Is Mobile Shopping Faster? The Compatibility Between Decision-Making Scenarios and Cognitive Styles (Postprint)

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Abstract

Prior research on factors influencing consumer delayed choice has primarily focused on decision complexity, decision-maker characteristics, or emotions, with limited in-depth investigation of decision contexts. In the internet shopping era, PC and mobile terminals have become important consumption scenarios. Currently, inconsistent conclusions also exist regarding whether mobile terminals accelerate consumer decision-making processes. This paper introduces dual-system theory of decision-making to explain previously seemingly contradictory findings. Consumers' purchase decision patterns are influenced not only by decision tasks (product price) but also by decision scenarios (purchase terminals). When scenarios and decision tasks activate consistent thinking modes in consumers, decision fluency is enhanced and delayed choice is reduced. This study finds that mobile terminals (PC terminals) and low (high) price products more readily activate compatible experiential (rational) thinking, reducing the tendency toward delayed choice. Conversely, when they simultaneously activate two conflicting decision-making thinking modes, the tendency toward delayed choice increases. This paper extends the previous singular decision-making thinking mode of consumers to the compatibility issue of thinking modes activated by multiple factors, from the perspectives of scenario priming and price priming; simultaneously, by exploring the issue of delayed choice, this study provides implications for pricing strategies and contextual marketing.

Full Text

Preamble

Does Mobile Shopping Lead to Faster Decisions? The Compatibility Between Decision Context and Thinking Style

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Abstract

Existing literature on factors influencing consumer choice deferral has primarily focused on decision complexity, individual traits, or emotional states, with limited examination of decision contexts. In the era of internet shopping, PC and mobile terminals have become important consumption scenarios, yet current research offers inconsistent conclusions regarding whether mobile terminals accelerate consumer decision-making. This paper introduces dual-process theory to explain these seemingly conflicting findings. Consumers' purchase decision modes are influenced not only by decision tasks (product price) but also by decision contexts (purchase terminal). When the thinking style activated by the context aligns with that triggered by the task, decision fluency increases and choice deferral decreases. We find that mobile (PC) terminals and low (high) price products more readily activate compatible experiential (rational) thinking, thereby reducing choice deferral. Conversely, when these factors trigger conflicting decision mindsets, they increase choice deferral. This research extends the traditional view of consumers' single decision-thinking mode to address the compatibility of multi-factor activated thinking styles from both contextual and price priming perspectives, while offering insights for pricing strategies and contextual marketing through its investigation of choice deferral.

Keywords: choice deferral; dual-process theory; rational thinking; experiential thinking; purchase terminal

1.1 Problem Statement

The rapid development of internet technology has made online shopping a significant form of consumption (Chang et al., 2012; Jing et al., 2007; Brengman et al., 2003; Kozinets, 2016). The vast amount of information available in online shopping, combined with reduced costs of deferral, has led increasing numbers of consumers to add items to their shopping carts and wait or consider for some time before making decisions. This situation may cause consumers to abandon purchases, which is detrimental to businesses, while also representing missed opportunities for consumers themselves (Cho et al., 2006; Mourali et al., 2018). Due to the relatively singular nature of traditional shopping modes, previous research on factors influencing choice deferral in consumer decision-making has primarily focused on the decision task itself and individual emotions (Crockett et al., 2013; Pejsachowicz & Toussaert, 2017; Mochon, 2013; Hedgcock et al., 2016), with scarce consideration of contextual factors beyond the decision itself.

In recent years, mobile internet technology has gradually mobilized online shopping (Madrigal, 2014). Consumers can now shop using not only desktop computers but also mobile terminals such as smartphones anytime and anywhere, enriching consumption scenarios. On one hand, the fragmented timing, convenience, and touch effects of mobile shopping contexts can promote active

consumer choice (Kahneman, 2011; Madrigal, 2014; Shen et al., 2016). On the other hand, PC terminals can display more information, causing consumers to consider more due to information discrimination (Kahneman, 2011). Conversely, information display on mobile terminals can create visual crowding, requiring consumers to spend more time and effort on product evaluation (Sohn et al., 2017). In fact, differences in psychological modes when using different terminals lead to variations in decision-making behavior (Shen et al., 2016). Meanwhile, online shopping facilitates price comparison, making price a significant factor influencing consumer decision-making behavior (Dodds et al., 1991).

Therefore, this paper argues that conflicting conclusions arise because consumer purchase decisions are not determined by a single factor (Mallapragada et al., 2016), but rather by the joint influence of consumption context and decision task characteristics. Using purchase terminal and product price as entry points, this paper attempts to resolve seemingly contradictory conclusions by examining the interactive influence mechanism of their compatibility on choice deferral.

Dual-process theory posits that individuals employ two system modes in decision-making: heuristic and analytic. When using mobile versus PC terminals, users correspond to experiential and rational thinking styles (Novak & Hoffman, 2009; Shen et al., 2016). Similarly, regarding price levels, purchasing high-price products inclines consumers toward rational decision modes, while low-price products prompt quick, effortless decision modes. However, contemporary consumer decisions are influenced not by product factors alone, but by multiple factors including context and product characteristics. When consumers face decision difficulties considering multiple factors, they reduce psychological conflict through choice deferral (Li & Fu, 2006), yet few studies have deeply explored this psychological conflict. This paper argues that only when the thinking modes triggered by purchase terminal and product price level are compatible can choice deferral be reduced; when they trigger conflicting mindsets, choice deferral increases.

