

Is returning a product worth my time? The impact of time cues on consumer product returns

Shinhyoung Lee¹  | Youjae Yi² 

¹Business School, Sookmyung Women's University, Seoul, South Korea

²Business School, Seoul National University, Seoul, South Korea

Correspondence

Shinhyoung Lee, Business School, Sookmyung Women's University, 100 Cheongpa-ro 47-gil, Yongsan-gu, Seoul 04310, South Korea.
Email: sh.lee@sm.ac.kr

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Abstract

Considering that returning a purchased product involves time costs to consumers, we posit that making a time cue salient will influence their likelihood of returning a product. Four studies reveal that consumers primed with time cues are less willing to return a product. Specifically, presenting time cues can reduce product returns by amplifying consumers' perception of time pressure and alleviating their psychological discomfort. Furthermore, private self-awareness is found to moderate the time-cue effect through perceived discomfort. The results are replicated even when time pressure and psychological discomfort are directly manipulated, supporting the causal account. This study contributes to the literature on consumer product returns by proposing the time-cue effect and its psychological mechanisms and helps retailers manage product returns using various time cues.

KEYWORDS

consumer product returns, private self-awareness, psychological discomfort, time cue, time pressure

1 | INTRODUCTION

"Remember that time is money" – Benjamin Franklin (1748/1961)

As Benjamin Franklin remarked, time can be considered a scarce resource. In a similar vein, recent research suggests that spending money to save time can reduce the perception of "time famine" in modern life (Whillans et al., 2017). By investing money in time-saving purchases, people can enjoy a greater sense of happiness and satisfaction with their lives by liberating themselves from time pressure. As such, the importance of conceptualizing time as a finite, precious resource cannot be overstated and investigating how people make decisions about how to spend their time has become a significant issue (DeVoe & Pfeffer, 2007). Focusing on the value of time, we investigated the effect of time perception on consumer product returns. Specifically, we attempted to identify the factors influencing people's tendency to ask themselves the following question: "Is returning this purchase worth my time?"

Why should researchers and retailers consider time perception a determinant of consumers' likelihood of returning a product? Given the abundance of material goods, modern consumers often purchase products on a whim and decide whether to keep them later. Moreover, generous product-return policies encourage customers to return purchases rather than committing to them, which has drastically increased product-return rates and severely decreased firms' revenue in recent years (Robertson et al., 2020)¹. In-store and online product returns cost US retailers \$428 billion in lost sales in 2020 alone, accounting for about 10.6% of total sales (Appriss Retail, 2020). Given the severity of the growing trend of product

¹While some studies have focused on the negative consequences of generous return policies (Robertson et al., 2020), there exists another perspective that product-return leniency could yield more profits in the long term by providing customers with more satisfactory product-return experiences (Petersen & Kumar, 2010). Therefore, it is important to have a balanced view that considers both the costs and benefits of product returns. However, since the current research aims to find a situational factor that makes consumers hesitant to return the purchase, we limit our research context by viewing product returns as a phenomenon that needs to be improved.

returns, we aimed to investigate how to reduce them by changing customers' perceptions.

Grounded in the work of Soman (2001), we postulate that consumers tend to forget that they must devote their temporal resources to returning a product, a process that requires activities like requesting and printing a return shipping label, returning to the store where the item was purchased, and searching for alternative items as a replacement for the original product. Although time and money have been compared in various consumer domains, people are unfamiliar with the concept of accounting for their time as if it were money. Time cannot be inventoried, replaced, or measured as easily as money (Soman, 2001). Hence, consumers might overlook the temporal costs involved in the product-return process. In the present research, we propose that prompting consumers to consider the value of time would reduce product returns. More specifically, if consumers who feel guilt or remorse regarding their purchases are cued to notice the value of time, which tends to go unrecognized, they will focus more on temporal costs than refunded money. Overall, our research questions are as follows: (1) Does making a time cue salient reduce consumers' likelihood of returning a product? (2) What are the psychological mechanisms underlying the time-cue effect? (3) When is the time-cue effect amplified or attenuated?

This study will show that offering consumers time cues can reduce their likelihood of returning a product by amplifying time pressure and alleviating psychological discomfort and that this perceptual intervention works better among those with high levels of private self-awareness. From a theoretical perspective, our research will contribute to understanding consumer psychology related to product returns beyond the existing literature that has focused on the return hassle cost from a quantitative and policy-making point of view (e.g., Abdulla et al., 2019; Janakiraman et al., 2016). Moreover, the findings can expand the literature on the mental accounting of time costs, addressing more practical concerns like product returns (e.g., DeVoe & House, 2012; DeVoe & Pfeffer, 2007; Soman, 2001). From a managerial perspective, retailers can utilize some of the tactics in our research to guide consumers with various time cues and thereby lower product returns without increasing marketing costs. In addition, practitioners can gain insights into what individual characteristics should be considered when they design strategies for reducing product returns.

2 | THEORETICAL BACKGROUND

2.1 | Consumer product returns

With the increasing trend of consumer product returns, research on this relatively neglected issue is now more encouraged than ever (Robertson et al., 2020). In terms of research topic, some studies have suggested that specific marketing environments, such as online reviews (Minnema et al., 2016), website information (Li & Choudhury, 2021), and sales promotions (Lee & Yi, 2017, 2019;

Petersen & Kumar, 2009), can be one of the major determinants of consumer product returns. However, the mainstream of literature has focused on the impact of return policy design on consumers' purchase and return behaviors (see, Abdulla et al., 2019; Janakiraman et al., 2016, for reviews). It has been widely known that a lenient return policy can achieve a competitive advantage and circumvent mere price competition: that is, consumers' purchase intention can be increased by enhancing perceived product quality (Wood, 2001), fairness of the return policy (Pei et al., 2014), and trust in the retailer (Oghazi et al., 2018).

Janakiraman et al. (2016) classified product-return policies along five dimensions (i.e., time, money, effort, scope, and exchange) by employing a meta-analysis of 21 papers that examined the effect of lenient return policies on purchases and returns. According to this review, most researchers in the field have considered time in relation to deadlines for making returns and found that lenient return policies (i.e., those with more distant deadlines) increase psychological ownership of products and thus delay or reduce consumer product returns (Janakiraman & Ordóñez, 2012; Wood, 2001). Also, in the theories regarding the leniency of return policies, an effort is defined as any kind of restriction or hassle involved in the process, such as retailers requiring receipts, tags, or filled-out return forms (Janakiraman & Ordóñez, 2012). For instance, Janakiraman and Ordóñez (2012) revealed that return deadlines (time) and return hassles (effort) both independently and interactively impact consumers' decisions regarding product returns. In a comprehensive review of the literature on return policy design, Abdulla et al. (2019) also reported that the time-type cost (i.e., transaction cost and hassle cost) and its related policies have been examined as drivers of consumer product returns in many studies. For example, some researchers have included time and effort under the consumers' hassle cost of a return and used "hassle cost" as one of the parameters to predict the optimal model of product return policy, supply chain performance, or pricing strategy, especially in terms of operational management (e.g., Shulman et al., 2009; Su, 2009).

Considering the literature above, most of the extant studies have been substantially grounded in analytical modeling for policymaking, while relatively few studies have addressed how to make consumers hesitate to return the purchased goods with a consumer-oriented approach (see, Lee & Yi, 2017, 2019, for exceptions). The current research regards *time* as an umbrella term that symbolizes all kinds of hassles during a product-return process based on the literature that used the terms time and effort interchangeably in the return process (see, Abdulla et al., 2019, for reviews). On the basis of our definition of time, we further aim to find a context in which consumers can focus more on the value of time, recognizing a trade-off between time and money in the product-return process. To the best of our knowledge, the present research is a rare attempt to directly manipulate consumers' perception of their temporal resources, other than the return policy, and to investigate the effect of time-cue salience on product returns in terms of consumer psychology and behavior.

