
Modeling Consumer Purchase Intentions in Mobile Shopping Scenarios from a Social Presence Perspective

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Abstract: With the rapid development of mobile Internet and the rise of mobile e-commerce in recent years, mobile shopping has become one of the most popular shopping methods nowadays, and how to promote consumers' willingness to purchase online has gradually received widespread attention from the majority of e-commerce companies as well as scholars. The purpose of this paper is to study the relationship between the sense of social presence and consumers' purchase intention in the mobile shopping context, by reviewing and deducing the research literature on social presence theory, customer perceived value theory, and consumers' purchase intention, based on the "S-O-R" theory and explanation level theory, the social presence of consumers in the mobile online shopping context is taken as the antecedent variable of consumers' purchase intention, with consumers' different value perceptions as mediating variables, a model of consumer purchase intention was constructed to explore the mechanism of social presence sense on consumer purchase intention, and also to examine the contextual moderating role of explanation level in this process. The results of the study indicate that, 1. The three dimensions of social presence, such as consumers' awareness presence, emotion presence, and cognition presence in mobile online shopping contexts, stimulate different value perceptions of consumers, and different value perceptions further promote different behavioral responses of consumers, i.e., manifest as different purchase intentions. 2. The three dimensions of perceived value, namely functional value, entertainment value, and social value, as abstract feature reflections, at different levels of consumer interpretation Customer perceived value will also have a differential impact on purchase intentions and behaviors.

Keywords: Social Presence, Mobile Shopping, Purchase Intention

1. Introduction

The mobile shopping context is a virtual online communication context, and social presence is an important way to overcome the lack of human touch in the communication process [1]. Based on the "S-O-R" theory, social presence, as a psychological stimulus for consumers in mobile online shopping contexts, is bound to have an impact on their purchase intentions and behaviors. The purpose of this paper is to study the relationship between social presence and consumers' purchase intentions in the context of mobile online shopping, based on the "S-O-R" theory and the level of explanation theory by reviewing the research literature on social presence theory, customer perceived value and mobile online shopping intention, and to construct a model of mobile

shopping consumers' purchase intentions based on the logic of S-O-R theory, This study is intended to address and answer the following questions: 1. How is social presence defined in mobile online shopping and what dimensions are involved? 2. What is the mechanism underlying the influence of social presence on consumers' purchase intentions? In other words, how does it affect purchase intention and can it be explored under the framework of "S-O-R" theory? 3. What are the situational factors that consumers' social presence influence their purchase intentions in mobile online shopping?

2. Literature Review

In the online shopping environment, social presence has

been relatively well researched. For example, based on social presence, Zhou Yongsheng et al. classify the characteristics of live e-commerce into six aspects, including the degree of reach, cue multiplicity, and natural language in the cognitive social presence dimension, and the authenticity, intimacy, and real-time interaction in the emotional social presence dimension [2]. But the definition of social presence varies a lot. Gefen viewed social presence in the online shopping environment as a one-dimensional concept [3]. However, according to the research on social presence in the context of mediated communication, social presence has gradually shifted from the initial one-dimensional perception under the perspective of social cue information filtering to a multi-dimensional concept guided by interaction theory. In the context of social e-commerce, Lu divided social presence into three dimensions: social presence in web design, perception of others, and social presence in seller interaction [4]. But social presence is ultimately the result of 'human' interaction, and web design, such as product However, social presence is ultimately the result of "human" interaction, and web design, such as the 3D information approach of products, is more of a physical presence and should not be used as a dimension of social presence. Based on Shen and Khalifa, Lv Hongbing classified the social presence of online shops into three dimensions: conscious presence, emotional presence and cognitive presence, using B2C online shops as a background [5, 6]. Given that the essence of both online and mobile shopping environments is the process of shopping based on the medium of the platform, this study defines social presence in the mobile shopping environment as "the emotional and cognitive interaction between the user and other users in the mobile client-mediated shopping environment, based on which users feel and pay attention to the presence of other users". Conscious social presence refers to the extent to which users perceive the presence of other users in the mobile shopping environment and can respond to each other, such as comments from other users, interacting with other users in comments, and using self-representative features (e.g. avatars and figurative symbols) can all enhance conscious social presence; emotional social presence refers to the degree of the user's emotional connection evoked by social interactions with other users in the mobile shopping environment; cognitive social presence refers to the extent to which the user constructs and confirms the meaning of relationships between themselves and other users in the mobile shopping environment.