In summary, this research uses online shopping purchase terminals as an entry point, with product price as a moderator, to verify the influence of purchase terminal-product price compatibility on consumer choice deferral and its underlying mechanism (research framework shown in Figure 1 [Figure 1: see original paper]). To verify the effects of shopping terminal and product price on choice deferral, we first collected real transaction order data through cooperation with a wine company to test our hypotheses. We then conducted a laboratory experiment to further verify the underlying mechanism.

1.2.1 Choice Deferral

Choice deferral refers to individuals' decision not to choose when they should, including postponing choice (selecting a deferral option) or refusing to select among available options (Anderson, 2003). Thus, choice deferral represents behavior where individuals escape decisions by postponing them when facing

decision difficulties (Anderson, 2003). Choice deferral not only reduces business revenue but may also mean lost opportunities for consumers, making research on its influencing factors and mechanisms crucial.

Current research on factors influencing choice deferral focuses on four aspects: (1) Decision conflict: When consumers struggle to trade off product attributes among alternatives, they tend to defer choice (Dhar, 1997a). (2) Decision strategy: Consumers determine decision strategies based on decision tasks, which influence decision difficulty and subsequently choice deferral (Dhar, 1996). (3) Time pressure: Dhar and Nowlis (1999) noted that under time pressure during choice stages, people adopt more non-compensatory strategies, increasing attention to uniqueness and reducing choice deferral. (4) Emotional factors: Consumers' anxiety and desire levels during decision-making affect choice deferral (Dai & Hsee, 2013; Lichters et al., 2016; Rassin & Muris, 2005). When consumers discover post-purchase that the price was higher than current prices, they experience stronger regret emotions (post-comparison emotions). To avoid this negative emotion, consumers are more inclined to defer choice (Cooke et al., 2001; Mourali, 2018). Therefore, factors influencing choice deferral can be summarized as decision difficulty (decision conflict, decision strategy, time pressure) and negative emotions.

Reviewing existing literature reveals that previous choice deferral research has primarily focused on the alternative evaluation and comparison stage (Dhar, 1996, 1997a, 1997b, 1999; Greenleaf & Lehmann, 1995; Mourali, 2018; Pejsachowicz & Toussaert, 2017). However, in online shopping, consumers often procrastinate at the shopping cart or final payment stage without making timely decisions (Cho et al., 2006). Moreover, previous studies have mainly examined how decision tasks themselves and individual traits or emotions affect choice deferral (Crockett et al., 2013; Hedgcock et al., 2016; Li et al., 2017; Mochon, 2013; Pejsachowicz & Toussaert, 2017), with less consideration of external consumption context effects. For online shopping, purchase terminals as contextual factors (Novak & Hoffman, 2009) affect consumers' decision processes through situational triggers and touch effects, even though consumers cannot physically touch and evaluate products (Peck & Johnson, 2011; Oviatt et al., 2012; Shen et al., 2016). Therefore, this paper investigates how purchase terminal (contextual factor) and product price (decision task) compatibility influences choice deferral.

1.2.2 Effects of Shopping Terminal and Price Level on Choice Deferral

Research indicates that the fragmented timing, touch-screen convenience, and touch effects of mobile shopping contexts make consumers more emotional, increasing decision speed and satisfaction (Brasel & Gips, 2014; Dijksterhuis & Olden, 2006; Elder & Kahneman, 2011; Shen et al., 2016; Zhao et al., 2011). Within the same time unit, PC terminals can display more information to consumers, who consider more due to information discrimination (Kahneman, 2011).

Conversely, information display on mobile terminals can create visual crowding, requiring consumers to spend more time and effort on product evaluation (Sohn et al., 2017).

This paper argues that conflicting conclusions arise because consumer purchase decisions are not determined by single factors but by the joint influence of consumption context and decision task characteristics. Using purchase terminal and product price as manipulable (directly perceivable) entry points, this research aims to resolve seemingly contradictory conclusions by examining how their compatibility affects choice deferral. Product price level influences consumers' perceived financial risk, which subsequently affects decision thinking modes. With constant product quality, low prices reduce perceived financial risk, prompting quick judgments, while high prices increase perceived financial risk, causing hesitation (Liu et al., 2012; Dodds et al., 1991; Grewal et al., 1998; Kotler & Keller, 2009; Roselius, 1971).

Based on this discussion, we propose an interaction effect between purchase terminal and product price, with the following hypotheses:

H1a: For low-price products, consumers using PC terminals show higher choice deferral tendency than those using mobile terminals.

H1b: For high-price products, consumers using mobile terminals show higher choice deferral tendency than those using PC terminals.

Study 1 verifies these hypotheses using real sales order data collected from a company.

1.2.3 Dual-Process Theory

Many scholars have proposed dual-process theory models for decision-making and reasoning: the analytic system and the heuristic system (Cryder et al., 2016; Dijksterhuis et al., 2006; Evans, 2002, 2003; Kahneman & Frederick, 2002; Sloman, 1996; Stanovich & West, 2000). The analytic system refers to controlled processing that relies more on rational thinking and judgment, while the heuristic system refers to automatic processing that relies more on emotion and intuition (Sun et al., 2007). Based on these two systems, human thinking styles also have two types: rational thinking style and experiential thinking style. Rational thinking style is a "cold" mode based on deliberate, analytic thinking. Conversely, experiential thinking style is a "hot" mode based on intuitive, rapid judgment (Epstein, 1994; Hsee & Rottenstreich, 2004; Metcalfe & Mischel, 1999; Shafir et al., 1993; Zhao et al., 2011).

Current research on factors influencing thinking styles examines both internal and external factors. Some scholars view thinking style as a relatively stable individual trait, while others consider it a state specific to particular situations (Novak & Hoffman, 2009). Therefore, shopping terminals as consumption contexts influence thinking style.

