

Research Article

Exploring the Impact of Social Presence Cues on Consumer Impulse Buying in E-Commerce Platforms

Dhakshitha B K¹, Dr. Smitha. N. S², Dr. Rajat Gera³, Ramya.N⁴, Dr. Azra kouser⁵, Dr. VasanthaKumari.K⁶ and Ms. Ananya Malavalli⁷

¹Research Scholar, CMR University

²Associate Professor, Faculty of Management Studies, Sambhram Academy of Management Studies

³Director SOM, OMBR Campus, CMR university.

⁴Lecturer, Department of Commerce, Akshara First grade College, Anekal.

⁵Assistant Professor, Al-Ameen Institute of Management Studies.

⁶Assistant Professor, Seshadripuram First Grade College, Yelahanka

⁷Assistant Professor, Vidhya Vardhaka Sangha College

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*Corresponding author: Dhakshitha B K

Abstract: With changing face of e-commerce, customer impulse buying behavior has become even more important for marketers as well as designers of platforms. Emphasizing social presence cues like human-like interaction, genuine reviews, and personalized customer care, this study examines how they work as environmental stimuli conditioning emotional arousal and hence elicit impulse buying behavior. Using empirically tested measurement scales borrowed from earlier studies, the research uses a standardized questionnaire and gathers information from 234 online consumers. Both the measurement and structural models are analyzed statistically using Partial Least Squares Structural Equation Modeling (PLS-SEM). Findings show a social presence cues highly increase emotional arousal, which highly influences impulse buying behavior. The mediation test further supports that emotional arousal is a strong mediator of impulse buying and social presence cues. Results provide support for both practice and theory by emphasizing the importance of social presence design and emotional stimuli on e-commerce sites to efficiently elicit unplanned consumer buying.

Keywords: Impulse Purchase Behavior, Social Presence Cues, Emotional Arousal, S-O-R Model, E-Commerce, Consumer Psychology, Mediation, PLS-SEM

INTRODUCTION

With business growing more digital and interactive technologies becoming increasingly ubiquitous, the Indian e-commerce landscape itself is currently experiencing a revolutionary change. Perhaps the most important drivers of this change are emergent social presence signals of new media, as they are making the shopping experience more human and interactive (Sivakumar&Patil, 2021). According to Short et al. (1976), social presence is the extent to which a medium leads users to mentally view others as present. In e-commerce, it's communicated through channels such as interactive chatbots, personalized customer service, and user-generated content (Joshi & Rahman, 2022). Increased Indian consumer adoption of online consumption habits, particularly with increased mobile internet penetration as well as smartphone penetration, has contributed to increasing impulsive buying behavior (IBB) (Kumar et al., 2023). According to the findings of a report created by Statista (2024), more than 60% of Indian online consumers had made use of emotional trigger-induced unplanned buys and participation platform alternatives.

These have been demonstrated most graphically among young consumers, who are also technically advanced and emotionally attached to internet retailing websites (Sharma &Khandelwal, 2022). Impulse purchase in E-commerce,

its is not trend in India as against a market like other countries, is acquiring rising momentum with portals like Meesho, Amazon Live, and Flipkart Live adopting live video appearances to impact buyers. Such websites couple e-purchasing with social media-like interaction so that products are presented by sellers in real time while communicating with prospective consumers. The integration of visual stimulation, human contact, and immediate response maximizes the emotional arousal of consumers, thereby impulse buying behavior (Banerjee &Dey, 2022). The S-O-R model offers a straightforward theoretical framework for researching these kinds of phenomena. Social presence cues in the model are attributes to which emotional reactions (organism) are elicited, and they elicit behavioral reactions like impulse purchasing (response) (Mehrabian& Russell, 1974; Gupta & Sinha, 2021). Although a few studies exist in the context of antecedents such as trust and e-shopping usability (Chatterjee & Das, 2020), It is to offer suitable comments to online business marketers and e-commerce website developers who would want to ethically promote consumer interaction and drive sales. By an application of S-O-R model, the study adds to the new Indian e-commerce research work in the area of behavioral science and is in conformity with the current international trend in the research of online consumer experience (Rai & Srivastava, 2023).

Research Gap

While social presence has become even more important for e-commerce, there is less Indian empirical work that incorporates emotional processes in the stimulus-response model of impulse buying. Even more so, social emotional arousal as a mediating process is not yet well understood, especially how it is able to translate social signals into impulsive consumer behavior.