There are many studies on customer perceived value in the online shopping environment, but the definitions of the dimensions of perceived value vary according to the focus of the study. For example, some scholars have classified consumer perceived value in the online shopping environment into contextual value and content value. Other scholars have classified consumer perceived value into four dimensions, namely perceived product quality, perceived risk, perceived product price, and perceived experience value. However, under the efficacy-hedonic theory perspective, the division of consumer perceived value dimensions in the

online shopping environment is relatively uniform. In the context of B2C e-commerce, Lv Hongbing divided perceived value into functional value and emotional value [6]. In the context of modern life, the purchase and use of a certain commodity does not only depend on the functional value of the product itself and the emotional value of the shopping process, but the social value of the product is also often a very important aspect, i.e., the value of using a product in a way that enhances self-awareness, such as social status and the evaluation of others on their use of a certain commodity, etc. Therefore, this paper combines the division of consumer perceived value dimensions under utility-hedonic theory with Sheridan's five dimensions of perceived value based on consumption value theory, and defines perception as "the functional value that consumers experience in the process of purchasing and using a product in the mobile shopping environment, which is brought to them by the function of the product itself, and the emotional experience of the product in the process of shopping, and the enhancement of their self-concept due to the use of the product, such as social status" [7]. And this paper divides consumer perceptions in the mobile shopping environment into functional value, emotional value, and social value. The functional value refers to the functional, utilitarian or physical benefits brought to consumers by the objective attributes of goods or services; the emotional value refers to the feeling or emotional state generated during the consumption process; and the social value refers to the utility of the consumer's enhanced self-concept, such as status, from the process of purchasing and consuming goods.

In the study of factors influencing consumers' purchase intentions in the online shopping environment, according to the existing literature, these influences can be divided into three categories: online trust, online store/product information presentation, and online review interaction. Among them, online review interaction is an important reason for the formation of social presence. Currently, most of the studies on the influence of social presence on consumers' purchase intention are based on examining the mediating effects of trust and perceived risk between social presence and consumers' purchase behaviors/intentions, such as Gefen and Lu [3, 4]. Lv Hongbing examined the mediating effect of trust, consumer perceived value between social presence and purchase intention in an online shopping context [6]. However, considering that mobile shopping and online shopping are both consumer shopping methods based on the medium of online platforms, they have certain common features. Based on a synthesis of the literature related to social presence, consumer perceived value, and factors influencing consumer purchase intention in the online/mobile online shopping environment, we found that: (1) there is almost no research on social presence, customer perceived value, and purchase intention in mobile online shopping environment; (2) there is also little research on the mediating effect of perceived value between social presence and consumer purchase intention. Although domestic scholar Lv Hongbing examined the

mediating role of perceived value in social presence on consumer stickiness in the context of B2C e-commerce [6]. His definition of the perceived value dimension ignored the social value in the consumer perceived value dimension, i.e., the value of goods to enhance self-concept. Based on this, this study focuses on the impact of social presence on perceived value in the mobile shopping environment and the mediating effect of perceived value between social presence and purchase intention.

3. Theoretical Foundations

3.1. "S-O-R" Theory and Its Application

The Stimulus-Organism-Response (S-O-R) theory was developed by psychologist Woodworth, based on the S-R behavioral decision theory, is an important theoretical framework for analysis in the fields of psychology and psychiatry. As shown in Figure 1, this theory believes that the human organism, including the sensory organs, nervous system, and muscular system, plays a mediating role between external environmental stimuli and individual behavior, i.e., after the human organism receives external environmental stimuli, the organism will process the external stimuli to produce mental activities, and the individual organism will have corresponding behaviors or reactions after receiving the stimuli, in which the external stimuli consist of material, organismic and social factors [8].