How do these two systems interact? One view suggests they are mutually exclusive and cannot operate simultaneously during decision-making (Fiske & Neuberg, 1999). Another view posits that the two systems are independent, parallel, and simultaneously affect individual decision-making processes (Evans, 2002, 2003; Kahneman & Frederick, 2002; Sloman, 1996, 2002; Stanovich & West, 2000). Subsequently, scholars used Process Dissociation Procedure (PDP) to support this latter view (Ferreira et al., 2006; Sun et al., 2007). This paper adopts the perspective that both systems simultaneously influence consumer decisions.

When facing decision difficulties, consumers often reduce psychological conflict through choice deferral (Li & Fu, 2006; Pejsachowicz & Toussaert, 2017). On one hand, mobile shopping terminals' mobility, touchability, low involvement, and fragmented spatiotemporal usage make consumers more emotional and dependent on experiential intuition for quick decisions (Kahneman, 2011; Shen et al., 2016; Zhao et al., 2011), promoting experiential thinking mode. Compared with high-price products, consumers perceive relatively lower risk when purchasing low-price products, prompting them to choose quick, effortless decision modes (Liu et al., 2012; Dodds et al., 1991; Dijksterhuis, 2004; Dijksterhuis & Olden, 2006; Kotler & Keller, 2009; Wang et al., 2015). This appears more compatible with the experiential thinking mode activated by mobile terminals, increasing decision fluency (Mosteller et al., 2014) and reducing choice deferral tendency. Conversely, compared with low-price products, consumers perceive relatively higher risk when purchasing high-price products, prompting analytic, rational decision modes (Kotler & Keller, 2009), which conflicts with the experiential thinking mode activated by mobile terminals, increasing psychological mode conflict and choice deferral tendency.

On the other hand, PC terminals display information in detail and richness, with relatively stable usage scenarios that facilitate comprehensive information comparison and deep rational thinking (Kahneman, 2011), triggering rational thinking mode. This appears more compatible with the rational decision mode for high-price purchases, increasing decision fluency and reducing choice deferral tendency, while conflicting with the quick decision mode for low-price purchases, increasing psychological mode conflict and choice deferral tendency. Based on this discussion, we propose:

H2a: When consumers purchase low-price products on PC terminals, conflicting thinking modes are triggered, increasing choice deferral tendency compared to mobile terminals. Conversely, purchasing low-price products on mobile terminals activates compatible experiential thinking, reducing choice deferral tendency compared to PC terminals.

H2b: When consumers purchase high-price products on mobile terminals, conflicting thinking modes are triggered, increasing choice deferral tendency compared to PC terminals. Conversely, purchasing high-price products on PC terminals activates compatible rational thinking, reducing choice deferral tendency compared to mobile terminals.

2 Study 1: Secondary Data Analysis of Shopping Terminal Type and Product Price Level Effects on Choice Deferral

To examine how online shopping terminal type (PC vs. mobile) and product price level affect purchase choice deferral, we cooperated with a wine company to obtain and analyze two months of Baijiu sales order data from their Tmall store. Since choice deferral tendency can be measured by decision response time (Frost & Shows, 1993; Pejsachowicz & Toussaert, 2017), this study uses order duration to represent choice deferral. We selected a single brand' s alcoholic products for three reasons: (1) wine products have clear high/low price distinctions; (2) controlling for brand and product category confounds facilitates analysis; and (3) alcohol is a common fast-moving consumer good relevant to this research.

2.1 Data Collection

This study obtained 16,410 backend sales order records for 41 Baijiu products from the brand's Tmall flagship store between August 26, 2016 and November 1, 2016. No major promotional activities occurred during this period, controlling for price variation effects. Order data included product name, unit price, order creation time, payment completion time, and purchase terminal. To investigate product price effects on choice deferral, we only selected orders purchasing a single bottle. As this study does not consider repeat purchase effects, we screened for first-time buyers of each product to control for familiarity effects. The final dataset contained 3,674 records for analysis. With the company' s consent, we present only cross-tabulations and descriptive statistics for different price levels and purchase terminals in Tables 1 and 2 .

2.2 Data Analysis

This section analyzes user purchase order duration (decision duration = payment completion time - order time), purchase terminal, and product unit price data for 41 different products. Since purchase terminal data are single digits while order duration maximum values approach 100,000 seconds, we log-transformed order duration data before analysis to improve robustness.

Interaction effect of purchase terminal and price level on choice deferral: To explore differences in order duration between mobile and PC terminals at high and low price levels, we first calculated the difference in average order duration between the two terminals at each price point (y = t(PC-mobile)), then attempted to identify the price threshold where this difference 突变 (structural break). We employed threshold regression (Hansen, 2000):

$$y = \mu + \sum_{i=1}^{m} \beta_i x I(x \in \Omega_i) + \varepsilon$$

where $I(\cdot)$ is an indicator function. Considering only two price categories, with

minimum price of 12 yuan and maximum of 400 yuan (see appendix), we set m=2 and:

$$I(x \in \Omega_i) = \begin{cases} 1 & \text{if } x \in \Omega_i \\ 0 & \text{if } x \notin \Omega_i \end{cases}$$

$$\Omega_1 = \{x : 12 \le x \le \gamma\}, \quad \Omega_2 = \{x : \gamma \le x \le 400\}$$

where is the constant term, i are regression coefficients for each side of the threshold, is the error term, and is the threshold value. We estimated the model using R.