2.2 | Time cue and consumer product returns

The oft-quoted maxim that “time is money” was crystallized in the words of Franklin (1748/1961). This way of thinking has been accepted as a truism in Western culture, and it reflects the idea that time is an economic good. Nevertheless, a series of studies has revealed that people do not tend to regard time as money unless they are urged to do so (Okada & Hoch, 2004; Soman, 2001). Inspired by these works, we propose the term *time perception* to refer to the idea that people recognize and value their time as a tangible resource. Time perception can be manipulated by eliciting *time cues* (Hornik, 1981), which we define as external stimuli that make one's temporal resources salient. Making a time cue salient (i.e., the time-cue effect) deserves special attention in the domain of product returns because people tend to overlook the value of time, which is not as conspicuous as that of money (Soman, 2001).

Numerous researchers regard time and money as two fundamental resources that influence human life and report that they have different impacts on various decisions by consumers (Leclerc et al., 1995; Okada & Hoch, 2004; Soman, 2001). Specifically, people tend to do more risk-seeking in the money-loss context than in the time-loss context because savings and losses of time cannot be as easily estimated or transferred as those of money (Leclerc et al., 1995). On the other hand, people take more risks when investing time than money because the ambiguous nature of time makes people more creative in their motivated reasoning (Okada & Hoch, 2004). According to Soman (2001), people have more difficulty mentally accounting for time than for money because time has three distinctive features: it is nonfungible (irreplaceable), not as easily aggregated as money, and not accounted for like money.

A stream of research has been aimed at overcoming this asymmetric perception between time and money. Representatively, Soman (2001) specified three experimental manipulations to facilitate the mental accounting of time costs as follows: (1) the existence of a wage rate to equate time to money, (2) the promotion of education about the economic approach to time, and (3) an emphasis on the opportunity cost of time. Through these interventions, people begin to perceive time as having value and as capable of being bought and spent as well as saved and wasted. Taking this reasoning a step further, many researchers have examined the effect of equating time to money on various consumer-related decisions. For instance, placing a monetary value on time can encourage consumers to view their time and money as interchangeable resources (DeVoe & Pfeffer, 2007) and thereby increase concerns about using time profitably (DeVoe & House, 2012). That is, making a time cue salient prompts people to think about the value of time, which might otherwise be ambiguous (Okada & Hoch, 2004; Soman, 2001). Therefore, we predict that making a time cue salient (e.g., activating an hourly wage rate) can dissuade consumers from spending their time returning purchases. In sum, we propose the following:

H1: *Making a time cue salient reduces consumer product returns.*

2.3 | Time value and time pressure

Historically, psychologists have shed light on the heuristic association between value and scarcity. For example, Dai et al. (2008) argued that people judge the scarcity of objects based on their subjective value, whereas they judge the value of objects based on their perception of scarcity. King et al. (2009) suggested that “attaching high value to an object produces biased perceptions of its scarcity” (p. 1459) by investigating the idea that the perception of death (the scarcity of life) becomes more salient when the value of one's life in monetary and psychological terms is emphasized. DeVoe and Pfeffer (2011) showed that the value-scarcity heuristic applies to time as well, which is consistent with the premise that time is a finite resource. They further revealed that manipulating the value of time causes greater feelings of time pressure and consequently leads people to exhibit less patience. That is, time famine is largely based on a perceptual problem, which is consistent with the logic outlined above that indicates that increased time pressure results from individuals having an intense desire to find the best use of their available time. Therefore, we can expect that offering time cues will make people feel more pressure to avoid wasting their time, thereby lowering product returns. More formally, we hypothesize the following:

H2: *Perceived time pressure mediates the time-cue effect on consumer product returns.*

2.4 | Time value and psychological discomfort

Before discussing the time-cue effect on psychological discomfort, it is worthwhile looking at the dissonance theory (e.g., Cooper & Fazio, 1984; Elliot & Devine, 1994; Festinger, 1957; Sweeney et al., 2000), which is considered one of the motivators influencing consumer product returns. Festinger (1957) defined cognitive dissonance as “a psychologically uncomfortable state following an act of choosing among a set of alternatives, each of which has some desirable attributes” (cited in Lee, 2015, p. 51). The cons of the chosen alternative and the pros of the forgone alternative can be prominent after making a choice decision (Brehm, 1956), and such dissonant states induce psychological tension that motivates people to seek and implement a strategy to alleviate it (Elliot & Devine, 1994). Cooper and Fazio (1984) suggested a comprehensive view of the dissonance process and proposed the concept of “dissonance motivation,” which was envisioned as the motivation to reduce uncomfortable feelings by making changes in one's attitude to be consistent with one's behaviors (Gawronski & Strack, 2004).

Consumers may experience cognitive dissonance after purchase when they feel that they may have made the wrong choice for whatever reasons (e.g., lack of knowledge about the chosen option and discovery of superiority of the forgone alternatives) (Lee, 2015; Sweeney et al., 2000). Using the dissonance theory as a backdrop, researchers named this phenomenon postpurchase dissonance which

refers to feelings of discomfort, doubts, uncertainty, and anxiety that come after a purchase decision (Lee, 2015; Powers & Jack, 2013). Postpurchase dissonance in the consumption context functions like feelings of regret or remorse, and consumers who feel remorse about a purchase strive to reduce this mental discomfort by revising their own beliefs or behaviors. As a more specific example, consumers who experience postpurchase dissonance tend to return their purchase, and this behavioral change can be one of the ways of coping with psychological discomfort (Lee, 2015; Powers & Jack, 2013). However, presenting other values that can resolve psychological discomfort has the potential to change consumers' attitudes rather than their behaviors (i.e., product returns). Inspired by previous work that considered the time-type cost as one of the drivers of consumer product returns (Abdulla et al., 2019), we postulate that consumers primed with time cues would be less willing to revise their purchasing decisions. That is to say, offering time cues can prompt consumers to recognize the value of time and conceive of temporal resources as actual resources that must be spent during the return process. In other words, using a time cue can reduce any lingering discomfort associated with purchases by activating another dimension of value that can justify the dissonant state. Therefore, consumers primed with time cues can realize that product returns are not the one and only coping strategy and can modify their attitude (i.e., uncomfortable feelings about the purchase) to use their time more efficiently. In sum, the following hypothesis is advanced:

H3: *Perceived discomfort mediates the time-cue effect on consumer product returns.*

2.5 | Psychological discomfort and private self-awareness

Higgins (1987) linked psychological discomfort to the experience of “a self-discrepancy—a deficit between how one wants to view oneself (ideal self) and how one currently views oneself (actual self)” (cited in Kim & Gal, 2014, p. 527). He explained that such a self-discrepancy produces a self-threat that induces psychological discomfort that people tend to want to resolve. In this sense, we aim to identify a moderator that can strengthen or weaken the magnitude of psychological discomfort and suggest that private self-awareness would affect the relationship between time cues and product returns via psychological discomfort.