Figure 1. The logic of the 'S-O-R' theory.

In the field of marketing, S-O-R has been widely used in consumer behavior research [12]. In consumer behavior research based on S-O-R theory, for example, Li Wenyong et al.'s study on consumer organic food purchasing behavior based on S-O-R theory, and Xiao Jian et al.'s study on consumer household fresh beef purchasing behavior based on S-O-R theory [9, 10]. Consumers eventually make a certain behavior, successively experience external environmental stimuli, the organism's mental activity, and behavioral response. Naumkung et al. argued that external environmental stimuli influence the mental activity of the recipient (organism), which in turn leads the organism to react to the stimulus with a corresponding behavioural response. Therefore, in consumer behavior research, the S-O-R theory places more emphasis on the influence of external environmental stimuli on consumers' mental activities and the role of the corresponding mental activities on consumer behavior. In terms of external environmental stimuli, Kotler was the first to suggest that environmental atmosphere is an important tool in marketing, and Donovan and Rossiter used the retail store environment as the external stimulus, emotional experience as the state of the organism, and proximity or distance from the shop as consumer behavior, and the results showed that the environment of a

retail shop influences consumers' behavior in entering or leaving the store by influencing their emotional state. Baker classified the physical environment of a shop into three types: social factors (the number of people in the shop, such as the number of employees and consumers in the shop), design factors (visual effects, such as structural layout, color, and neatness), and atmospheric factors (non-visual factors, such as smell, sound, lighting effects). Bitner defined the retail environment as "all physical factors that are objective and under the control of the company to increase (or limit) employee and consumer behavior" and argued that consumer behavior is influenced by the surrounding physical environment; Eroglu examines the impact of an online retailer's web environment on consumer (organism) emotion and cognition, and consumer emotion and cognition on online consumers' shopping behavior, and showed that the visual environment of a high task-related online retail shop, where the description of the product contributes to consumers' perception of the product, can enhance the organism's emotional and cognitive state, which in turn positively influences consumers' behavioral decisions to purchase [11]. Ezeh and Harris argued that the service scene included not only physical factors, but also design factors and social factors, and Zhang Bei and Lin Jiabao argued that external environmental stimuli included the influence of factors such as the quality of the product, production technology, ethical, social, economic, cultural, and natural environment [12].

3.2. Explanation Level Theory

In psychological theory, memory, planning, prediction, hope, and counterfactual choice constitute individual thinking and guide individual decision-making and behavior through emotions. Unlike the direct experience in everyday life, prediction, memory, and speculation are all processes of mental construction, i.e., mental constructions play a mediating role between real events and mental representations. The level of explanation theory, proposed and refined by Thrope and Liberman, Liberman et al., is a purely cognitive-oriented social psychological theory, the core idea of which is that people's reactions to external things depend on people's internal mental representations, and that people's mental representations of external things are influenced by the psychological distance between the entity that people perceive and the objective entity that they perceive [14-16]. Mental distance, in other words, is defined as the degree of proximity in time, space and society of the perceived objective object (including behaviors, events, etc.) in terms of the probability of occurrence, including temporal distance, spatial distance, social distance and hypothetical distance, using the self in the here and now as a reference point [16]. When psychological distance is far, people tend to interpret external stimulus behaviors or events using abstract, high-level, kernel, and de-contextualized features, while when psychological distance is close, people tend to interpret external stimulus events using horizontal, more detailed concepts. In turn, the level of interpretation influences the

individual's cognitive activities such as prediction, judgment, and evaluation of behaviors or events.

Trope argued that mental distance, whether it is temporal distance, spatial distance, social distance, or hypothetical distance, is inherently correlated between them, with the self's current, here and now as the point of reference, and that people are more inclined to use abstract, de-contextualized, high-level constructs to mentally represent the object when the distance is greater. Fujita examined individual self-controlled behavior using the level of psychological interpretation and concluded that the level of mental interpretation has an important influence on both individual judgments and behavioral decisions, with people assigning more weight to high-level features of events in making judgments and behavioral decisions when their level of interpretation of events is high, and assigning more weight to low-level features of events when their level of interpretation of events is low [13]. For example, when people make decisions about events that are psychologically distant, they are more influenced by expectations, whereas when they make decisions about proximate practices, they pay more attention to the feasibility of the event.

