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Shopping Satisfaction in Mobile Distribution Channels: Focusing on Prudent Shopping Behavior*

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Abstract

Purpose: The aim of this study is to explore the psychological characteristics of users in mobile distribution channels (MDC) during mobile shopping. **Research design, data and methodology:** A conceptual framework based on shopping satisfaction theory was developed, leading to the proposal of a research model to examine the relationships between emotional control (EC), emotional practice (EP), prudential buying tendency (PBT), prudential buying urge (PBU), prudential buying behavior (PBB), and mobile shopping satisfaction (MSS) in MDC. To validate the research model, 125 survey responses were collected from mobile shoppers, and the relationships among EC, EP, PBT, PBU, PBB, and MSS were analyzed using the PLS structural equation model. **Results:** The empirical analysis revealed that EC did not have a significant impact on PBT, while EP had a significant effect on PBT. Moreover, PBT was found to influence both PBU and PBB, with PBU significantly affecting PBB. Finally, the study found that PBB significantly influences MSS. **Conclusions:** This study elucidates the relationships among EC, EP, PBT, PBU, PBB, and MSS, providing valuable insights for enhancing consumer shopping satisfaction in MDC. Practically, the study suggests various strategies for personalized and differentiated mobile customer management. Theoretically, it contributes to the field by stimulating further research on prudent purchasing behavior in mobile commerce.

Keywords : Prudential Shopping Tendency, Urge, Behavior, Mobile Shopping, Satisfaction, Emotional Control, Distribution

JEL Classification Code: M10, M30, M31, L89

1. Introduction

Mobile shopping has experienced significant growth due to recent advancements in mobile technology (Maduku & Thusi, 2023; Hu et al., 2023). According to South Korea's National Statistical Office, online shopping transactions in the country reached KRW 17,919.2 billion (approximately 13.8 billion USD) in January 2023, representing a 6.3% increase (KRW 1,063.4 billion, approximately 82 million

USD) compared to January 2022. Of these transactions, mobile shopping accounted for KRW 13,492.7 billion (approximately 10.4 billion USD), reflecting a 5.6% rise (KRW 713.5 billion, approximately 55 million USD) from January 2022. Mobile shopping offers users added convenience by allowing them to quickly access shopping information and easily make purchases using their smart devices, making it a more attractive option than traditional internet shopping.

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Traditionally, consumers have focused on rational and reasonable shopping activities by conducting thorough information searches in both offline (Hirschman & Holbrook, 1982) and online shopping contexts (Kim et al., 2009). However, it has been shown that both rational judgment and emotional judgment influence actual consumer decision-making in offline (Belk, 1988) and online shopping (Lim & Kim, 2022). Consequently, in this era of advanced technology, understanding the experiences and emotions involved in internet and mobile shopping processes is crucial. Goleman (1998) emphasized the significance of emotional characteristics in human behavior, with emotional intelligence (EI) being a vital factor in human communication processes. Mobile shopping represents a communication process between buyers and sellers in a mobile environment. As such, EI serves as a foundation for fostering more rational shopping behavior by enabling mobile shoppers to regulate and manage their emotions.

The mobile distribution channels (MDC) have recently adopted advanced information technologies such as streamlined shopping processes, convenient information searches, and easy payment systems (Gao et al., 2023; Chopdar et al., 2022; Thu et al., 2023). This trend has led consumers to favor emotional rather than rational shopping experiences. Additionally, e-commerce companies have been leveraging visual effects to induce consumers' online impulse buying behavior (IBB) (Wells et al., 2011). As a result, impulse buying in mobile shopping has surged, giving rise to various issues. Impulse buying is currently being explored from a wide range of perspectives, including consumer sentiment, website design, and consumer behavior (Parboteeah et al., 2009; Wells et al., 2011; Liu et al., 2013). These studies shed light on impulse buying in both offline shopping channels, such as impulse buying tendency (IBT), impulse buying urge (IBU), and impulse buying behavior (IBB) (Stern, 1962; Rook & Fisher, 1995), as well as online counterparts (Hashim et al., 2023; Kimiagari & Malafe, 2021; Sun & Sun, 2024; Xu & Zhao, 2020).