Private self-awareness is defined as a general awareness of oneself based on personal attitudes and beliefs (e.g., Fenigstein et al., 1975). Privately self-aware people have their own standards, attitudes, and preferences, as they are acutely conscious of their personal thoughts and feelings (Dijksterhuis & Van Knippenberg, 2000; Gibbons, 1990). Therefore, people with high levels of private self-awareness tend to perceive a discrepancy between their standards and current behaviors, and they are thus motivated to mitigate it (Gibbons, 1990). Goukens et al. (2009) suggested that privately self-aware consumers tend to develop solid, distinctive

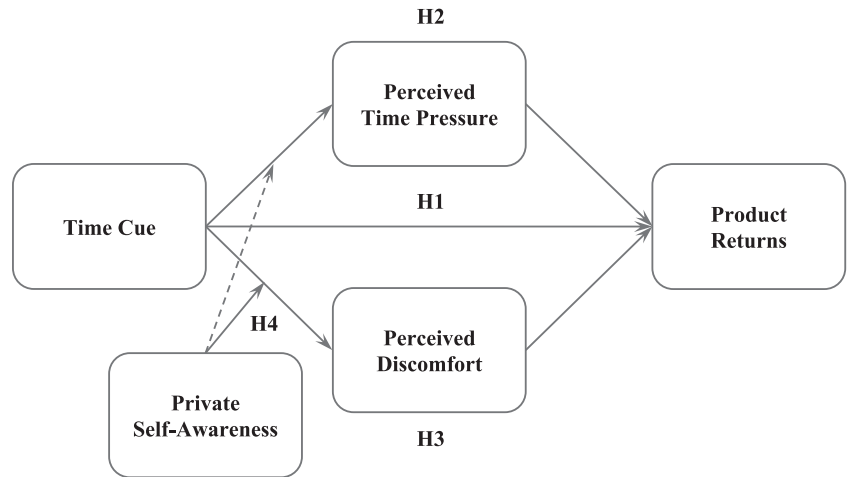
preferences in products because they are clearly aware of their personal beliefs and attitudes. Thus, if privately self-aware consumers feel doubt or remorse about their purchases, they may feel a threat to their desired identity beyond merely experiencing the disconfirmation of misguided expectations (Oliver, 1980). In other words, privately self-focused consumers tend to feel more psychological discomfort when retaining products to which they are indifferent or that they perceive as unsatisfactory; thus, they tend to attempt to return such purchases because they need to recover from the threat to their sense of self and ameliorate the uncomfortable psychological state associated with it (Gibbons, 1990; Goukens et al., 2009). If privately self-aware consumers are situationally primed with time cues, they can be persuaded by other domains of ideal value (i.e., spending one's time in a worthy manner) as a mechanism to relieve their psychological discomfort with purchases, leading to reduced product returns. On the contrary, consumers with low levels of private self-awareness do not usually have strong standards or preferences (Dijksterhuis & Van Knippenberg, 2000; Gibbons, 1990). Therefore, possessing products to which they are indifferent is not a big deal for them, inducing a low level of discomfort. That is, consumers with low levels of private self-awareness would not indicate any difference in their feelings of discomfort regardless of the priming conditions, and they would show a consistently low level of discomfort. Consequently, the time-cue effect would be amplified among individuals with high levels of private self-awareness. Therefore, we hypothesize the following:

H4: *Consumers' level of private self-awareness moderates the time-cue effect on perceived discomfort, thus (a) consumers with high levels of private self-awareness perceive less discomfort in keeping a dissonant purchase when a time cue is salient (vs. non-salient) and (b) consumers with low levels of private self-awareness show no difference in their levels of perceived discomfort regardless of time-cue salience.*

3 | OVERVIEW OF STUDIES

The present research is composed of four studies that examine the time-cue effect on consumer product returns. Study 1 focuses on the basic prediction that making a time cue salient would reduce product returns by using eye-tracking technology (Study 1A) and field data (Study 1B). Study 2 investigates the underlying mechanisms of the time-cue effect, and we suggest that the time-cue effect on product returns is mediated by both perceived time pressure involved in returning the products and perceived discomfort of retaining them. Study 3 examines the moderating effect of private self-awareness on the relationship between time-cue salience and product returns via perceived discomfort. Study 4 confirms the causal mechanisms underlying the link between time-cue salience and product returns through direct manipulation of perceived time pressure (Study 4A) and perceived discomfort (Study 4B). Figure 1 displays the conceptual framework and the hypothesized relationships.

FIGURE 1 Conceptual model for the time-cue effect on consumer product returns



4 | STUDY 1: TIME-CUE EFFECT ON CONSUMER PRODUCT RETURNS

Study 1 offers an initial test of the time-cue effect on consumer product returns (H1). In Study 1A, the preliminary investigation of time-cue effect can benefit from the eye-tracking methodology. We expected that this technique can provide a causal relationship between subtle time cues and product returns by measuring individuals' instinctive and immediate behavioral responses to the target stimulus unobtrusively (Meißner et al., 2019; Mele & Federici, 2012). In Study 1B, we aimed to investigate the robustness of the time-cue effect in the marketplace by analyzing consumers' actual return behavior in collaboration with an online retailer.

4.1 | Study 1A: Subtle time cues reduce product returns

4.1.1 | Method

Eighty respondents from South Korea (44 females, $M_{\text{age}} = 32.33$, age range: 20–47) were recruited and rewarded with a gift card worth 5000 KRW. We recruited them from university and business office settings through the Snowball technique. Study 1A included a single-factor (time-cue salience: time priming vs. neutral priming vs. no priming) between-subjects design. We included a neutral-priming condition as a more sophisticated control group to rule out the possibility that other types of visual stimuli could produce a difference in attention levels that could affect the outcome. Participants were randomly assigned to one of the three conditions.

We used the SMI iView X-RED eye-tracker to record and analyze the participants' eye movements (Mele & Federici, 2012), and we began our study with a short calibration exercise. Then, the participants were provided with a hypothetical scenario in which they had bought a pair of shoes online. They were asked to imagine that a few days later, they received the shoes and were satisfied in terms of the size and quality. However, because there were slight

discrepancies between what they expected and what they received, they did not wear them right away but instead decided to check the retailer's product-return policy (Lee & Yi, 2017, 2019). After reading about this scenario, the participants viewed one of three return-policy guidelines with subtle variations in the upper-right corner of the full-screen visual stimulus: a digital clock (time priming), a weather icon (neutral priming), and a baseline (no priming). The experimental conditions varied only in terms of the visual cues mentioned above and were identical in all other respects including the return process and policy. The participants looked at this page for 15 s, and their eye movements were recorded using the eye-tracking technology. Then, the participants rated their intentions to return the purchase based on three items (Lee & Yi, 2017; $\alpha = 0.99$; 1 = *unlikely/improbable/keep*, 9 = *likely/probable/return*) and consequently decided whether to return the purchase based on a binary response. Lastly, the participants were asked to provide their demographic information.

4.1.2 | Results

We implemented a series of heat maps for the confirmation of participants' patterns of gazing at visual stimuli, as shown in Figure 2. Heat maps are a visual representation of the average fixation duration of individuals' eye movements and indicate their level of attention to the individual components of a stimulus using a color-based system (Daugherty & Hoffman, 2014). The areas shaded in red received the most attention, followed by the areas in yellow and green. The graphic results shown in the heat maps suggested the successful manipulation of cue salience. The two treatment conditions resulted in a lot of attention being directed at the areas of interest (AOI; i.e., the upper-right corner of the stimulus), as we intended; that is, the participants in the time-priming condition kept their eyes on the digital clock and those in the neutral-priming condition paid more attention to the weather icon. In contrast, the participants in the no-priming condition, in which no information was provided in the same corner of the stimulus, did not focus on that area. Therefore, the heat map visualization provided evidence that the subtle visual cue induced