Among the studies in the field of marketing, Thomas et al. examined the effect of increasing the level of feature construction of a product on consumers' willingness to pay and showed that a high level of constructed feature "vision" for a good can increase consumers' willingness to pay in the long term, while a low level of constructed feature "feasibility" for a good (e.g., price) has a positive effect on willingness to pay in the short term, Dhar et al. examined the process of goods' alternative set formation using the level of explanation theory and concluded that at a high psychological distance from consumption, abstract attributes of goods, such as quality, are important in the formation of goods' alternative sets, while lower-level, specific, detailed product features (e.g., price) play a greater role in the consumer's final decision to purchase the product [14]. Kim et al. argued that consumers' receptiveness to merchant's messages is influenced by their own needs, interests and values, and changes over time, so when the psychological distance is far, the merchants' advertisements should emphasize the core features of the product, such as the stain removal effect of the detergent, and when the psychological distance is closer (e.g. in-store promotion advertisements), the secondary level features of the goods that need to be emphasized, such as discount information, the convenience of portability, etc [14].

There are relatively few domestic studies on the theory and application of explanatory level theory in marketing. In order to explore the influence of promotional means on commodity purchase decisions at different time distances, Liu Hongyan et al. did a relevant study, whose results showed that the effect of giveaway promotion methods was better in the near-term shopping scenario than in the far-term shopping scenario, and the effect of price promotion methods was better in the distant shopping scenario than in the near-term

scenario [17]. Su Song and Huang Jinsong investigated the effect of explanation level on consumer behavior in the context of reverse marketing, and their results showed that the match between the explanation level of reverse marketing messages and the psychological distance of the decision-maker had a significant effect on whether consumer purchases could be reduced, and that successful reverse marketing reduced consumer purchases but increased consumers' willingness to pay price, corporate attitudes and willingness to repurchase [18].

4. Conceptual Model Presentation

With the rise of mobile e-commerce, how to promote consumers' willingness to purchase online has gradually received widespread attention from e-commerce companies and scholars. Based on the general logic of the "S-O-R" theory, stimuli induce an individual's body perception, which in turn elicits a response from the individual. Therefore, based on the "S-O-R" theory, social presence as a psychological stimulus for consumers, in a mobile online shopping situation, will certainly have an impact on their purchase intention and behavior. Specifically, the three types of consumers' social presence in mobile online shopping situations, consciousness, emotion and cognition, stimulate different value perceptions, which in turn lead to different behavioral responses, i.e., different purchase intentions.

Furthermore, in conjunction with the level of explanation theory, people's interpretation of something depends on their mental representation of that thing [13-16]. Individuals respond to and interpret stimuli in the external environment differently and form a continuum based on this, resulting in different levels (high and low) of interpretation levels. Individuals with high levels of interpretation are more likely to be influenced by general and abstract features of things, whereas individuals with low levels of interpretation are more concerned with specific and detailed features of things [19, 20]. Moreover, the level of individual interpretation is influenced by psychological distance, which includes four dimensions such as temporal distance, spatial distance, social distance, and hypotheticality. This study argues that there is a typical feature of Spatio-temporal separation in mobile online shopping contexts [20]. Therefore, functional value, entertainment value, and social value, as abstract features, reflect that customers' perceived value will also have different effects on purchase intention and behavior under different levels of consumer interpretation.

In summary, this study is based on the "S-O-R" theoretical logic and combined with the interpretation level theory to explore the influence mechanism of consumers' social presence on purchase intention through perceived value in the mobile online shopping context, and to examine the contextual moderating role of interpretation level in this process. Specifically, the theoretical model for this study is shown in Figure 2.