However, research on prudent purchasing behavior remains limited within these contexts. While understanding impulsive purchases is undoubtedly essential for mobile commerce companies to develop effective marketing strategies, gaining insight into prudent purchasing behavior is equally crucial. The rationale is that to enhance customer satisfaction, adopting a positive approach is more important than focusing solely on the negative, much like how psychology has evolved from concentrating on negative psychological phenomena to focusing on positive ones. Generally, individuals who manage and practice their emotions effectively display greater prudence compared to those who do not, leading to lower impulsivity (Matthews et al., 2007). Mobile shoppers who utilize their emotions

effectively are likely to experience satisfaction from their well-informed, careful decision-making process.

Therefore, this study aims to provide valuable insights for future mobile commerce companies to develop marketing strategies by examining the relationships between emotional control (EC), emotional practice (EP), prudent buying tendency (PBT), prudent buying urge (PBU), prudent buying behavior (PBB), and mobile shopping satisfaction (MSS) in MDC.

2. Theoretical Background and Hypotheses

2.1. Conceptual Framework

In recent years, consumers have increasingly favored purchasing products and services through mobile commerce (Chopdar et al., 2022). The primary driving factor behind this preference is the convenience that mobile shopping offers. Unlike traditional internet shopping, mobile shopping allows for effortless information searches and product purchases via mobile apps or mobile websites using smartphones (Chopdar et al., 2022). In this study, we endeavor to analyze the relationship between EC, EP, PBT, PBU, PBB, and MSS among users engaged in MDC.

To develop our research framework, we employed the post-acceptance model (PAM), also known as the expectation confirmation model (ECM). The PAM explains the continuous process of technology acceptance, as proposed by Bhattacharjee (2001). He developed the PAM for online banking services by drawing upon Oliver's (1980, 1981) studies on customer satisfaction, which form the basis of the expectation confirmation theory (ECT). Bhattacharjee (2001) used this theory to describe the continual usage intention of internet banking service users. Similarly, in this study, we constructed the framework for analyzing mobile shopping psychology and behavior, segmenting it into pre-shopping, shopping behavior, and post-shopping stages, in alignment with the models presented in the research of McKnight et al. (2002), Bhattacharjee (2001), and Kim et al. (2009).

2.2. Emotional intelligence (EI)

EI has been extensively investigated by various researchers (Goleman, 1995; Mayer et al., 2000). The core attributes of EI include the ability to recognize, regulate, express, and manage one's own emotions as well as those of others (Goleman, 1995; Wong & Law, 2002). Currently, research on EI is active in fields beyond psychology, including business administration. It is particularly studied within organizations that emphasize interpersonal relationships, with applications across diverse fields such as

marketing, tourism, and management information systems. Zafar et al. (2021) found that EI has a negative relationship with impulsive buying tendencies. Additionally, Wei et al. (2023) explored the impact of online store employees' EI and psychological empowerment on customers' intention to repurchase, while Fihartini et al. (2023) revealed that EI significantly influences shopping satisfaction and loyalty in the online shopping environment.

This study investigates the influence of consumers' EI on prudence in MDC. Goleman (1995), Wong and Law (2002) divided EI into four components: self-emotion recognition, others' emotion recognition, emotional control (EC), and emotional practice (EP). Among these components, EC and EP (e.g., the ability to manage consumers' impulses and prudential willingness) are considered particularly relevant to consumers participating in MDC. These components are important for expressing needs and prompting actions according to one's emotional state (e.g., impulsivity or prudential status) within the shopping environment. Therefore, the research model for this study incorporates the variables of EC and EP to analyze the shopping behavior of mobile shopping users.