Calculations (Hansen, 2000) showed that when = 209, the model' s residual sum of squares was minimized (SSRmin = 25.49; results for other values are in the appendix). Parameter estimates at this threshold appear in Table 3 (= 0.001, p = 0.757; = -0.01, p < 0.001). A Chow test confirmed the threshold at = 209 (LM statistic = 7.84 > F(2,36) = 3.26, p < 0.05), indicating and differ significantly. Thus, at 209 yuan, the difference in order duration between PC and mobile terminals shows a structural break (discontinuity), as shown in Figure 2 [Figure 2: see original paper].

Consequently, in Study 1 we treat products priced below 209 yuan as low-price products and those at or above 209 yuan as high-price products.

When product price was below 209 yuan, PC terminal order duration was significantly longer than mobile terminal duration (Mmobile = 2.34, SDmobile = 1.11; MPC = 3.61, SDPC = 1.49; F(1,2554) = 605.82, p < 0.001, Cohen' s d = 0.97). When product price was at or above 209 yuan, PC terminal order duration was shorter than mobile terminal duration (Mmobile = 5.37, SDmobile = 1.22; MPC = 4.53, SDPC = 0.91; F(1,1116) = 44.39, p < 0.001, Cohen' s d = 0.78). The divergent trends in order duration between terminals on either side of the threshold price confirm price' s moderating role in the relationship between purchase terminal and choice deferral, supporting H1a and H1b.

2.3 Discussion

Through cooperation with a wine company and analysis of secondary sales order data, Study 1 found that the interaction between purchase terminal and price level influences online purchase choice deferral. Specifically, for low-price products, PC terminals show stronger choice deferral tendencies than mobile terminals; for high-price products, mobile terminals show stronger choice deferral tendencies than PC terminals.

This study verified the main and moderating effects. Next, we use experimental scenario simulation to further examine how different purchase terminals affect price level and decision time, and to explore the underlying mechanism for enhanced robustness.

3 Study 2: Experimental Investigation of the Mechanism Based on Thinking Style Compatibility

Study 1 demonstrated the interaction effect of shopping terminal and price level on choice deferral using real order data, ensuring external validity. Study 2 uses scenario experiments to replicate Study 1' s results while controlling for brand and other factors, deeply exploring the internal mechanism of how shopping terminal and price level interact to affect choice deferral, thereby ensuring strong internal validity.

3.1 Experimental Design and Data Collection

This experiment employed a 2 (purchase terminal: mobile vs. PC) × 2 (price level: high vs. low) between-subjects design. The purposes were to: (1) verify the main effect of mobile terminals on choice deferral and whether it operates through experiential and rational thinking (testing main effects and mediation); and (2) re-verify product price' s moderating effect on the main effect.

Between August 21-23, 2018, 138 university students participated (67 males, 48.6%; 71 females, 51.4%), randomly assigned to the four conditions. To ensure validity, participants completed the experiment in a laboratory using either mobile phones or computers. Following previous price research, we selected daily-use body wash as the experimental stimulus (Beatty & Smith, 1987; Chezy, 2004).

Participants imagined they were shopping online for body wash and entered the following scenario: "You are currently browsing a well-known shopping website on this terminal, planning to purchase body wash. After browsing and evaluating, you have found a satisfactory product: 1000g capacity, sufficient stock." Product prices differed by condition: low-price group saw 29.90 yuan; high-price group saw 259.90 yuan. To avoid brand effects, we used a fictitious brand, with identical product information across conditions except price (see Figure 3 [Figure 3: see original paper]).

After reading the scenario, participants answered questions about choice deferral, experiential thinking mode, rational thinking mode, mobile operation experience, PC operation experience, and price perception. Choice deferral items included: "I would not purchase this product but continue searching for other body washes" ; "I would add this product to my shopping cart and decide later whether to pay" ; "When ready to pay for this product on this terminal, I would abandon payment after consideration" (Cho et al., 2006; Lichters et al., 2016). Experiential thinking mode items included: "When shopping on this terminal, I decide based on intuitive feelings about the product" ; "When deciding whether to buy on this terminal, I follow my gut" ; "When buying on this terminal, I trust my intuition" ; "I make the decision impulsively" (Novak & Hoffman, 2009). Rational thinking mode items included: "When buying this product on this terminal, I consider carefully" ; "I conduct systematic analysis" ; "I evaluate all aspects step-by-step before deciding" ; "I am very aware of my

thinking process" (Novak & Hoffman, 2009). Mobile manipulation check items included: "This terminal is portable" ; "This terminal operates via touch" ; "This terminal shows limited information during shopping" (Kahneman, 2011; Shen et al., 2016). PC manipulation check items included: "This terminal is relatively fixed" ; "This terminal is operated by mouse and keyboard" ; "This terminal can show abundant information during shopping" (Kahneman, 2011; Shen et al., 2016). High price perception items included: "I think this product is expensive" ; "I want to continue browsing for cheaper body wash" ; "Spending more time to find cheaper body wash makes sense" (Lichtenstein et al., 1993). Low price perception items included: "I think this product is inexpensive" ; "I think this product is reasonably priced" ; "Spending more effort to find cheaper body wash is meaningless" (Lichtenstein et al., 1993; Mathwick et al., 2001). All measures used 7-point scales (1 = strongly disagree, 7 = strongly agree).

3.2 Results

Manipulation checks: Results confirmed successful price level manipulation. The high-price group scored significantly higher on high price perception (Mhigh = 5.54, SDhigh = 0.88; Mlow = 3.32, SDlow = 0.96; $F(1,138) = 199.96$, $p < 0.001$, Cohen' s d = 2.41). The low-price group scored significantly higher on low price perception (Mlow = 5.57, SDlow = 0.99; Mhigh = 3.67, SDhigh = 1.26; $F(1,138) = 124.51$, $p < 0.001$, Cohen' s d = 1.68).