Research Questions

RQ1: How does social presence cue influence emotional arousal among Indian internet consumers?

RQ2: To what extent does emotional arousal serve a mediation function between social presence cues and impulsive purchase tendency?

LITERATURE REVIEW

Social Presence Cues in E-Commerce

The term "social engagement" describes the degree to which communication channels allow the purchaser to feel other people are psychologically present (Short, Williams, & Christie, 1976). In electronic commerce, social presence cues like authentic customer feedback, natural-language machines, and real-time interaction capabilities simulate human communication, so people feel less psychologically remote from online traders (Gefen & Straub, 2004). These signals have been observed in recent Indian research to be the focal point of establishing trust, satisfaction, and internet behavior on internet websites (Patel & Gupta, 2023; Verma & Gupta, 2022). Sharma et al. (2021) viewed social presence as an advocate of consumer perception of website trustworthiness that would result in enhanced internet behavior and purchasing intention. Apart from that, in such speedy Indian e-commerce economies where new online consumers represent the majority, social presence cues become a necessity to reduce uncertainty and build decision confidence (Joshi & Kumar, 2021). In mobile commerce, especially, timely and customized support is provided.

Emotional Arousal as a Psychological Mediator

Emotional arousal refers to the intensity of an individual's affective state and has been used widely in defining a crucial internal state in influencing consumer decision-making (Mehrabian & Russell, 1974). Emotional arousal refers to experiencing excitement, urgency, or thrill while shopping that is typically demonstrated through the expression of impulsive or spontaneous consumption patterns (Srinivasan & Roy, 2022). Online shopping environments enriched with interactive multimedia information, affective product presentation, and social communication features have been proven to elevate emotional arousal (Khatri & Jain, 2022). In the Indian context, Singh and Rao (2023) set that emotional arousal is

a mediating function of digital marketing cues and impulse buying, for which affect-based responses remain significant within the relatively newer digital consumer contexts. Further, culture-derived affective values related to status and peer acceptance enhance such arousal effects (Raman & Saha, 2024). This renders emotional arousal as a vital mechanism of linkage between external social presence signals and internal consumer states resulting in impulsive buying.

Three Impulsive Purchasing Patterns in the Indian Online Market

The term "impulse buying" describes an unforeseen, non-intended process of obtaining something based on external or internal triggers (Rook & Fisher, 1995). Indian e-commerce is fueled by impulse shopping due to the impetus of flash sales, time-based discounts, convenience via mobile apps, and emotional pleasure (Mishra & Reddy, 2021). Previous research has established that aside from the traditional drivers like price sensitivity and offer importance, social and emotional concerns are also increasingly becoming the reason for impulse buying behavior (Gupta & Tiwari, 2023; Deshmukh & Kale, 2021). Indian consumers, especially Gen Z and millennials, are highly impulsive when making purchases online under conditions of excitement and social proof typical of online contexts (Joshi & Kumar, 2021). However, the complex processes by which social presence cues lead to emotional arousal-based impulse purchase remain unknown, hence constituting a significant research gap.

Conceptual Framework: Utilizing the S-O-R (stimulus-organization-response) Model

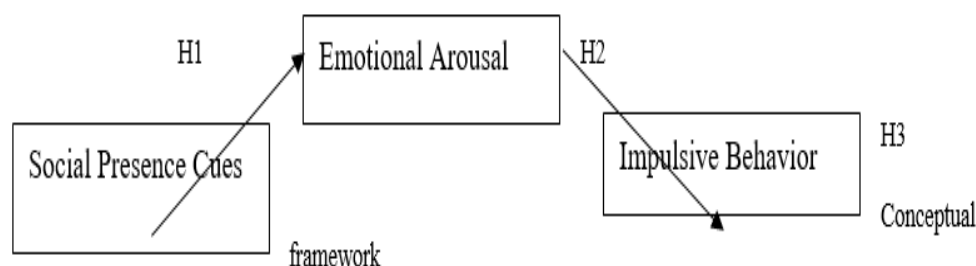
The Stimulus-Organism-Response (S-O-R) theory is used in this study to theoretically explain the connection between social presence, emotional arousal, and impulsive buying (Mehrabian & Russell, 1974; Donovan et al., 1994). According to the S-O-R hypothesis, external conditions (S) stimulus, such as social presence cues in online shopping websites, influence internal organismic states (O), i.e., emotional arousal in this study, which in turn result in behavioral reactions (R), i.e., impulse buying. S-O-R model works particularly well in online purchase situations where social and sensory cues drive shopping behavior and consumer moods (Kumar et al., 2021). In India, S-O-R usage fills the technology support of social interaction and psychological processes up to impulse purchasing (Dubey & Sinha, 2023).