2.3. Prudential Buying

Consumers often exhibit a propensity to express their unique individuality during information processing and persuasion, which leads to the formation of urges and subsequent actions to express themselves (Aaker & Lee, 2001). Similarly, in online shopping behavior, individual differences manifest in inclination, urge, and action. Many consumers engage in planned shopping behaviors, while some display unplanned and impulsive shopping tendencies. Dantoni and Shenson (1973) characterized impulsive buying as a sudden desire to make a purchase without prior planning. Wolman (1973) similarly argued that impulsivity arises from a tendency to act without thoughtful consideration, driven by a strong urge in impulsive shopping behaviors. Generally, impulsiveness triggers impulsive buying urges (IBU) (Wells et al., 2011; Lim et al., 2017) and serves as a significant factor in inducing impulsive buying behavior (IBB) (Lim & Kim, 2022).

The development of information technology, which provides a more accessible shopping environment, has further facilitated impulsive buying behavior (Kim et al., 2009; Liu et al., 2013). Numerous studies have examined impulse buying in internet shopping from various perspectives (Wells et al., 2011; Liu et al., 2013; Lim & Kim, 2022). Simultaneously, the rise of mobile technology has led to an increase in IBB on mobile shopping platforms (Chopdar et al., 2022).

However, current research on the impulsive purchases of mobile shoppers—specifically the relationships among

tendencies, urges, and behaviors—remains insufficient. Moreover, studies focusing on prudent purchasing, in contrast to impulsive purchasing, are scarce. Thus, investigating the psychology and behavior of prudent purchasing among mobile shoppers is an urgent requirement. Prudence is defined as a tendency to avoid unnecessary risks by adopting a cautious approach, characterized by not acting on impulse and avoiding subsequent regret (Christopher, 2006). In essence, prudence is the opposite of impulsiveness. We posit that, compared to impulsiveness in shopping behavior, prudence reduces subsequent regret or dissatisfaction and increases satisfaction. In this study, we introduce the concepts of prudential buying tendency (PBT), prudential buying urge (PBU), and prudential buying behavior (PBB) as counterparts to IBT, IBU, and IBB, and explore their relationships with prudent buying activities (PBT, PBU, and PBB) and mobile shopping satisfaction (MSS) in mobile distribution channels (MDC).

2.4. Shopping Satisfaction

Consumer satisfaction in shopping arises from the disparity between the anticipated value of a product prior to purchase and the perceived value after acquisition (Oliver, 1980). When the value of goods and services obtained by consumers exceeds their expectations, they experience purchase satisfaction (Tse & Wilton, 1988; Oliver, 1980). Customer satisfaction is a crucial evaluation metric for business management (Tse & Wilton, 1988; Oliver 1980; Fornell, 1992). In the United States, the American Customer Satisfaction Index (ACSI) was developed to accurately measure and utilize customer satisfaction (Fornell, 1992). Today, it is widely employed as a criterion for assessing customer satisfaction across diverse research areas (Ivanov et al., 2013). For instance, shopping satisfaction is a vital indicator in e-commerce studies (Kim et al., 2004; Madhu et al., 2023; Zariman et al., 2023). Zariman et al. (2023) demonstrated how the e-service quality of mobile commerce applications impacts customer loyalty using the SERVQUAL model.

2.5. Research Hypotheses Development

As previously discussed, EI and the shopping decision-making process are interconnected (Lim & Kim 2022). Belk (1988) argued that emotions play a significant role in the consumer decision-making process within the shopping industry. Among the components of EI, EC and EP are particularly relevant to the decision-making process (Lim & Kim, 2022). Essentially, EI, as a cognitive attribute, influences IBU (Matthews et al., 2007; Lim & Kim, 2022). Thus, we propose that EC and EP impact the decision-making process in shopping behavior particularly in the

arousal of emotions. In other words, consumers who struggle to regulate their emotions may engage more in IBB during shopping. However, EC and EP can also affect prudence. Consequently, mobile shoppers who effectively utilize their EC and EP abilities are more likely to exhibit prudent buying tendency (PBT) rather than impulsive buying tendency (IBT). In simpler terms, EC and EP are likely to contribute to a higher PBT compared to IPB. Based on this understanding, this study hypothesizes that the EC and EP of mobile shopping users influence PBT.