Terminal usage experiences also differed significantly. Mobile terminal participants scored higher on mobile-touch experience (Mmobile = 5.01, SDmobile = 0.91; MPC = 3.56, SDPC = 0.72; $F(1,138) = 107.28$, $p < 0.001$, Cohen' s d = 1.77). PC terminal participants scored higher on stability experience (MPC = 5.43, SDPC = 0.91; Mmobile = 3.09, SDmobile = 0.85; $F(1,138) = 246.88$, $p < 0.001$, Cohen' s d = 2.66).

Main effect analysis: No significant difference in choice deferral emerged between mobile and PC terminals (Mmobile = 4.43, SDmobile = 1.06; MPC = 4.68, SDPC = 1.08; $F(1,138) = 0.18$, $p = 0.18$, Cohen' s d = 0.23).

Moderation effect analysis: Examining how purchase terminal and price level compatibility affects choice deferral revealed significant moderation ($F(1,138) = 226.06$, $p < 0.001$, adjusted $R^2 = 0.625$, $^2 = 0.63$). Planned comparisons showed that at high price levels, mobile terminals produced stronger choice deferral than PC terminals (Mmobile = 5.26, SDmobile = 0.61; MPC = 3.87, SDPC = 0.63; $F(1,71) = 9.44$, $p < 0.001$, Cohen' s d = 2.24). At low price levels, PC terminals produced stronger choice deferral than mobile terminals (MPC = 5.55, SDPC = 0.71; Mmobile = 3.57, SDmobile = 0.68; $F(1,67) = 11.65$, $p < 0.01$, Cohen' s d = 2.85). These results replicate Study 1, supporting H1a and H1b. (Notably, based on choice deferral definitions and previous literature (Cho et al., 2006; Lichters et al., 2016), the mobile-low price and PC-high price groups scored below 4, indicating they would choose immediately rather than defer. The mobile-high price and PC-low price groups

scored above 4, indicating they would defer choices, confirming experimental validity.)

Mediation analysis: In this study, experiential thinking mediates the interactive effect of mobile terminal and low price on choice deferral, while rational thinking mediates the interactive effect of PC terminal and high price. We first used Baron and Kenny' s (1986) approach, then verified mediation through bootstrapping for greater reliability (Huang et al., 2018; Zhu et al., 2017; Hayes, 2013, 2015; Preacher et al., 2007; Zhao et al., 2010).

Experiential thinking mediation: The test included four models (see Table 5). First, regressing choice deferral on mobile terminal, price level, and their interaction (Model 1) showed a significant interaction (= 1.28, $p < 0.05$). Next, regressing experiential and rational thinking on these predictors (Models 2 and 3) revealed that price level (= 1.04, $p < 0.05$) and the interaction (= -1.79, $p < 0.01$) significantly predicted experiential thinking, while no coefficients significantly predicted rational thinking. This indicates mobile terminals triggered experiential thinking. Finally, regressing choice deferral on all predictors plus both thinking styles (Model 4) showed experiential thinking significantly affected choice deferral (= -0.22, $p < 0.05$), while rational thinking did not. After adding the thinking styles, the interaction' s effect became non-significant (= 0.89, $p > 0.05$), indicating full mediation by experiential thinking. Figure 5 [Figure 5: see original paper] shows the mediation path.

Given bootstrapping' s higher power and distribution-free nature (Zhao et al., 2010), we used it for robust verification. Using Model 8 with 5,000 samples at 95% confidence, the moderated mediation effect for experiential thinking did not include zero (LLCL = 0.01, ULCL = 0.14), confirming its existence. When mediation was present, the mobile × price interaction effect included zero (LLCL = -0.21, ULCL = 0.20), confirming full mediation.

Rational thinking mediation: The test also included four models (see Table 6). First, regressing choice deferral on PC terminal, price level, and their interaction (Model 1) showed a significant interaction (= -1.11, $p < 0.05$). Next, regressing experiential and rational thinking on these predictors (Models 2 and 3) revealed that PC terminal (= 0.28, $p < 0.05$) and the interaction (= -1.31, $p < 0.01$) significantly predicted rational thinking, while no coefficients significantly predicted experiential thinking. This indicates PC terminals triggered rational thinking. Finally, regressing choice deferral on all predictors plus both thinking styles (Model 4) showed rational thinking significantly affected choice deferral (= 0.50, $p < 0.001$), while experiential thinking did not. After adding the thinking styles, the interaction' s effect became non-significant (= -0.45, $p > 0.05$), indicating full mediation by rational thinking. Figure 6 [Figure 6: see original paper] shows the mediation path.

Bootstrapping (Model 8, 5,000 samples, 95% confidence) showed the moderated mediation effect for rational thinking did not include zero (LLCL = 0.14, ULCL = 0.50), confirming its existence. When mediation was present, the PC

× price interaction included zero (LLCL = -0.44, ULCL = 0.03), confirming full mediation.

3.3 Discussion

Study 2 found no significant difference in choice deferral between mobile and PC terminals overall. However, comparing the two terminals across price levels revealed different effects: for low-price products, PC terminals produced stronger choice deferral than mobile terminals; for high-price products, mobile terminals produced stronger choice deferral than PC terminals. Price level significantly moderated the main effect, supporting H1a and H1b.

Additionally, Study 2 tested the mediation mechanism. Results show mobile terminals trigger experiential thinking, increasing choice deferral for high-price products, while PC terminals trigger rational thinking, increasing choice deferral for low-price products, supporting H2a and H2b.