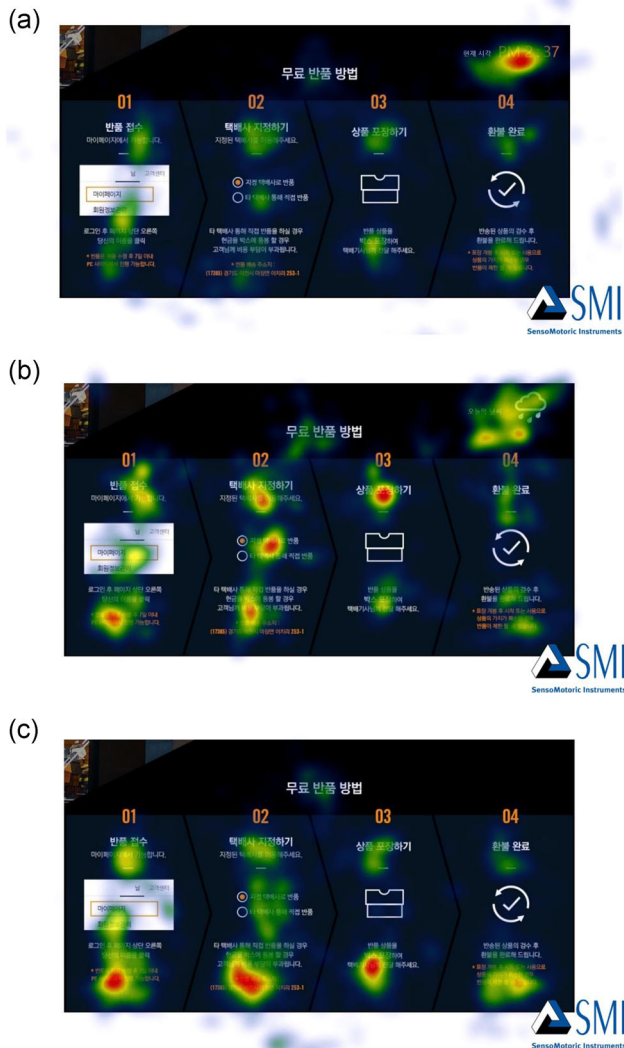


FIGURE 2 Visual attention to a time cue: Heat maps from eye-tracking data (Study 1A). *Note 1:* The upper-right part of each map is the area of interest primed. (a) time cue, (b) weather cue, or (c) none, respectively. The time cue represented the current time and the weather cue showed today's weather. *Note 2:* Partial translation from Korean to English. [Title] Process for free return; [01] Request for return; [02] Designate a courier; [03] Pack your returned parcel; [04] Refund completed

consumer visual attention that could serve as a proxy for whether the time-cue salience was successfully manipulated.

A one-way analysis of variance (ANOVA) examined the link between time-cue salience and product-return intentions. As expected, the participants primed by exposure to a digital clock indicated a significantly lower level of product-return intentions ($M_{\text{time}} = 4.14$ vs. $M_{\text{neutral}} = 5.73$ vs. $M_{\text{no-priming}} = 5.57$; $F(2, 77) = 3.03$, $p = 0.054$). A planned contrast showed that the participants primed with a time cue showed lower product-return intentions than those primed with a neutral stimulus ($t(77) = -2.15$, $p = 0.035$) and those with no priming ($t(77) = -1.91$, $p = 0.060$). There was no significant difference in product-return intentions between the neutral and

no-priming groups ($t(77) = 0.19$, $p > 0.8$). Therefore, we pooled the data from those two groups and explored the time-cue effect on product-return intentions through comparison with the total control group. A one-way ANOVA confirmed that making a time cue salient with visual stimuli had a significant effect on consumers' intentions to return the product ($M_{\text{time}} = 4.14$ vs. $M_{\text{pooled_control}} = 5.65$; $F(1, 78) = 6.09$, $p = 0.016$). Furthermore, a χ^2 analysis revealed that the participants primed with a time cue were less likely to return their purchases (Time = 32%, Neutral = 64%, No priming = 62%; $\chi^2(2, 80) = 7.35$, $p = 0.025$). A pairwise comparison indicated that the participants primed with a time cue were less likely to return the purchase than those with neutral priming ($\chi^2(1, 59) = 5.45$, $p = 0.020$) and those with no priming ($\chi^2(1, 58) = 4.75$, $p = 0.029$). As there was no significant difference between the neutral and no-priming groups in product-return intentions ($\chi^2(1, 43) = 0.01$, $p > 0.9$), we pooled the data, as in the ANOVA. All the results indicated that the time cue primed with the digital clock had a significant effect on product-return decisions (Time = 32%, Pooled control = 63%; $\chi^2(1, 80) = 7.34$, $p = 0.007$), showing that no other cue such as weather had any influence on consumers' product-return intentions.

4.2 | Study 1B: Field research on actual return behavior

4.2.1 | Method

We performed a field experiment in collaboration with an online retailer in Korea that creates and/or distributes handmade baby items (e.g., clothes and soft toy) and lifestyle accessories (e.g., kitchen fabric). Study 1B involved a single-factor (time-cue salience: time priming vs. no priming) between-groups design and thereby aimed to compare sales data at two periods: before and after the time-cue intervention. Specifically, in the time-priming condition, we collected sales data for four weeks after inserting both a clock icon and a phrase highlighting the value of time to the return policy guidelines provided on the retailer's website. The specific sentences are as follows: "[Retailer's name] value your time. We promise to do our best not to cause any inconvenience due to returns for our customers who have purchased and waited for our products." In the no-priming condition, we obtained sales data for the four weeks before the time-cue intervention and used them as a control. The two experimental conditions varied only in the time cues but were identical in all other aspects including the return process and policy. In addition, there was no difference in the presence of promotion between the two conditions, because price-discount coupons were equally applied throughout the entire experimental period.

4.2.2 | Results

We compared the difference in the ratio of product returns to sales at the periods before and after the time-cue intervention, analyzing two

indicators: (1) the number of returns to sales and (2) the amount of returns to sales. First, a one-way ANOVA on the number of returns to sales showed that purchases made in the period that provided time cues resulted in lower product return rates ($M_{\text{time}} = 0.09$ vs. $M_{\text{no_priming}} = 0.15$; $F(1, 54) = 6.16$, $p = 0.016$). Next, a one-way ANOVA on the amount of returns to sales revenue revealed that purchases made in the time-priming condition resulted in lower return amounts ($M_{\text{time}} = 0.10$ vs. $M_{\text{no_priming}} = 0.16$; $F(1, 54) = 3.73$, $p = 0.059$). Additional ANOVAs indicated no significant differences between the two groups regarding the number of sales ($p > 0.6$), the amount of sales revenue ($p > 0.4$), the amount of coupon price ($p > 0.3$), or the amount of shipping cost ($p > 0.6$). The key results remained significant after controlling for coupon price and shipping cost.

4.3 | Discussion of Studies 1A and 1B

Taken together, Study 1 verified that making a time cue salient reduced consumers' likelihood of returning a product, supporting H1. Through the eye-tracking methodology, Study 1A confirmed the proposition that the time cue with subtle visual priming would affect consumer product returns. Furthermore, Study 1B established the robustness of the time-cue effect and achieved external validity by conducting a field experiment with a real e-tailer.

5 | STUDY 2: DUAL MEDIATION OF TIME PRESSURE AND DISCOMFORT

Study 2 was conducted to determine the mechanisms behind the time-cue effect on consumer product returns while replicating the findings of Study 1. We investigated whether perceived time pressure and perceived discomfort mediated the time-cue effect on product returns, applying a different experimental design and method (H2 and H3). Specifically, we constructed a time cue by prompting participants to consider the value of time in a purely cognitive sense.

5.1 | Method

5.1.1 | Participants and design

A total of 234 respondents in the United States were recruited via Amazon Mechanical Turk (MTurk). The final sample consisted of 218 participants (137 females, $M_{\text{age}} = 37.27$, age range: 19–73) after 16 respondents failed the attention check (Oppenheimer et al., 2009). Study 2 employed a single-factor (time-cue salience: time priming vs. neutral priming vs. no priming) between-subjects design. We manipulated the value of health for task-neutral priming because health is one of the fundamental rights of every human being (noted by the constitution of the World Health Organization) and thus can be viewed as important values like time or money. Participants were randomly assigned to one of the three conditions.