[H1] Consumer's EC will have a positive (+) effect on their PBT in MDC.

[H2] Consumer's EP will have a positive (+) effect on their PBT in MDC.

As previously discussed, a shopper's impulse buying tendency (IBT) influences their impulse buying urge (IBU). IBT is an individual's characteristic related to shopping behavior (Lim et al., 2017). Furthermore, in online shopping environment, impulse purchasing urges are intentional inclinations that positively impact impulse buying behavior (IBB), which is a behavioral characteristic (Lim & Kim, 2022). Hilgard (1980) posited that human attitudes consist of cognition, emotion, and behavioral intention. For instance, Lim and Kim (2022) explained that an individual's propensity, a cognitive attribute, affects impulse purchasing urges in shopping behavior. Additionally, an individual's impulsive psychological disposition influences impulse purchasing urges during the decision-making process in e-commerce environments (Wells et al., 2011; Liu et al., 2013). The urge to purchase impulsively subsequently affects IBB (Verhagen & van Dolen, 2011). Furthermore, a shopper's personal propensity, shaped by experience and learning, ultimately influences shopping behavior (Lim & Kim, 2022). Prudent buying, as the opposite concept of impulsive buying, suggests that PBT, PBU, and PBB are also closely related to each another. Based on these discussions, this study proposes the following research hypotheses.

[H3] Consumer's PBT will have a positive (+) effect on PBU in MDC.

[H4] Consumer's PBU will have a positive (+) effect on PBB in MDC.

[H5] Consumer's PBT will have a positive (+) effect on PBB in MDC.

Previous research on offline shopping has shown that consumers typically experience shopping satisfaction or dissatisfaction based on the discrepancy between their pre-shopping product expectations and the perceived product quality after completing the shopping experience (Tse & Wilton, 1988). Impulsive repurchases generally involve

unplanned buying behaviors by shoppers. As a result, shopping behaviors become impulsive in situations where satisfaction expectations are not formed prior to purchasing a product. Consequently, it is challenging to achieve significant shopping satisfaction under non-prudent circumstances. Similarly, in mobile shopping, users are more likely to meet their expectations when they engage in prudent shopping characterized by thorough information searches and preparation, as opposed to impulsive, careless shopping. Based on these discussions, this study proposes the following hypothesis.

[H6] Consumer's PBB will have a positive (+) effect on MSS in MDC.

2.6. Research Model

As outlined in the theoretical background and research hypotheses above, this study presents a research model depicted in [Figure 1]. The research model illustrates the relationships among mobile shopping users' emotional control (EC), emotional practice (EP), prudent buying tendency (PBT), prudent buying urge (PBU), prudent buying behavior (PBB), and mobile shopping satisfaction (MSS) within mobile distribution channels (MDC).

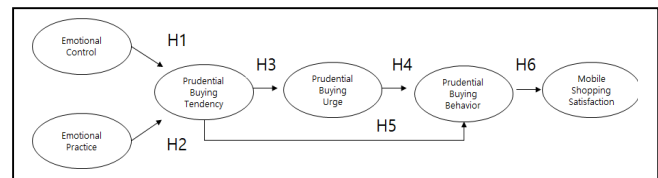


Figure 1: Research Model

3. Survey and Measurement

3.1. Variables

In this study, measurement variables and items are derived from previous research to validate the proposed hypotheses. The conceptual definitions and configurations for each variable's measurement items are as follows: First, the dependent variable is defined as mobile shopping satisfaction (MSS) in mobile distribution channels (MDC). MSS refers to the overall satisfaction that shoppers experience after completing their shopping activities using smartphones. In this study, we adopt the satisfaction scale from Kim et al. (2004), originally developed by Lee and Turban (2001) and Spreng et al. (1996). Second, the concept of prudent buying tendency (PBT) is derived as the opposite of impulsive buying tendency, as proposed by Rook and Fisher (1995). PBT refers to mobile shoppers' personal propensity to shop