4.1 Theoretical Contributions

Mobile internet development has expanded traditional single shopping modes, making mobile commerce critical for business success. While mobile terminals' convenience and touchability promote active choice, reduced deferral costs, information abundance, and limited display space make it difficult for consumers to seize opportunities. PC terminals facilitate product information display and stable networks for decision-making, creating inconsistent research conclusions. Online shopping also facilitates price comparison, making price an important factor. Leveraging transaction informatization, datafication, and automation, this research combined secondary sales data with psychological experiments to investigate how purchase terminal-product price compatibility affects choice deferral. Using online shopping as an entry point, Study 1 verified the interaction between terminal type and price level, while Study 2 used controlled experiments with dual-process theory to verify the internal mechanism. Theoretical contributions include:

1. **Enriching understanding of consumer shopping contexts:** Previous decision process research focused on fixed online/offline contexts (Dhar, 1996, 1997a, 1997b; Dhar & Nowlis, 1999; Mourali, 2018; Pejsachowicz & Toussaert, 2017). With mobile internet, more consumers use phones for anytime purchasing. This research extends from fixed to mobile contexts. While some views suggest mobile shopping makes consumers more emotional and facilitates decisions, others find mobile creates visual crowding and decision difficulty. By introducing product price as a moderator and examining both mobile and fixed contexts, this research resolves seemingly conflicting conclusions. Results show PC terminals trigger rational thinking, compatible with high-price rational thinking, facilitating decisions and reducing choice deferral. Thus, PC terminals better suit high-price decisions, while mobile terminals better suit low-price decisions.

This extends beyond single-context superiority views, proving each context has distinct value without absolute advantage.

2. **Expanding understanding of choice deferral factors:** Previous research focused on "what to decide," "how to decide," and "who decides" (individual traits/emotions), rarely considering "where to decide." Traditional contexts were relatively stable, focusing on internal factors like decision strategies and traits (Crockett et al., 2013; Pejsachowicz & Toussaert, 2017). As contexts diversify and mobilize, decision processes are increasingly affected by external contextual factors. Moreover, consumer decisions are complex processes influenced by multiple factors, not single determinants. This research verifies that purchase terminal must match price level to reduce choice deferral. Previous research based on traditional single shopping modes viewed consumer decisions as purely rational-cognitive processes (Li & Fu, 2006), but contemporary contexts (e.g., mobile) may prompt emotional decisions.
3. **Deepening understanding of dual-process theory:** While previous views suggest consumers defer choices to reduce psychological conflict when facing decision difficulties (Li & Fu, 2006; Pejsachowicz & Toussaert, 2017), few have explored this conflict' s internal mechanism. When facing multi-factor decisions, consumers activate different thinking modes. This research examines thinking style compatibility from both contextual and price priming perspectives, finding that compatible thinking modes facilitate decisions and reduce choice deferral more than conflicting modes. Thus, this research deepens understanding of choice deferral mechanisms and reinforces that the two systems operate simultaneously rather than independently or exclusively.

4.2 Practical Implications

Managerially, this research provides reference for scenario-based precision marketing. First, for new product sales, companies can identify consumer decision mindsets through price positioning and create matching marketing contexts to promote active choice. Second, when developing online sales channels, companies must consider price-device compatibility. As found, PC terminals facilitate high-price sales while mobile terminals facilitate low-price sales. Companies can develop matching price or promotion strategies based on terminal characteristics to reduce decision avoidance, improve decision fluency, and increase revenue.

4.3 Limitations and Future Directions

This research has limitations that future studies could address. First, we primarily analyzed price level and shopping terminal compatibility, but other product attributes could be examined. Second, could product brand positioning produce different or opposite results? Third, this study focused on fast-moving consumer goods commonly purchased online; higher-risk decisions or contexts

warrant investigation. Fourth, we only considered first-time purchases; repeat purchase effects could be explored more comprehensively in future research.

References

Anderson, C. J. (2003). The psychology of doing nothing: Forms of decision avoidance result from reason and emotion. *Psychological Bulletin*, 129, 139–167.

Baron, R. M., & Kenny, D. A. (1986). The moderator mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.

Beatty, S. E., & Smith, S. M. (1987). External search effort: An investigation across several product categories. *Journal of Consumer Research*, 14, 83–95.

Brasel, S. A., & Gips, J. (2014). Tablets, touchscreens, and touchpads: How varying touch interfaces trigger psychological ownership and endowment. *Journal of Consumer Psychology*, 24(2), 226–233.

Brengman, M., Geuens, M., Weijters, B., Smith, S.M., & Swinyard, R. (2003). Segmenting internet shoppers based on their web-usage-related lifestyle: A cross-cultural validation. *Journal of Business Research*, 58(1), 79–88.

Chang, Y. P., Xiao, W. F., Qin, W., & Yan, J. (2012). The influence mechanism of third-party product reviews(TPRs) on impulse buying intention within the internet environment: By product category and commentators rank for regulation variables. *Acta Psychologica Sinica*, 44(9), 1244–1264.

Chezy, O. R. (2004). Reexamining latitude of price acceptability and price thresholds: predicting basic consumer reaction to price. *Journal of Consumer Research*, 30(4), 612–621.

Cho, C. H, Kang, J., & Cheon, H. J. (2006). Online shopping hesitation. *Cyber Psychology and Behavior*, 9(3), 261–274.

Cooke, A. D., Meyvis T., & Schwartz, A. (2001). Avoiding future regret in purchase-timing decisions. *Journal of Consumer Research*, 27(4), 447–459.