5.1.2 | Procedure and measures

First of all, the participants were primed with specific values before the focal task. The participants in the time-priming condition were asked to write an essay on the value of time that explained how time is a resource that one should spend carefully (Saini & Monga, 2008). Those in the health-priming condition were asked to write an essay on the value of health. The participants in those priming conditions were asked to compose the essay without worrying about spelling or grammar. They were also instructed to spend at least 5 min on this priming task before progressing to the return-decision task, which was presented as an unrelated study. Meanwhile, those in the no-priming (baseline) condition did not undergo this priming task. After completing the priming task, the participants read about a hypothetical scenario in which they were supposed to imagine buying a new jacket. Specifically, the following information was presented: they visited a shopping mall located an hour away from their residence by car and purchased a jacket, which seemed adequate for the price of \$59.00. When they came back home, however, they contemplated returning it not because of defective quality but because of buyer's remorse. They found that they have already had some jackets to wear this coming season and thus felt a little regret spending their money on additional items. All scenarios were controlled by providing the participants with identical information in terms of mall location, product quality/price, reason for dissatisfaction (i.e., buyer's remorse), and return policy. After reading about the scenarios, the participants rated their product-return intentions (Lee & Yi, 2017; $\alpha = 0.97$). Perceived time pressure was rated on a three-item scale (DeVoe & Pfeffer, 2011; Etkin et al., 2015; $\alpha = 0.95$). Perceived discomfort was assessed according to three items (Elliot & Devine, 1994; $\alpha = 0.87$). Furthermore, we measured the participants' chronic time pressure (Ailawadi et al., 2001; $\alpha = 0.90$) and perception of financial constraints (Ailawadi et al., 2001; $\alpha = 0.85$) to control potential confounders. In addition, the participants indicated their price perceptions and underwent an attention check (Oppenheimer et al., 2009). Last, the participants provided their demographic information, which included their gender, age, employment status, and household income (see Table 1 for details).

5.2 | Results

5.2.1 | Replication of the time-cue effect

A one-way ANOVA was employed to test the prediction that consumers primed by being reminded of the value of time (vs. neutral priming, no priming) would indicate lower product-return intentions. The results showed the existence of a significant effect of cuing the participants to consider the value of time on product-return intentions ($M_{\text{time}} = 4.00$ vs. $M_{\text{neutral}} = 6.17$ vs. $M_{\text{no_priming}} = 6.57$, $F(2, 215) = 23.93$, $p < 0.001$). Additional ANOVAs indicated no significant

TABLE 1 All measures for Studies 1–4

<p><i>Product-return intentions</i> (from 1 to 9, 9-point scale)</p> <ul style="list-style-type: none"> • Please rate your intention to return the product. <ol style="list-style-type: none"> 1. Unlikely (1) – likely (9) 2. Improbable (1) – probable (9) 3. Keep (1) – return (9)
<p><i>Perceived time pressure</i> (1 = “strongly disagree”, 9 = “strongly agree”)</p> <ul style="list-style-type: none"> • When I make a decision about whether to return the product, _____ <ol style="list-style-type: none"> 1. I feel pressed for time. 2. I feel I'm in rush. 3. I feel like I don't have enough time.
<p><i>Perceived discomfort</i> (1 = “strongly disagree”, 9 = “strongly agree”)</p> <ul style="list-style-type: none"> • When I make a decision about whether to return the product, I feel _____ about sticking to my earlier purchase decision. <ol style="list-style-type: none"> 1. Uncomfortable 2. Uneasy 3. Self-critical
<p><i>Perceived affordability</i> (1 = “strongly disagree”, 9 = “strongly agree”)</p> <ul style="list-style-type: none"> • As a purchaser in the scenario, _____ <ol style="list-style-type: none"> 1. I can afford to buy the jacket. 2. I have enough money to buy the jacket. 3. The jacket is affordable under my budget constraint.
<p><i>Private self-awareness</i> (1 = “strongly disagree”, 9 = “strongly agree”)</p> <ol style="list-style-type: none"> 1. I'm always trying to figure myself out. 2. Generally, I'm not very aware of myself. (R) 3. I reflect about myself a lot. 4. I'm often the subject of my own fantasies. 5. I never scrutinize myself. (R) 6. I'm generally attentive to my inner feelings. 7. I'm constantly examining my motives. 8. I sometimes have the feeling that I'm off somewhere watching myself. 9. I'm alert to changes in my mood. 10. I'm aware of the way my mind works when I work through a problem.
<p><i>Chronic time pressure</i> (1 = “strongly disagree”, 9 = “strongly agree”)</p> <ol style="list-style-type: none"> 1. Most days, I have no time to relax. 2. I always seem to be in a hurry. 3. I never seem to have enough time for the things I want to do.
<p><i>Financial constraints</i> (1 = “strongly disagree”, 9 = “strongly agree”)</p> <ol style="list-style-type: none"> 1. My household budget is always tight. 2. My household often has problems making ends meet.
<p><i>Price perceptions</i> (from 1 to 9, 9-point scale)</p> <ul style="list-style-type: none"> • What do you think about the price of this jacket? : Not expensive at all (1) – very expensive (9)

Note: Items denoted with (R) were reverse coded.

differences among the three groups with respect to participants' level of chronic time pressure ($p > 0.5$), financial constraints ($p > 0.4$), price perceptions ($p > 0.7$), or logged household income ($p > 0.5$). Furthermore, a planned contrast was used to compare the three conditions. The contrast analyses indicated that the participants primed by being reminded of the value of time were less likely to return the product

than those who had been reminded of the value of health (neutral priming) ($t(215) = 5.41, p < 0.001$). Priming the participants by reminding them of the value of time resulted in lower product-return intentions than the no-priming condition ($t(215) = 6.48, p < 0.001$). There were no significant differences in product-return intentions between the neutral and no-priming groups ($t(215) = 1.01, p > 0.3$). All the results indicated that consumers who valued their time were likely to keep the purchased goods rather than returning them.

5.2.2 | Mediation analysis

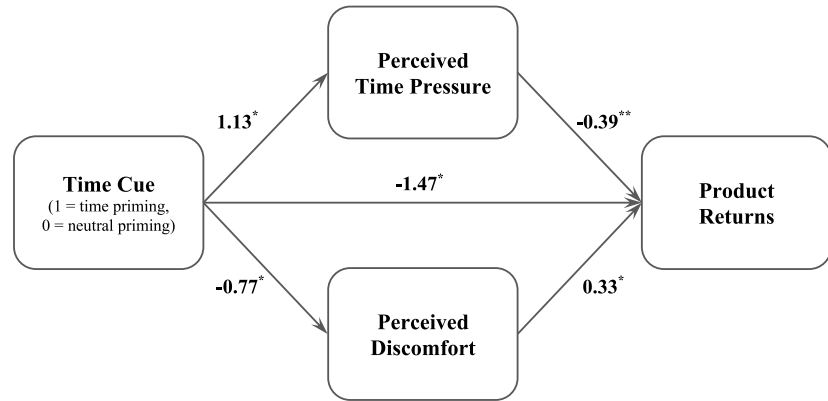
The mediating roles of perceived time pressure and perceived discomfort were tested using the PROCESS macro (Hayes, 2017; Model 4; 5000 bootstrap resamples). A parallel mediation model was conducted with time-cue salience as the independent variable (X: dummy-coded as 0 = neutral priming, 1 = time priming), product returns as the dependent variable (Y), and perceived time pressure (M1) and perceived discomfort (M2) as the mediators². Figure 3 illustrates the results of the proposition that emphasizing the value of time would reduce product returns and shows that this effect was simultaneously mediated by perceived time pressure and perceived discomfort. Consumers primed using the value of time tended to feel more time pressure when undergoing the product-return process and were thus less likely to return the product ($\beta = -0.44$, 95% confidence interval [CI] = -0.88 to -0.13). The mediation via perceived discomfort was also significant, indicating that consumers primed to value their temporal resources tended to feel less psychological discomfort when keeping products and that this reduced discomfort consequently lowered product-return intentions ($\beta = -0.25$, 95% CI = -0.62 to -0.03).

