping – celebrity endorsement as a moderating factor. *Information Technology & People*, 36(6), 2611-2631. <https://doi.org/10.1108/ITP-03-2021-0203>
- Li, M., Wang, Q., & Cao, Y. (2022). Understanding consumer online impulse buying in live streaming e-commerce: A stimulus-organism-response framework. *International Journal of Environmental Research and Public Health*, 19(7), 4378. <https://doi.org/10.3390/ijerph19074378>
- Li, S., Dou, Q., & Yu, Z. (2023). The influence mechanism of quasi-site creativity stimulation on consumers' impulse buying in e-commerce live streaming. *Multimedia Tools and Applications*, 82, 37407-37430. <https://doi.org/10.1007/s11042-023-15101-w>
- Li, X. L., Yi, H., Bai, Y. T., He, M. X., Ren, J. H., & Yang, W. Y. (2023). Influence mechanism of impulsive purchase based on AISAS model in live broadcast scenario. *Journal of China West Normal University (Natural Sciences)*, 44(162), 1-12. <https://doi.org/10.16246/j.issn.1673-5072.2023.04.008> (in Chinese).
- Lin, S. C., Tseng, H. T., Shirazi, F., Hajli, N., & Tsai, P.-T. (2023). Exploring factors influencing impulse buying in live streaming shopping: A stimulus-organism-response (SOR) perspective. *Asia Pacific Journal of Marketing and Logistics*, 35(6), 1383-1403. <https://doi.org/10.1108/APJML-12-2021-0903>
- Liu, R., Abdul Hamid, A. B., & Yaakub, N. I. (2024). Revisiting perceived gratification, consumer attitudes and purchase impulses in cross-border e-commerce live streaming: A direct and indirect effects model. *Journal of Systems and Information Technology*, 26(1), 51-70. <https://doi.org/10.1108/JSIT-10-2023-0214>
- Liu, Z. Y., Zhao, X. H., & Long, W. (2020). The formation mechanism of consumers' purchasing intention in online celebrity live streaming based on grounded theory. *China Business and Market*, 34(8), 48-57. <https://doi.org/10.14089/j.cnki.cn11-3664/f.2020.08.005> (in Chinese).
- Lo, P. S., Dwivedi, Y. K., Tan, G. W. H., Ooi, K. B., Aw, E. C. X., & Metri, B. (2022). Why do consumers buy impulsively during live streaming? A deep learning-based dual-stage SEM-ANN analysis. *Journal of Business Research*, 147, 325-337. <https://doi.org/10.1016/j.jbusres.2022.04.013>
- Ming, J., Zeng, J., Bilal, M., Akram, U., & Fan, M. (2021). How social presence influences impulse buying behavior in live streaming commerce? The role of S-O-R theory. *Journal of Web Information Systems*, 17(4), 300-320. <https://doi.org/10.1108/IJWIS-02-2021-0012>
- Mo, Y., & Huang, R. (2022). Research on the influencing factors of impulse buying behavior of consumers on live streaming e-commerce platforms from the perspective of affordance. *Logistics Engineering and Management*, 44, 72-77.
- Nesbitt, S. (1959). Today's housewives plan menus as they shop. *Nesbitt Associates Release*, 2(3), 2-3.