prudently in MDC. Prudence, a psychological characteristic that contrasts with impulsivity, is considered one of the strengths in an individual's personality (Christopher, 2006). We develop a PBT scale specifically for mobile shopping users in this study. Third, prudent buying urge (PBU) refers to mobile shopping users' cautious purchasing urges in MDC. This concept is derived from various previous studies (Rook & Fisher, 1995; Parboteeah et al., 2009; Wells et al., 2011). In this study, we develop a PBU scale with reference to Christopher (2006). Fourth, prudent buying behavior (PBB) denotes the actions of consumers who carefully consider their purchases in MDC. This concept is positioned in opposition to impulsive buying behavior. The measurement variables and items are drawn from research on impulsive buying behavior (Rook & Fisher, 1995; Verhagen & van Dolen, 2011). Christopher (2006) suggested that prudence is a significant characteristic of an individual's personality, and we develop a PBB measure based on this concept within MDC. Finally, emotional control (EC) and emotional practice (EP) are variables related to individuals' emotional management in the context of human communication. Both EC and EP are components of emotional intelligence (EI). For this study, we utilize measurement concepts and items based on the research by Wong and Law (2002).

3.2. Survey

In this study, we employed a 7-point multi-item scale to assess mobile shopping users' EC, EP, PBT, PBU, PBB, and MSS. Data collection was conducted using Google Forms, and statistical analysis was performed using SMART-PLS software.

We collected 125 responses from individuals (e.g., university student, faculty member and university staff) with mobile shopping experience in the Republic of Korea. The demographic characteristics of the respondents are as follows: Regarding gender distribution, 73 respondents were male, and 52 were female. In terms of education level, there were 6 high school graduates, 3 college attendees, 1 college graduate, 82 university students, 13 university graduates, 14 postgraduate students, and 6 postgraduate graduates. Concerning occupational characteristics, 103 respondents were students, 15 were office workers, 3 were professionals, 1 was a homemaker, 1 was unemployed, and 2 had other occupations. Examining daily internet usage time, 15 respondents used the internet less than 1 hour, 38 used it between 1 and 2 hours, 37 used it between 2 and 3 hours, 18 used it between 3 and 4 hours, and 17 used it for more than 4 hours. Regarding monthly mobile shopping frequency, 54 respondents shopped once, 33 shopped twice, 14 shopped three times, 11 shopped four times, 8 shopped five times, and 5 shopped more than seven times.

4. Empirical Analysis Results

4.1. Measurement Model

In this study, we assessed the reliability and validity of the measurement model using partial least squares (PLS) approach. The PLS analysis results, as presented in Table 1, evaluated the reliability of each study variable using composite reliability (CR) and Cronbach's alpha (CA) (Hair et al., 2013). In general, CR and CA values of 0.7 or higher are considered satisfactory. The reliability values for EC, EP, PBT, PBU, PBB, and MSS all exceeded 0.7, indicating adequate reliability. However, the CA value for PBT was slightly lower at 0.61, while the CR value was 0.84. Although CA value for PBT was marginally below the ideal threshold, it still met the minimum criterion of 0.6 for reliability assessment. Therefore, we concluded that the variables in this study were generally suitable for empirical analysis.