5.3 | Discussion

Study 2 revealed the dual-path via perceived time pressure and perceived discomfort in the link between the value of time and consumer product returns, supporting H2 and H3. Specifically, consumers primed using the value of time tended to not only perceived greater time pressure but also had their psychological discomfort offset, which eventually led them to choose to spend their time on activities other than returning the product. All the

²Following Lee and Yi (2019), we performed mediation analysis with two levels of the independent variable because mediation analysis with three levels is too complicated and distracting. This is possible because the three conditions in this study were not manipulated by three different types or levels of experimental treatments but included the neutral and baseline conditions. Also, the results of ANOVA and pairwise comparisons showed that there was no difference in product-return intentions between the neutral condition and the baseline condition, displaying a similar pattern. Therefore, we focused on the difference between time priming and neutral priming to deliver key results effectively. Comparison between these two conditions would clearly show the link between time salience and product-return intentions by ruling out the prediction that prompting other types of value may produce a similar outcome.

FIGURE 3 Time-cue effect on consumer product returns via perceived time pressure and perceived discomfort (Study 2). * $p < 0.05$, ** $p < 0.01$. Numbers represent unstandardized regression coefficients



Significant indirect effect of time cues through "perceived time pressure" = -0.44 ; 95% CI (-0.88 to -0.13)
Significant indirect effect of time cues through "perceived discomfort" = -0.25 ; 95% CI (-0.62 to -0.03)

results remained significant after controlling for chronic time pressure, financial constraints, and price perceptions. Study 2 yielded meaningful implications because a thorough experimental design was employed to develop rigorous triggers. We offered evidence that a time cue produced by the value of time reduces product returns, and this result was further clarified by adding a control group primed with the value of health as a part of the task-neutral priming condition.

6 | STUDY 3: MODERATING ROLE OF PRIVATE SELF-AWARENESS

Study 3 was conducted to achieve three main objectives. First, we aimed to identify the boundary conditions in which consumers would perceive less discomfort regarding their decision to keep the purchase. The degree to which people experience cognitive dissonance after making a consumption choice may vary across individuals, and this chronic tendency could moderate the time-cue effect on consumer product returns through perceived discomfort. We propose a moderating role of private self-awareness (high vs. low) and expect that the time-cue effect on product returns via perceived discomfort would be stronger among consumers with high levels of private self-awareness (H4). As the concept of private self-awareness is closely related to one's feeling of discomfort but not to that of time pressure, we predict that the moderating role of private self-awareness would occur during the process only via psychological discomfort. Second, from a methodological standpoint, we tried to activate a time cue in a way that differs from previous studies by prompting the participants to estimate their hourly wage to experimentally manipulate the economic value of time (DeVoe & Pfeffer, 2007, 2011). Third, we attempted to eliminate other potential explanations (i.e., perceived affordability), considering that the provision of the mental accounting process for time (i.e., wage-rate calculation) could remind the participants of their cash flow and financial status.

6.1 | Method

6.1.1 | Participants and design

A total of 207 respondents from the United States were recruited through MTurk. Sixteen participants were eliminated from analysis for failing the attention check (Oppenheimer et al., 2009), leaving a sample of 191 participants (127 females, $M_{\text{age}} = 38.69$, age range: 20–80). Study 3 employed a single-factor (time-cue salience: wage-rate information vs. no information) between-subjects experimental design. Participants were randomly assigned to one of the two conditions.

6.1.2 | Procedure and measures

The hypothetical scenario for this study was identical to that of Study 2, but the priming method was different. The participants in the wage-rate condition were instructed to assign an hourly rate to their own time, whereas those in the no-priming condition were not instructed to do so. More specifically, we asked the participants to come up with a ballpark estimate for their wage rate in real life (DeVoe & Pfeffer, 2007, 2011). All other aspects were the same between the groups. After reading the scenarios, the participants assessed a series of measures identical to those used in Study 2, but a private self-awareness scale was added (see Table 1). The respondents reported their level of private self-awareness in terms of 10 items (Fenigstein et al., 1975; $\alpha = 0.74$). For all other scales, the reliability coefficients were greater than 0.80.

6.2 | Results

6.2.1 | Moderated mediation

A moderated mediation analysis was applied (Hayes, 2017; Model 7; 5000 bootstrap resamples) with time-cue salience as the independent

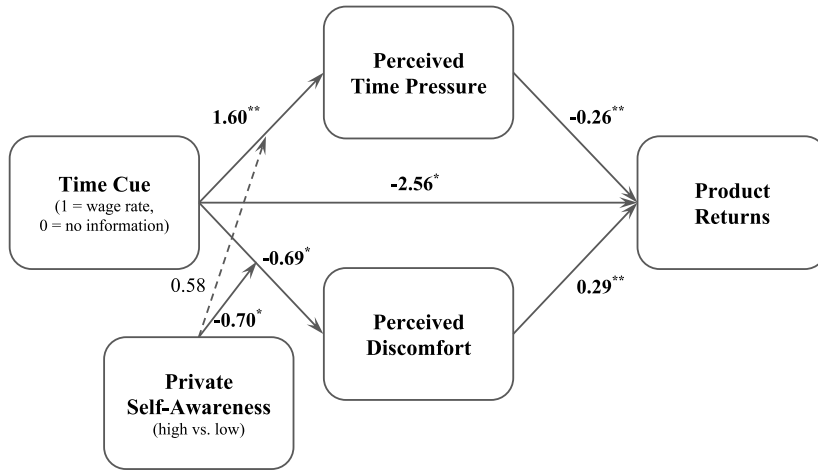


FIGURE 4 The role of private self-awareness in a moderated mediation framework (Study 3). * $p < 0.05$, ** $p < 0.01$. Numbers represent unstandardized regression coefficients

The index of moderated mediation through “perceived time pressure” = -0.15 ; 95% CI $(-0.33 \text{ to } 0.01)$
 The index of moderated mediation through “perceived discomfort” = -0.20 ; 95% CI $(-0.41 \text{ to } -0.05)$

variable (X: dummy-coded as 0 = no information, 1 = wage-rate information), product returns as the dependent variable (Y), perceived time pressure (M1) and perceived discomfort (M2) as the parallel mediators, and private self-awareness as the first-stage moderator (W).

As illustrated in Figure 4, time-cue salience and private self-awareness had a significant interaction effect on respondents' perceived discomfort when retaining the purchase ($\beta = -0.70$; $t(187) = -2.59$, $p = 0.010$). In turn, perceived discomfort had a significant effect on product-return intentions ($\beta = 0.29$; $t(187) = 4.42$, $p < 0.001$). The index of moderated mediation was also significant, showing that the confidence interval did not include zero ($\beta = -0.20$; 95% CI = $-0.41 \text{ to } -0.05$). Specifically, under the condition involving high levels of private self-awareness, the time-cue effect on product-return intentions was mediated by perceived discomfort (95% CI = $-0.80 \text{ to } -0.14$). On the contrary, under the condition involving low levels of private self-awareness, the indirect effect of time cues via perceived discomfort was not significant (95% CI = $-0.19 \text{ to } 0.27$). Meanwhile, time-cue salience and private self-awareness showed no interaction effect on perceived time pressure when returning the purchase ($\beta = 0.58$; $t(187) = 1.92$, $p > 0.06$). The index of moderated mediation showed that the mediated path via perceived time pressure was not moderated by private self-awareness ($\beta = -0.15$; 95% CI = $-0.33 \text{ to } 0.01$).

6.2.2 | Alternative explanation

In Study 3, we asked the participants in the wage-rate condition to calculate their approximate hourly wage rate so that they could apply the mental accounting rules to their time (Soman, 2001). A wage, in fact, is *money* paid for *time* spent at work. The Oxford dictionary defines a wage as “a fixed regular payment earned for work or services, typically paid on a daily or weekly basis.” By its definition,

the wage rate tends to emphasize the value of both time and money (DeVoe & Pfeffer, 2007). That is, when wage-rate information is actively cued, consumers can infer perceptions of affordability (i.e., subjective financial control) as well as time pressure. Thus, it would also be plausible to predict that if consumers feel that a product is affordable based on time cues combined with the provision of a wage rate, they will be less likely to return it.