- Pham, A. D., Pham, N. H., Nguyen, M. N., Giap, N. T. H., Bui, D. L., Bui, T. L., & Dao T. T. T. (2023). How do live-stream channels shape impulse buying behavior? Empirical research on Vietnamese youth. *Asia Pacific Business Review*, 1-26. <https://doi.org/10.1080/13602381.2023.2265320>
- Rook, D. W. (1987). The buying impulse. *Journal of Consumer Research*, 14(2), 189-199. <https://doi.org/10.1086/209105>
- Sai, F., & So, G. (2023). An empirical study of impulse purchase in e-commerce live streaming from the e-commerce marketing mix perspective. *Proceedings of The International Conference on Electronic Business*, 23, 25-35. <https://doi.org/10.17265/2159-5275/2019.03.004>
- Shi, W., Li, F., & Hu, M. (2023). The influence of atmospheric cues and social presence on consumers' impulse buying behaviors in e-commerce live streaming. *Electronic Commerce Research*. <https://doi.org/10.1007/s10660-023-09793-3>
- Stern, H. (1962). The significance of impulse buying today. *Journal of Marketing*, 26(2), 59-62. <https://doi.org/10.2307/1248439>
- Chan, T. K., Cheung, C. M., & Lee, Z. W. (2017). The state of online impulse-buying research: A literature analysis. *Information & Management*, 54(2), 204-217. <https://doi.org/10.1016/j.im.2016.06.001>
- Nguyen-Viet, B., & Nguyen, Y. T. H. (2024). Human–Human interactions' influence on impulse-buying intention in live commerce: The roles of guanxi, co-viewer trust, and gamification. *Journal of Promotion Management*, 1-30. <https://doi.org/10.1080/10496491.2024.2347216>
- Wei, J. F., Li, M. N., & Liu, B. P. (2022). Research on the influence of anchor characteristics on consumers' impulse purchase intention in e-commerce livestreaming. *China Business and Market*, 36(4), 32-42. <https://doi.org/10.14089/j.cnki.cn11-3664/f.2022.04.003> (in Chinese).
- Xiao, Z., & Cai, S. (2023). Study on the influence of situational factors of e-commerce live broadcasting on consumers' impulse buying behavior. *SHS Web of Conferences*, 171, 4-8. <https://doi.org/10.1051/shsconf/202317101026>
- Xu, X., Wu, J., Li, Q. (2020). What drives consumers' shopping behavior in live streaming commerce? *Electronic Commerce Research*, 21(3), 144-167. <http://www.jecr.org/node/609>
- Yan, M., Kwok, A. P. K., Chan, A. H. S., Zhuang, Y. S., Wen K., & Zhang, K. C. (2023). An empirical investigation of the impact of influencer live-streaming ads in e-commerce platforms on consumers' buying impulse. *Internet Research*, 33(4), 1633-1663. <https://doi.org/10.1108/INTR-11-2020-0625>
- Yang, J., Cao, C., Ye, C., & Shi, Y. (2022). Effects of interface design and live atmosphere on consumers' impulse-buying behavior from the perspective of human–computer interaction. *Sustainability*, 14(12), 7110. <https://doi.org/10.3390/su14127110>

- Yin, Y., & Wang, Y. L. (2022). The influence of e-commerce live streaming on users' purchase intention--based on the characteristics of the host and the perspective of social presence. *Journal of Hubei University of Science and Technology*, 42(1), 26-33. <https://doi.org/10.16751/j.cnki.hbkj.2022.01.005> (in Chinese).
- Zhang, X., Cheng, X., & Huang, X. (2023). "Oh, my god, buy it!" Investigating impulse buying behavior in live streaming commerce. *International Journal of Human-Computer Interaction*, 39(12), 2436-2449. <https://doi.org/10.1080/10447318.2022.2076773>
- Zhang, Y., Zhang, T., & Yan, X. (2024). Understanding impulse buying in short video live e-commerce: The perspective of consumer vulnerability and product type. *Journal of Retailing and Consumer Services*, 79. <https://doi.org/10.1016/j.jretconser.2024.103853>
- Zhang, Z., Zhang, N., & Wang, J. (2022). The influencing factors on impulse buying behavior of consumers under the mode of hunger marketing in live commerce. *Sustainability*, 14(4), 2122. <https://doi.org/10.3390/su14042122>
- Zhao, W. J., Hu, F., Wang, J., Shu, T., Xu, Y. (2023). A systematic literature review on social commerce: Assessing the past and guiding the future. *Electronic Commerce Research and Applications*, 57, 101219. <https://doi.org/10.1016/j.elerap.2022.101219>
- Zuo, J., & Li, Y. (2024). Atmosphere cues and consumer impulse buying behavior during e-commerce live broadcasting - based on chain mediation analysis. *West Forum on Economy and Management*, 35(2), 89-98. <https://doi.org/10.12181/jjgl.2024.02.09> (in Chinese).