Crockett, M. J., Apergis-Schoute, A. M., Herrmann, B., Lieberman, M. D., Müller, U., Robbins, T.W., & Clark, L. (2013). Serotonin modulates striatal responses to fairness and retaliation in humans. *Journal of Neuroscience*, 33(8), 3505–3513.

Cryder, C., Botti, S., & Simonyan, Y. (2016). The charity beauty premium: Satisfying Donors"Want"Versus "Should"desires. *Journal of Marketing Research*, 56, 605–618.

Dai, X., & Hsee, C. K. (2013). Wish versus worry: Ownership effects on motivated judgment. *Journal of Marketing Research*, 50, 207–215.

Dhar, R. (1996). The effect of decision strategy on the decision to defer choice. *Journal of Behavioral Decision Making*, 9(4), 265–281.

Dhar, R. (1997a). Consumer preference for a no-choice option. *Journal of Consumer Research*, 4(2), 215–231.

Dhar, R. (1997b). Context and task effects on choice deferral. *Marketing Letter*, 8(1), 119–130.

Dhar, R., & Nowlis, S. M. (1999). The effect of time pressure on consumer choice deferral. *Journal of Consumer Research*, 25(4), 369–384.

Dijksterhuis, A. (2004). Think different: the merits of unconscious thought in preference development and decision making. *Journal of Personality and Social Psychology*, 87, 586–598.

Dijksterhuis, A., Bos, M. W., & Nordgren, L. F. (2006). On making the right choice: the deliberation-without-attention effect. *Science*, 311, 1005–1007.

Dijksterhuis, A., & Olden, Z.V. (2006). On the benefits of thinking unconsciously: unconscious thought can increase post-choice satisfaction. *Journal of Experimental Social Psychology*, 42, 627–631.

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of price, brand, and store information on buyers' product evaluations. *Journal of Marketing Research*, 28(3), 307–319.

Elder, R. S., & Krishna A. (2012). The 'Visual depiction effect' in advertising: Facilitating embodied mental simulation through product orientation. *Journal of Consumer Research*, 38(6), 988–1003.

Epstein, S. (1994). Integration of the cognitive and psychodynamic unconsciousness. *American Psychologist*, 49(8), 709–724.

Evans, J. S. B. T. (2002). Logical and human reasoning: An assessment of the deductive paradigm. *Psychological Bulletin*, 128, 978–996.

Evans, J. S. B. T. (2003). In two minds: dual-process account of reasoning. *Trends in Cognitive Sciences*, 7, 454–459.

Ferreira, M. B., Garcia-Marques, L., & Sherman, S. J. (2006). Automatic and controlled components of judgment and decision making. *Journal of Personality and Social Psychology*, 91(5), 797–813.

Fiske, S. T., Lin, M., & Neuberg, S. L. (1999). The continuum model: Ten years later. In *Dual-process theories in social psychology*. New York: Guilford Press.

Frost, R.O., & Shows, D. L. (1993). The nature and measurement of compulsive indecisiveness. *Behaviour Research and Therapy*, 31(7), 683–692.

Greenleaf, E.A., & Lehmann, D. R. (1995). Reasons for substantial delay in consumer decision making. *Journal of Consumer Research*, 22, 186–199.

Grewal, D., Monroe, K. B., & Krishnan, R. (1998). The effects of price-comparison advertising on buyers' perceptions of acquisition value, transaction

value, and behavioral intentions. *Journal of Marketing*, 62(2), 46–59.

Hayes, A. F. (2013). *Introduction to mediation, moderation and conditional process analysis: A regression-based approach*. New York: Guilford Press.

Hayes, A. F. (2015). An index and test of linear moderated mediation. *Multivariate Behavior Research*, 50(1), 1–22.

Hansen, B. E. (2000). Sample Splitting and Threshold Estimation. *Econometrica*, 68, 575–603.

Hedgcock, W. M., Rao, R. S., & Chen, H. A. (2016). Choosing to choose: The effects of decoys and prior choice on deferral. *Management Science*, 62(10), 2952–2976.

Hsee, C., & Rottenstreich, Y. (2004). Music, pandas, and muggers: On the affective psychology of value. *Journal of Experimental Psychology: General*, 133(1), 23–30.

Huang, M. X., Yao, S. Y., & Liu, M. H. (2018). Self-enhancing or self-deprecating: How can celebrity endorsement enhance the marketing effectiveness of advertisements in social media. *Acta Psychologica Sinica*, 50(8), 907–919.

Jing, M., Zhou Y., & Wang, F. H. (2007). Empirical study on online shopping perceived risk. *Journal of Systems & Management*, 16(2), 164–169.

Kahneman, D. (2011). *Thinking, fast and slow*. London, UK: Penguin Books Ltd.

Kahneman, D., & Frederick, S. (2002). Representativeness revisited: Attribute substitution in intuitive judgment. In *Heuristics and biases: The psychology of intuitive judgment*. New York: Cambridge University Press.

Kotler, P., & Keller, K. L. (2009). *Marketing management* (13th ed.). Upper Saddle River, NJ: Prentice Hall.

Lichters, M., Brunnlieb, C., Nave, G., Sarstedt, M., & Vogt, B. (2016). The influence of serotonin deficiency on choice deferral and the compromise effect. *Journal of Marketing Research*, 53(2), 183–198.

Li, X. M., & Fu, X. L. (2006). The choice deferral in decision making. *Psychological Science*, 29(1), 127–129.

Li, X., Ye, Q., & Yang, G. (2017). The lack of dominance and choice deferral: choosing to defer to cope with the feeling of being out of control. *Journal of Social Psychology*, 157(6), 754–765.