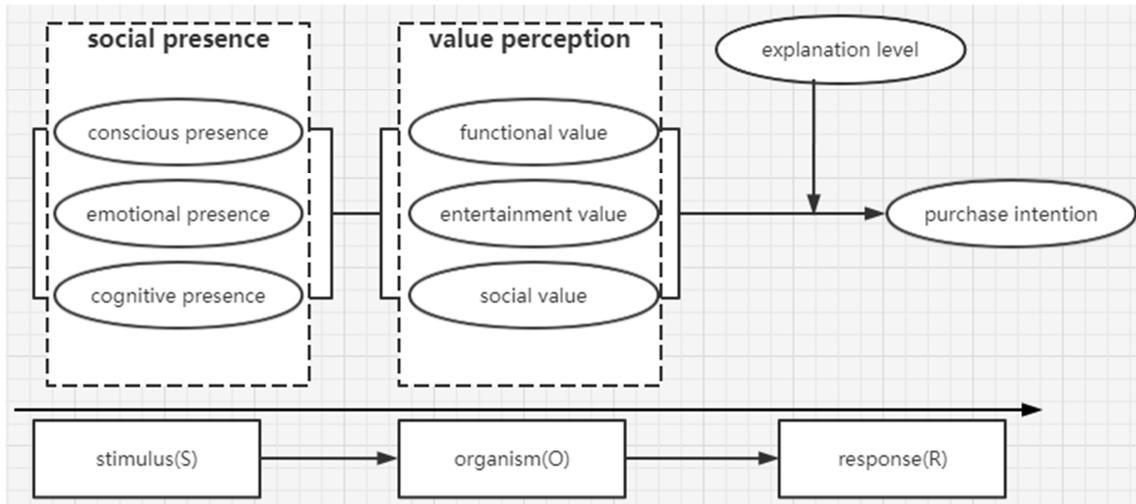


Figure 2. Theoretical basis and conceptual model of this study.

5. Discussion

The findings of this paper only present a research model, in the subsequent empirical study of the model, there is a need to develop a multidimensional scale for measuring social presence in the context of mobile shopping. By combing social presence theory and existing research literature, and organizing interviews with marketing experts to obtain suggestions for scale development, an initial scale covering conscious presence, emotional presence and social presence was developed. In this way, the three dimensions of social presence in the mobile shopping context can be clearly defined, and the dimensions of social presence scales in other contexts that are not suitable for the mobile shopping context can be discarded, and a three-dimensional social presence scale with good reliability and validity can be developed by exploring the validation of factor analysis with a sample of consumers in the mobile shopping context.

This study is an innovative approach to explore the influence of social presence on consumers' purchase intentions by drawing on the 'S-O-R' theory. In previous studies, social presence has often been used as a simple antecedent variable to study its impact on consumer purchase intention and consumer stickiness, but scholars have not thoroughly analyzed and explored how social presence affects consumer behavior. This study will use the "S-O-R" theory, taking "stimulus-organism-response" as the main logical line to construct a research model of social presence on consumers' purchase intentions, using consumers' social presence in mobile online shopping situations as the stimulus variable, and taking the different value perceptions of consumers as the mediating variable to examine the different behavioral responses of consumers, i.e., different purchase intentions. Through the validation of the model hypothesis, it is possible to explain the inner mechanism by which social presence affects consumers' behavioral intentions, thus opening up the 'theoretical' black box of the relationship between social

presence and consumers' purchase intentions.

6. Conclusions

This study introduces social presence into the mobile shopping context for the first time, enriching the research context of social presence theory. Research on social presence has gradually expanded from traditional communication to distance learning and human-computer interaction as technology has developed and innovated, but has been late in entering the marketing and online shopping fields. For example, because people and machines are always on the move, the boundary between online and offline is further blurred, and the characteristics of location-based mobile and social services are more pronounced. In this new context, whether consumers' social presence changes, how it is measured, and the factors that influence it may be different. By reviewing and interpreting social presence theory, this study will boldly consider social presence as an antecedent variable of consumers' purchase intention in the mobile shopping context, which will further enrich the research context of social presence theory.

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