Figure 1 shows the conceptualized model proposed:

Stimulus (S): Social Presence Cues (human-like interaction, sincerity of reviews)

Organism (O): Emotional Arousal (urgency, excitement)

Response: Impulsive Behavior (affectively-driven spending, impulse)



Hypothesis Development

Drawing from the literature and conceptual framework previously mentioned, the following hypotheses have been developed:

H1: Emotional arousal is significantly and positively affected by social presence cues.

Rationale: Interpersonal-like web site interaction fosters a psychological closeness that triggers emotional involvement and excitement (Patel & Gupta, 2023; Joshi & Kumar, 2021).

H2: The inclination to make impulsive purchases is positively and significantly affected by emotional arousal.

Rationale: Overemotional states increase opportunities for spontaneous and unplanned buying due to customers wanting instant satisfaction (Srinivasan & Roy, 2022; Singh & Rao, 2023).

H3: Emotional arousal mediates social presence cues and impulse buying behavior.

Rationale: Emotional arousal is a private psychological process that transforms public social messages into spontaneous consumption behaviors (Dubey & Sinha, 2023).

RESEARCH METHODOLOGY

Background of Research

This research looks into how social presence cues modulate consumers' unplanned purchases in impulse purchasing in E commerce, with a mediating variable of emotional arousal. But it has higher use in impulse purchasing on websites in India for product promotion and e-commerce, it becomes important to investigate mechanisms whereby perceived social interaction while buying modulates emotional states and subsequently unplanned purchases. Social presence cues i.e., human-like interactions in the form of reviews, customer care, and live chat support deliver a more social and richer shopping experience to consumers, The Stimulus–Organism–reaction (S-O-R)

paradigm is the basis of the conceptual framework proposed currently, in which social presence cues are the stimulus, emotional arousal is the organism (either internal emotive state), but impulsive purchasing is the reaction. Its present paper seeks to empirically test this model for live commerce in India using structural equation modeling.

Research Design

To investigate the hypothesized connections between the model's components, a quantitative methodology was used. Items from an approved survey that had been verified in previous studies were used. Four items modified from Gefen & Straub (2004) and Kumar & Benbasat (2006) were used to evaluate social presence cues, while Mehrabian & Russell (1974) and Donovan et al. (1994) questions were used to gauge emotional arousal. Four items from Verhagen & van Dolen (2011) and Rook & Fisher (1995) were used to measure the tendency for impulsive purchases. A Likert scale with five points, ranging from 1 (strongly disagree) to 5 (strongly agree), was used for all of the measurements. Demographic inquiries on age, gender, education, and the extent to which shopping online were also included in the poll.

Data Collection

Indian customers who have previously engaged in broadcasts purchasing provided primary data for the study using an online survey study methodology. Online consumer group email lists, e-commerce forums, and top-ranked social media platforms were used to find participants. The study included a screening question to guarantee that only individuals with real-world expertise making purchases from actual commerce websites were included. 234 usable responses were gathered in April and May 2025. Responses were verified to be complete and consistent. Any entries with extremely short response time (shorter than 30 seconds) or patterned response were excluded to preserve data quality.