Table 1: Reliability and Validity

Variables	AVE	CR	CA
EC	0.78	0.93	0.91
EP	0.72	0.91	0.87
MSS	0.74	0.92	0.89
PBT	0.72	0.84	0.61
PBU	0.75	0.90	0.83
PBB	0.69	0.87	0.78

Table 2: Correlation Coefficient and AVE

Variables	EC	EP	MSS	PBT	PBU	PBB
EC	0.88*	·	·	·	·	·
EP	0.45	0.85*	·	·	·	·
MSS	0.09	0.27	0.86*	·	·	·
PBT	0.22	0.32	0.09	0.85*	·	·
PBU	0.15	0.35	0.11	0.71	0.87*	·
PBB	0.30	0.37	0.17	0.76	0.74	0.83*

※ *the square root of AVE (Average Variance Extracted)

Generally, an AVE value of 0.5 or higher is considered to indicate validity. As shown in <Table 1>, the AVE values for the variables in this study all exceed 0.5, confirming that validity has been secured. Additionally, as depicted in <Table 2>, discriminant validity for the study variables is confirmed when the square root of AVE exceeds the correlation values of other variables (Hair et al., 2013). The measurement variables in this study meet the fundamental requirements for discriminant validity. These values were greater than other correlation coefficients, confirming that the study variables employed satisfy the criteria for discriminant validity.

4.2. Structural Model Results

Next, to examine the research hypotheses, we analyzed the causal relationships between independent and dependent variables using PLS analysis for the research model. In PLS analysis results, the explanatory power (R-squared) of this research model was 0.11 for PBT, 0.51 for PBU, 0.65 for PBB, and 0.03 for MSS. Although the explanatory power for some dependent variables in this research model was relatively low, most indicators appeared to have sufficient explanatory power. The results of each hypothesis test are as follows.

The verification results of H1, H2, H3, H4, H5, and H6 are as follows: First, H1, which posited that the EC of mobile shopping users has a positive effect on PBT, was rejected (Beta = .1, t-value = .85). In other words, EC was found not to influence PBT. Second, H2 asserted that mobile shopping users' EP has a positive effect on their PBT and was supported at a significance level of .01 (Beta = .27, t-value = 2.54*). Third, H3 was accepted at a significance level of .001 (Beta = .71, t-value = 16.16***). Forth, H4, which examined the relationship between shopping users' PBU and PBB in MDC, was accepted at a significance level of 0.01 (Beta = .47, t-value = 6.98***). Fifth, H5 proposed that mobile shopping users with a PBU would perform PBB at a significance level of .001 (Beta = .4, t-value = 5.16***). Lastly, H6 was rejected (Beta = .17, t-value = 1.88). In summary, H1 and H6 were rejected, while H2, H3, H4, and H5 were supported.

Table 3: SEM Results

Hypotheses	Beta	t-value	Result
[H1] EC → PBT	.1	.85	Rejected
[H2] EP → PBT	.27	2.54*	Accepted*
[H3] PBT → BPU	.71	16.16***	Accepted***
[H4] PBT → PBB	.47	6.98***	Accepted***
[H5] PBU → PBB	.4	5.16***	Accepted***
[H6] PBB → MSS	.17	1.88	Rejected
※ t > 3.30 (p<0.001***), t > 2.58 (p<0.01**), t>1.96 (p<0.05*)			
※ Bootstrapping times = 1000			

5. Conclusions

5.1. Discussions

The findings of this study are summarized as follows:

First, H1 was rejected, contrary to our initial expectations, indicating that EC did not influence PBT. In this study, PBT is the opposite concept of IBT, which has a strong inverse relationship with EI. Generally, EI and impulse buying are considered to have a negative association (Matthews et al., 2007; Lim & Kim, 2022).

Therefore, the result of H1 deviates from these discussions, suggesting a need for more in-depth analysis of the relationship between PBT and EC.

Second, H2 was supported, indicating that EP affected PBT. Therefore, mobile commerce companies should recognize the relationship between mobile shoppers' EI and prudence, which necessitates segmenting and managing cautious customers through targeted marketing.

Third, H3 was supported, implying that shoppers who effectively use PBT are more likely to experience PBU. As mobile shopping users' preferences and desires are closely related, sales strategies for utilitarian and hedonic products based on this relationship could yield beneficial results.

Fourth, H4 was supported, examining the relationship between PBU and PBB in MDC. The results showed that users with PBT engaged in PBU, and that those with PBU also performed PBB.