To test the above argument, perceived affordability was measured using three items ($\alpha = 0.94$) (see Table 1). A parallel mediation model was employed (Hayes, 2017; Model 4; 5000 bootstrap resamples) with time-cue salience as the independent variable (X), product returns as the dependent variable (Y), perceived time pressure (M1), perceived discomfort (M2), and perceived affordability (M3) as the three potential mediators. The indirect effects were significant with perceived time pressure ($\beta = -0.40$, 95% CI = $-0.74 \text{ to } -0.15$) and perceived discomfort ($\beta = -0.19$, 95% CI = $-0.43 \text{ to } -0.02$) as mediators. However, the indirect effect was not significant with perceived affordability ($\beta = -0.04$, 95% CI = $-0.21 \text{ to } 0.12$) as a mediator. That is, the findings provided evidence for the mediating role of both perceived time pressure and perceived discomfort, but not for that of perceived affordability.

6.3 | Discussion

Study 3 provided support for H4, as the moderation of the indirect effect was probed. Offering time cues reduces consumer product returns by increasing the perceived time pressure when returning a product and decreasing the perceived discomfort when keeping it. Furthermore, the time-cue effect on product returns through perceived discomfort was amplified among privately self-aware people. Put differently, even privately self-aware consumers who have strict standards and tastes can be persuaded to retain a purchase by reminding them of the value of time, lowering their level

of discomfort, and thus lessening their product-return intentions. Furthermore, we used a different priming method to manipulate time-cue salience and replicated the results of previous studies. More notably, consumers primed with their hourly wage were less likely to return purchases because the wage rate made them feel the scarcity of time and the relief from dissonance, but not because it reminded them of abundant financial resources. All findings remained significant even after controlling for all potential confounders.

7 | STUDY 4: MANIPULATION OF TIME PRESSURE AND DISCOMFORT

The results of previous studies confirmed the impact of the time-cue effect on consumer product returns and the psychological processes underlying this effect. Although the results of Studies 2 and 3 supported the prediction that perceived time pressure and perceived discomfort would mediate the relationship between time cues and product returns, the mediators were measured. As such, the results were not free from the risk of confounding variables caused by “measurement-of-mediation” methods (Pirlott & MacKinnon, 2016). Thus, the aim of Study 4 was to provide a more rigorous test of causal effects by applying “manipulation-of-mediator” designs. In Study 4A, we manipulated the level of time pressure, and in Study 4B, we manipulated the level of psychological discomfort, examining whether the direct manipulation of mediators would produce systematic variation in product returns.

7.1 | Study 4A: Manipulation of time pressure

7.1.1 | Method

Seventy-six undergraduate students at a Korean university (33 females, $M_{\text{age}} = 22.64$, age range: 19–28) participated in this study in return for a small amount of compensation. In Study 4A, a single-factor (time pressure: high vs. low) between-subjects design was employed. Participants were randomly assigned to one of the two conditions.

Our theoretical model proposed that perceived time pressure would be a mediator of the link between time-cue salience and product returns. To provide more rigorous evidence supporting the existence of a causal effect of perceived time pressure, we directly manipulated time pressure by randomly assigning respondents to groups experiencing either a high or low level of time scarcity. Every participant read and wrote a story regarding the value of time to establish a baseline to confirm that the manipulation of time pressure could produce significant variations in product returns under all treatment conditions in which time cues had already been presented (Pirlott & MacKinnon, 2016). We manipulated the participants' perception of the value of time using the same method as in Study 2. After completing this task, the participants responded to scenarios like those presented in previous studies, which involved a situation centered on contemplating returning a product. The participants in

the high time-pressure condition were prompted to think of their scarce time ahead of the upcoming midterm, whereas those in the low time-pressure condition were prompted to think of their abundant time after the midterm. The scenarios were carefully controlled to avoid introducing any confounding elements other than time pressure. After reading the scenarios, the participants indicated their levels of perceived time pressure (manipulation check; $\alpha = 0.96$), product-return intentions ($\alpha = 0.96$), perceived discomfort ($\alpha = 0.94$), private self-awareness ($\alpha = 0.86$), chronic time pressure ($\alpha = 0.80$), and price perceptions (see Table 1). Finally, the participants were asked to report their demographic information.

7.1.2 | Results

A one-way ANOVA on perceived time pressure showed that the manipulation worked as intended. The participants in the high (vs. low) time-pressure condition felt more time pressure ($M_{\text{high}} = 6.00$ vs. $M_{\text{low}} = 3.33$, $F(1, 74) = 43.60$, $p < 0.001$). Additional ANOVAs showed no significant differences with respect to the control variables. A one-way ANOVA revealed the existence of a significant effect of time pressure on product-return intentions ($M_{\text{high}} = 4.99$ vs. $M_{\text{low}} = 6.74$, $F(1, 74) = 8.98$, $p = 0.004$). Therefore, experimentally manipulating perceived time pressure created variations in product-return intentions.

7.2 | Study 4B: Manipulation of psychological discomfort

7.2.1 | Method

Seventy-four undergraduate students at a Korean university (20 females, $M_{\text{age}} = 23.27$, age range: 20–31) participated in this study in return for a small amount of compensation. Study 4B also included a single-factor (psychological discomfort: high vs. low) between-subjects design. Participants were randomly assigned to one of the two conditions.

Psychological discomfort has been suggested as one of the process variables linking time-cue salience and product returns. In Study 4B, we manipulated the level of psychological discomfort by directly emphasizing or alleviating the postpurchase dissonance about having the jacket. All the other procedures followed the same protocol as in Study 4A. The participants reported their levels of perceived discomfort (manipulation check; $\alpha = 0.87$), product-return intentions ($\alpha = 0.99$), perceived time pressure ($\alpha = 0.89$), private self-awareness ($\alpha = 0.81$), chronic time pressure ($\alpha = 0.78$), and price perceptions (see Table 1). They provided their demographic information at the end of the survey.

7.2.2 | Results

A one-way ANOVA on the manipulation check revealed that the manipulation worked as expected. The participants in the high (vs. low)

discomfort condition felt more discomfort ($M_{\text{high}} = 6.21$ vs. $M_{\text{low}} = 4.88$, $F(1, 72) = 6.58$, $p = 0.012$). Additional ANOVAs revealed no other significant differences regarding the control variables. A one-way ANOVA revealed the existence of a significant effect of psychological discomfort on product-return intentions ($M_{\text{high}} = 7.87$ vs. $M_{\text{low}} = 5.00$, $F(1, 72) = 29.50$, $p < 0.001$). In sum, experimentally manipulating perceived discomfort produced systematic variations in product-return intentions, and this result was supported even with all the controls included.

7.3 | Discussion of Studies 4A and 4B

The results of Studies 4A and 4B demonstrated the causal relationship between time-cue salience and consumer product returns through the direct manipulation of perceived time pressure and perceived discomfort (Pirlott & MacKinnon, 2016). When consumers prompted to consider time perception were exposed to a cue indicating high (vs. low) time pressure, they were less (vs. more) willing to return the purchase. Meanwhile, when the respondents were manipulated to feel a high (vs. low) level of psychological discomfort in retaining the product, they were more (vs. less) likely to return it even in a situation in which the time cue was present. Comprehensively, our predictions were supported; amplifying consumers' perception of time pressure and alleviating psychological discomfort were effective strategies for preventing them from returning the purchase (H2 and H3).

8 | GENERAL DISCUSSION

Four studies demonstrated that making a time cue salient can be an effective strategy for reducing consumer product returns. Study 1 showed that increasing time-cue salience reduced product returns in both laboratory and field settings of online return. Study 2 revealed that the time-cue effect on product returns was dually mediated via perceived time pressure in returning the product and perceived discomfort in retaining it. Study 3 identified the moderating role of private self-awareness in the link between time-cue salience and product returns via perceived discomfort. Finally, Study 4 confirmed the causal account through the manipulation of perceived time pressure and perceived discomfort. Overall, the present research suggests that offering time cues can reduce consumer product returns through the amplification of time pressure and alleviation of psychological discomfort. Furthermore, this perceptual intervention works better for people with high levels of private self-awareness.