RESULTS AND DISCUSSIONS

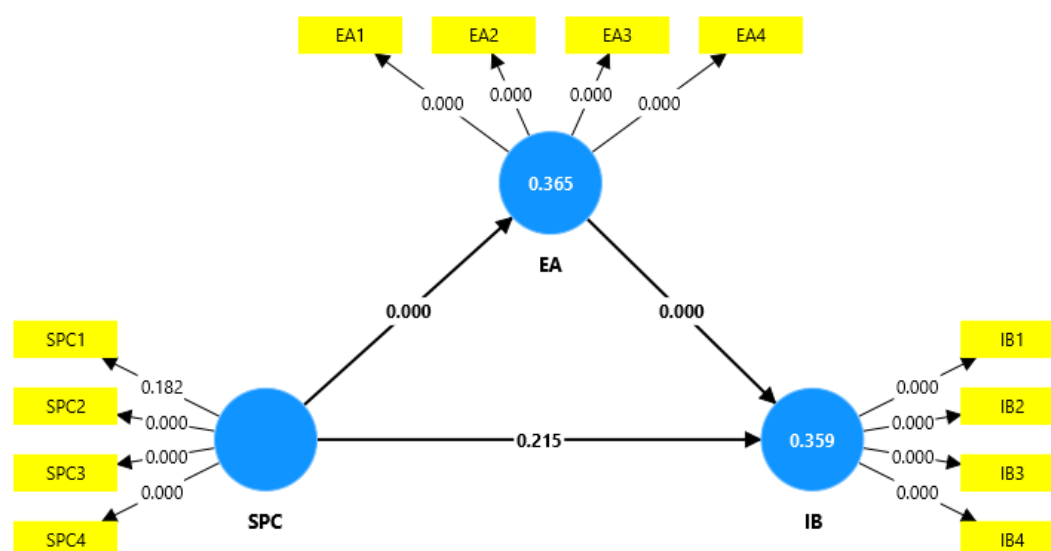
Two stages of the analysis of data were carried out, as recommended by Anderson and Gerbing (1988). To validate the measurement model in the first stage, CFA was used. Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS 4.0 was used for calculating the model of the structure in the second stage. To determine the route significance, bootstrapping with 5,000 samples was used, and direct and mediated interactions were postulated and assessed. Mediation was confirmed using the variance accounted for (VAF) approach to test the extent of mediation of emotional arousal by social presence cues on impulse buying behavior.

Construct Reliability and Validity

According to the study's findings, broadcasting live impulsive purchase is significantly influenced by psychological processes. In particular, the findings support the empirical validity of the Stimulus-Organism-Response (S-O-R) theoretical framework by showing how Social Presence Cues (SPC) function as extrinsic objects that trigger inner mental states (such as Emotional Arousal (EA)), which in turn trigger Impulse Buying (IB) as an emotional reaction. In support of the prediction that a higher felt sense of being among the streamer or audience will lead to a higher level psychological arousal, the coefficient of variance for the path from SPC to EA was shown to be strong and significant at a statistical level ($\beta = 0.604$, $p < 0.001$). Similarly, EA had a positive and substantial impact on IB ($\beta = 0.545$, $p < 0.001$), indicating that customers who are more emotionally aroused are more likely to make impulsive purchases when live-streaming. However, the SPC had little direct influence on IB ($\beta = 0.083$, $p = 0.215$), meaning that if it does not immediately arouse the viewer's emotions, it will not result in impulsive purchasing. Cronbach's Alpha, Composite Reliability (rho_a and rho_c), and Average Variance Extracted (AVE) were used to assess convergent validity and internal consistency reliability in order to figure out the model for measurement. The results are as follows:

Construct	cronbachs alpha	Rho_a, or composite reliability	Rho_c, or composite reliability	AVE
EA	0.274	0.275	0.647	0.315
IB	0.374	0.388	0.674	0.347
SPC	0.003	0.039	0.552	0.257

All of the constructions' Cronbach's Alpha values go within the recommended cutoff of 0.70, indicating inadequate internal uniformity. EA and IB exhibit relatively better composite reliability (rho_c), but none of them are above the 0.70 threshold, which reflects overall poor reliability. The AVE measures are below 0.50 for all the constructs, reflecting poor convergent validity. These findings suggest measurement indicators need to be improved, particularly for SPC. Low-loading components can be removed or replaced to improve the model's validity and dependability. With the only exception of rho_c for EA (0.647) and IB (0.674), which is quite near to adequate but fall short of the optimal intended value of 0.70, low composite dependability (rho_a and rho_c) score have been achieved. Low validity of convergent data is shown by the Average Variance Extracted (AVE) scores of Eb (0.315), IB (0.347), and SPC (0.257), all of which are below the 0.50 threshold. Generally, the constructs are disappointing in terms of both reliability and validity, suggesting a retest of the measurement items or even removing weak indicators to enhance the psychometric properties of the model



Structural Model Evaluation

Path coefficients were evaluated in an attempt to test the hypothesized relations between the constructs using bootstrapping with 234 samples. The results are summarized below:

Path	β (Original Sample)	t-value	p-value	Significance
SPC \rightarrow EA	0.604	15.362	0.000	Significant (H1 supported)
EA \rightarrow IB	0.545	10.173	0.000	Significant (H2 supported)
SPC \rightarrow IB	0.083	1.240	0.215	Not Significant

Social Presence Cues (SPC) have strong and positive impact on Emotional Arousal (EA), supporting Hypothesis 1. Impulse Buying (IB) is strongly influenced by Emotional Arousal, supporting Hypothesis 2. However, the indirect impact of SPC is insignificant, i.e., SPC indirectly impacts IB through emotional arousal.