Fifth, H5 was supported, revealing that cautious users with PBU tend to exhibit careful mobile shopping behavior. Accordingly, mobile shopping companies should implement customer relationship management based on these characteristics.

Lastly, H6 was rejected, demonstrating that no relationship exists between PBB and MSS. The rejection of H6 might be attributed to excessive prudence leading to delays in decision-making in mobile shopping process. In general, excessive information search activities can result in time-consuming problems due to the over-exploration of shopping information. To further investigate the issue of H6's rejection, future studies should conduct an in-depth analysis of varying PBB levels (e.g., high, moderate, low PBB) and customer satisfaction.

5.2. Implications

This study examines the relationships among EC, EP, PBT, PBU, PBB, and MSS in MDC. The practical implications of this study are as follows:

First, this study demonstrates that EC influences purchase prudence (i.e., PBT, PBU, and PBB) in MDC. Consequently, EC plays a crucial role in the interactions between mobile shopping users and mobile shopping platforms, such as apps. Therefore, mobile commerce companies should develop customer management and marketing strategies that consider the relationships among EP, EC, PBT, PBU, and PBB in MDC.

Second, this study validates the relationship between PBT, PBU, and PBB concerning consumers' prudent buying activities amid the growth of mobile shopping. Conversely, this study does not empirically confirm that PBB significantly affects MSS. Today, mobile commerce companies must strive to enhance the satisfaction of mobile shoppers. For instance, providing detailed guidelines for the

purchasing process, comprehensive product descriptions, a secure payment system, and a convenient interface promotes purchase prudence among mobile shopping users. These efforts help mobile commerce companies achieve higher customer satisfaction and loyalty. In addition, this study suggests various strategies for personalized and differentiated mobile customer management.

The theoretical implications of this study are as follows:

The first theoretical implication lies in its introduction of the concept of prudent purchasing, as opposed to impulsive purchasing, into the analysis of mobile shopping behavior—a topic that has garnered attention in mobile commerce studies. Currently, research on purchase prudence in MDC is scarce. Given the higher convenience of mobile shopping compared to internet shopping, more careful consumer behavior is necessary to avoid problematic shopping decisions.

The second theoretical implication of this study proposes a theoretical basis for personalized and differentiated mobile customer management studies, encouraging further research on prudent purchasing within mobile commerce. Furthermore, this study holds academic significance by introducing the concept of EC and EP, variables gaining traction for their critical influence on mobile shopping users' psychology and behavior. Current studies on mobile shopping consumers' buying behavior, which reflect EI, are limited. Hence, this study provides a theoretical foundation for stimulating continued investigation into EI of mobile shopping users.

5.3. Limitations and Future Study Directions

First, acquiring sufficient data is crucial for obtaining reliable results in the empirical analysis of structural equation models. In this study, the causal relationships between the dependent and independent variables were examined using the bootstrapping method with a relatively small sample size, primarily consisting of college students. Consequently, the results may not be generalizable due to the limited data collected from a narrow segment of mobile shopping users. Therefore, caution should be exercised when applying these findings to real-world mobile shopping businesses. Future research should aim to obtain a larger sample size and analyze a broader range of mobile shopping user characteristics.

Second, Verplanken and Herabadi (2001) suggested that impulse psychology and behaviors vary based on individual tendencies toward impulse buying. This study did not consider consumer characteristics—such as mobile device type, economic level, and levels of internet and mobile shopping usage—when analyzing the relationships among mobile shopping users' EC, EP, PBT, PBU, PBB, and MSS. This limitation constrains the depth of the analysis in

understanding the distinct shopping behavior traits of mobile shopping users. Therefore, future studies should include a more diverse range of consumer characteristics to better capture individual differences among mobile shopping users.

Third, this study encounters limitations in verifying H6, which pertains to the relationship between prudent buying behavior and shopping satisfaction, based on previous research. As previously mentioned, future research should investigate the moderating effects of various levels of PBB on customer satisfaction to provide a more comprehensive understanding of this relationship.

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