Lichtenstein, D. R., Ridgway, N. M. & Netemeyer, R. G. (1993). Price perceptions and consumer shopping behavior: A field study. *Journal of Marketing Research*, 15, 234–245.

Liu, H. Y., Li, A. M., Wang, H. Z. & Wei, H. Y. (2012). The effect of promotion types on consumers' purchase decisions—From the perspective of construal level theory. *Acta Psychologica Sinica*, 44(8), 1100–1113.

Madrigal, A. C. (2014). Goldman: There will be as much mobile commerce in 2018 as ecommerce in 2013. Retrieved March 3, 2014, from http://www.theatlantic.com/technology/archive/2014/03/goldman-there-will-be-as-much-mobile-commerce-in-2018-as-bre-commerce-in-2013/284270/

Mallapragada, G., Chandukala, S. R., & Liu, Q. (2016). Exploring the effects of "what" (product) and "where" (website) characteristics on online shopping behavior. *Journal of Marketing*, 80(2), 21–38.

Mathwick, C., Malhotra, N., & Rigdon, E. (2001). Experiential value: conceptualization, measurement and application in the catalog and internet shopping environment. *Journal of Retailing*, 77(1), 39–56.

Metcalfe, J., & Mischel, W. (1999). Hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review*, 106(1), 3–19.

Mochon, D. (2013). Single-option aversion. *Journal of Consumer Research*, 40(3), 555–566.

Mosteller, J., Donthu, N., & Eroglu, S. (2014). The fluent online shopping experience. *Journal of Business Research*, 67(11), 2486–2493.

Mourali, M., Yang, Z., Pons, F., & Hassay, D. (2018). Consumer power and choice deferral: the role of anticipated regret. *International Journal of Research in Marketing*, 35(1), 81–99.

Novak, T. P., & Hoffman, D. L. (2009). The fit of thinking style and situation: New measures of situation-specific experiential and rational cognition. *Journal of Consumer Research*, 36(1), 56–72.

Oviatt, S., Cohen, A., Miller, A., Hodge, K., & Mann, A. (2012). The impact of interface affordance on human ideation, problem solving and inferential reasoning. *ACM Transactions on Computer-Human Interaction*, 19(3), 1–22.

Peck, J., & Johnson, J. W. (2011). Autotelic need for touch, haptics, and persuasion: the role of involvement. *Psychology & Marketing*, 28(3), 222–246.

Pejsachowicz, L., & Toussaert, S. (2017). Choice deferral, indecisiveness and preference for flexibility. *Journal of Economic Theory*, 170, 417–425.

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods and prescriptions. *Multivariate Behavioral Research*, 42(1), 185–227.

Rassin, E., & Muris, P. (2005). Indecisiveness and the interpretation of ambiguous situations. *Personality and Individual Differences*, 39(7), 1287–1297.

Roselius, T. (1971). Consumer rankings of risk reduction methods. *Journal of Marketing*, 35, 56–61.

Shafir, E., Simonson, I., & Tversky, A. (1993). Reason-based choice. *Cognition*, 49(1), 11–36.

Shen, H., Zhang, M., & Krishna, A. (2016). Computer interfaces and the "direct-touch" effect: can iPads increase the choice of hedonic food? *Journal of Marketing Research*, 53(5), 745–758.

Sloman, S. A. (1996). The empirical case for two systems of reasoning. *Psychological Bulletin*, 119, 3–22.

Sloman, S. A. (2002). Two systems of reasoning. In *Heuristics and biases: The psychology of intuitive judgment*. Cambridge: Cambridge University Press.

Sohn, S., Seegebarth, B., & Moritz, M. (2017). The impact of perceived visual complexity of mobile online shops on user' s satisfaction. *Psychology & Marketing*, 34(2), 195–214.

Stanovich, K. E., & West, R. F. (2000). Individual differences in reasoning: Implications for the rationality debate. *Behavioral and Brain Sciences*, 23, 645–726.

Sun, Y., Li, S., Yin, X. L. (2007). Two systems in decision-making and reasoning: Heuristic system and analytic system. *Advances in Psychological Science*, 15(5), 721–726.

Wang, J. H., Malthouse, E. C., & Krishnamurthi, L. (2015). On the go: how mobile shopping affects customer purchase behavior. *Journal of Retailing*, 91(2), 217–234.

Zhao, M., Hoeffler, S., & Zauberman, G. (2011). Mental simulation and product evaluation: the affective and cognitive dimensions of process versus outcome simulation. *Journal of Marketing Research*, 47, 827–839.

Zhao, X. S., Lynch, J. G., & Chen, Q. M. (2010). Reconsidering baron and kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37(2), 197–206.

Zhu, H. W., Zhang, Y. Y., & Gong, X. (2017). Does company' s humor resolve consumer complaining: The match of humor types and relationship norms. *Acta Psychologica Sinica*, 49(4), 526–538.

Appendices

Experimental Materials

Experiment 1: PC Terminal with Low Price

[Questionnaire materials for PC-low price condition]

Experiment 2: PC Terminal with High Price

[Questionnaire materials for PC-high price condition]

Experiment 3: Mobile Terminal with Low Price

[Questionnaire materials for mobile-low price condition]

Experiment 4: Mobile Terminal with High Price

[Questionnaire materials for mobile-high price condition]

Study 1 Threshold Regression Parameter Tables

Appendix Table 1: Residual sum of squares for different threshold parameter values in threshold regression

Appendix Table 2: Threshold regression model parameter estimation R code

Note: Figure translations are in progress. See original paper for figures.