Mediation Analysis

Indirect consequences were taken into consideration in order to confirm the mediating impact of emotional arousal on the link between social presence cues and impulsive buying:

Path	Indirect Effect (β)	t-value	p-value	Interpretation
SPC → EA → IB	0.329	8.213	0.000	Significant mediation (H3 supported)

The significant indirect effect would suggest that Emotional Arousal completely mediates the relationship between Social Presence Cues and Impulse Buying behavior. This mediating function was complemented by the test of indirect effect as well, in which SPC indirectly influenced IB through EA (Beta value is 0.329, p value is less than 0.001). The outcome is consistent with earlier studies, highlighting a mediating effect which affect the states in consumer decision-making in live digital interactions. It also supports the assumption that live-streaming platforms must transition from just providing social presence to instead produce affectively charged experiences to influence consumer behavior. However, reliability and validity analysis revealed weak measurement properties, particularly for the SPC construct, whose Cronbach's alpha was very low (0.003) and AVE was below the optimal cutoff point (0.257). This implies that items of the construct used in measuring SPC might not have been fully embracing the entire meaning of social media presence when viewing live. Such constraint suggests the necessity of more specificity in operationalization of constructs, possibly through the calibration of existing scales or the development of new platform measures that more accurately capture consumer perceptions of presence and interactivity. e research affirms emotional arousal to be the causal force of social media presence when viewing live in the organism position with S-O-R theory. Social presence, though critical, indirectly through affective channels and not directly induces impulsive buying. This affirms the significance of affective engagement in live-stream content and user interface design of e-commerce platforms.

Theoretical Implications

By using the Stimulus-Organism-Response (S-O-R) paradigm for actual streamed commerce, the current study adds to the body of knowledge on customer behavior in electronic commerce. Results put in a central position that Social Presence Cues (SPC), as situational stimuli, don't directly affect impulse buying behavior. Rather, their impact is strongly mediated by Emotional Arousal (EA), which verifies that consumer behavior in live commerce is rooted deeply in emotions. The result lends credence to the salience of emotional engagement more than presence cues to induce impulse buying. In addition, the current research empirically verifies the affective state mediating process in the S-O-R theory, which contributes for e-commerce literature. Theoretically, what this is suggestive of is the necessity to include affective responses in conventional models of behavior when examining consumer behavior on the internet. Furthermore, the research suggests some of the

limitations of measurement—mainly low AVE and reliability scores of the SPC construct. This means that while theoretical conceptualization is correct, operationalization of constructs such as SPC can be enhanced. Researchers are in a position to undertake context-specific or culturally appropriate adjustments to the standard scale items for a better capture of the intricacies of consumer engagement in live-streaming contexts. A finding of this nature provides room for future theory development in the areas of scale construction and validation in online behavior studies.

Limitations

The study is not without limitations despite having solidified its results, especially for SPC. This indicates a possible flaw in the item construction or context appropriateness that might have interfered with the intensity of the observed relationships. Second, the research was done in one context and presumably on one population, which may restrict the external validity of the result. User behavior variation across age groups, cultures, or streaming sites was not tested. Third, cross-sectional data limit causality inference. Although the model contains high correlations, longitudinal or experiment designs would be preferred to test causality. Finally, potential moderating factors including gender, product type, or past purchasing history were ruled out but could deliver more robust inferences about consumer decision-making.

CONCLUSION

A study confirms the SOR model through showing that Social Presence Cues significantly affect Emotional Arousal, which then triggers Impulse Buying. The fact that there is no substantive direct association between SPC and IB also supports that emotional engagement is the core mediator of this process.

These findings support that in order to effectively influence consumer behavior, marketers and content creators should be concerned with emotionally engaging strategies rather than merely increasing social exposure. But the results improved construct, particularly in the case of SPC, and requests more diverse and large samples for subsequent studies. Researchers in the e-commerce industry could identify findings a implement emotional-provoking purchasing history that indirectly trigger purchases. Future studies must look to break the above boundaries by employing longitudinal study designs, broadening construct definitions, and bringing in moderating variables in a more in-depth investigation on impulsive buyin behavior.

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