8.1 | Theoretical contributions

We contributed to the existing literature in several respects. Most importantly, the present research is perhaps the first attempt to explore the impact of the time-cue effect on consumer product returns from a consumer behavior perspective. By associating time-cue salience with the domain of product returns, we uncovered

evidence supporting the existence of a unique relationship that has received relatively little attention in the consumer behavior literature. Consumers often ignore the fact that they must spend time returning a purchase. Thus, if marketers can turn a hidden temporal cost into a tangible one by providing time cues, consumers will be hesitant to return goods. The current research tests the prediction that making a time cue salient reduces consumer product returns and provides insights beyond the existing literature that has focused on the return hassle cost only from a quantitative and policymaking perspective.

Second, the current research has methodological strengths. Our research combines laboratory and field experiments to achieve internal and external validity, producing consistent results across different methods and contexts. In particular, our research attempts to investigate the mechanism behind the time-cue effect with a systematic approach. We introduced two mediators, perceived time pressure and perceived discomfort, and repeatedly verified the indirect path via these psychological factors. Especially, we applied various time-cue manipulations throughout the experiments. Using the eye-tracking technology and field data, Study 1 showed that a time cue with subtle visual priming on a retailer's website reduced product returns. In Study 2, time cues were emphasized in a cognitive manner by asking participants to write essays on the value of time. In Study 3, the hourly wage was used as a cue to facilitate the mental accounting of time costs, and this method could prompt people to convert time into money. Moreover, we confirmed that nothing but time-cue salience influenced product returns by employing the neutral-priming condition in the control groups (weather priming in Study 1A, health priming in Study 2) and by ruling out the alternative explanation (perceived affordability in Study 3). In Study 4, a more rigorous test of causal effects was employed by manipulating mediators directly. With these experimental studies, we could guarantee the internal validity of findings, allowing for tight control of the study environment and precise predictions derived from a theory. Furthermore, a field study with an e-tailer established the robustness of the time-cue effect on consumers' actual return behavior in the marketplace.

Third, the current research enriches the research field on time perception and the decision-making processes of consumers. Soman's (2001) research on the mental accounting of sunk time costs has inspired many subsequent studies. Based on his work, in which he explained why time is not like money and suggested experimental manipulations to overcome this problem, researchers have found that prompting consumers to consider the value of time can affect various aspects of their behavior and psychology (e.g., DeVoe & House, 2012; DeVoe & Pfeffer, 2007). The current research extends the implications of time-perception literature to the practical concerns of the marketplace (i.e., product returns).

8.2 | Practical implications

Our findings have many practical applications that encompass the perspectives of both companies and consumers (i.e., persuader and

persuadee; Cialdini, 2007). First, marketers and retailers can utilize our findings to reduce consumer product returns. The beauty of this study lies in the fact that no financial costs are involved in implementing a nudge intervention (Benartzi et al., 2017; Thaler & Sunstein, 2008). Although many researchers have devised various ways to control product-return rates, their suggestions have inevitably entailed tangible costs such as promotional expenses (Lee & Yi, 2017; Petersen & Kumar, 2009). This study presents a compelling solution for marketers because it shows that inducing a slight change in consumers' time perceptions can reduce return rates. Specifically, we propose some tactics to make time salient by adding time-related visual (i.e., clock) or semantic (i.e., value of time) information to the return policy guidelines. Nevertheless, marketers should avoid changing the return process in a way that increases the actual time cost to return a product because a lenient return policy signals a competitive advantage (e.g., Oghazi et al., 2018; Pei et al., 2014; Petersen & Kumar, 2010). Rather, it is sufficient to trigger subtle time cues while consumers are in the process of making a return decision (Benartzi et al., 2017; Thaler & Sunstein, 2008).

Furthermore, practitioners should keep individual differences in mind when they design strategies for reducing product returns. One notable finding is that chronic time pressure, when assessed and analyzed as a covariate, had no significant effect on our results, showing that the influence of situational priming was greater than that of individual differences. However, we found that private self-awareness moderated the effect of time-cue salience on product returns via perceived discomfort. Although privately self-aware consumers feel more psychological discomfort in neutral conditions, their discomfort can be relieved when they are primed with time cues. Interestingly, private self-awareness can be situationally activated through the act of gazing into a mirror (Goukens et al., 2009). Therefore, in a retail environment that has many mirrors and thus can enhance consumers' private self-awareness (e.g., fashion retailers), more care should be taken to ensure that consumers value their time during the return process.

Lastly, consumers can better manage their consumption practices by knowing the time-cue mechanism in advance. Since people tend to infer their beliefs from their past behaviors (self-perception theory; Bem, 1972), frequent product returns can lead to lower purchase satisfaction and brand loyalty. Therefore, policymakers can enlighten consumers with the time-cue effect to avoid buying unnecessary products in the first place which makes their consumption journey unhappy and exhausting. In other words, applying the time-cue manipulation is expected to improve consumers' return habits and contribute to a long-term relationship between consumers and companies.

8.3 | Directions for future research

The present research has some limitations that can offer opportunities for future research. First, new business trends, such as curation- and subscription-based services, were not considered in this study

because they are different from existing shopping practices in terms of searching for, consuming, and returning products. For example, Stitch Fix, an online personal styling service in the United States, offers apparel items like other online merchants, but it is unique because customers do not need to search for or choose the items themselves. Instead, using both an algorithm and the judgment of human stylists, a personalized set of five pieces of apparel is selected on behalf of a client. After receiving and evaluating the items, customers can select their favorites and return any or all the packages with free shipping. This service is designed to reduce consumers' search and regret costs simultaneously; thus, product returns are not viewed as a cost. Therefore, it would be interesting to study product returns in such curated subscription commerce that proactively implements a free-return option.

Second, future studies should expand the scope of this study by investigating the time-cue effect from different perspectives. For example, time as an independent variable can be defined in different ways depending on how people process time. While the current research used a *physical* time cue (i.e., clock time) as a trigger for the value of time, future research could employ a *cognitive* time cue (i.e., one's own experience of time) and examine whether the time-cue effect exhibits the same pattern as observed in this study or is distorted and thus reinforced (von Schéele et al., 2020). From another point of view, while this study regarded time as an umbrella term that encompasses the return hassles, it would be interesting to explore other variables that might be confounded or substituted with temporal resources (e.g., effort or spatial distance). In another context, it is also worthwhile examining what the consequences would have been if consumers had noticed time cues at the point of purchase. Expanding from the current findings focused on the time-cue effect on return decision, future research can verify whether a time cue plays the same role at the point of purchase and whether there could be a carryover effect from purchase to return.

Third, it is worthwhile investigating other moderating variables that have not been examined in this study. Replicating the same results in multiple studies, we indirectly confirmed that the time-cue effect does not depend on retailing modalities (Study 1: online; Studies 2–4: bricks-and-mortar) or cultural differences (Studies 1 and 4: Koreans; Studies 2 and 3: Americans). However, future studies could treat the aforementioned contexts as potential moderators. In addition, the current research considered potential confounding variables that could affect the time-cue effect on product returns. Specifically, we controlled for not only demographic information such as gender, age, and income, but also experience with product returns; these variables had no significant effect on the time-cue effect. However, price levels (e.g., luxury goods) or shopping experiences (e.g., heavy shoppers) deserve to be studied as moderators in future research because they may neutralize the time-cue effect. Going a step further, follow-up studies could validate multiple cases across various product categories and sales channels so that the current findings can be generalized (see Hjort et al., 2019).

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Shinyoung Lee  <http://orcid.org/0000-0001-9960-1735>

Youjae Yi  <http://orcid.org/0000-0001-5536-6083>

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