The Priming Effect of Price Display and Banner Advertising on Online Consumers' Price Sensitivity

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Abstract

This study drew from priming literature to explore under-investigated factors that contribute to online consumers' price sensitivity and the subsequent brand interest. Specifically, it examined how being exposed to price cues on brand websites makes it easier to retrieve the price concept in a subsequent task (increased fluency), which in turn results in a higher valuation of the price attribute (higher price importance). Three pretests were conducted to develop the visual stimuli that were used in the main study and for the manipulation check of each variable. In the main study, participants were assigned to one of the conditions in a 3 (price cue: no price cue vs. small price cue vs. large price cue) x 2 (awareness: aware vs. unaware) x 2 (luxuriousness: mass vs. luxury) between-subjects study design and were exposed to the corresponding image of a mock retail website. A 3x2x2 ANOVA and a simple mediation analysis were conducted to examine each part of the conceptual model, and the entire model was tested using a moderated serial mediation. The results suggest that presenting the price of the product under examination (a price cue in the aware condition), compared to not presenting the price, increased the accessibility of the price concept, resulting in higher price sensitivity. In contrast, presenting a banner advertisement with the price of an irrelevant product (a price cue in the unaware condition), compared to presenting a banner advertisement without the price, decreased the accessibility of the price concept, resulting in lower price sensitivity. The lower price sensitivity led to higher brand interest. Implications of these results were discussed in the context of other studies.

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Chapter 1: Introduction

1.1 Multichannel Retailing

Retailers often use more than one channel to provide their products or services to end consumers, a strategy referred to as multichannel retailing (Zhang, Farris, Irvin, Kushwaha, Steenburghe, & Weitz, 2010). Traditionally, these channels included stores, Internet, and catalog (Heitz-Spahn, 2013). As the channels expanded to mobile phones and tablets with the advancement of technology, the concept of multichannel retailing has evolved into that of omnichannel retailing (Lazaris & Vrechopoulos, 2014). Rigby (2011) defines omnichannel retailing as "an integrated sales experience that melds the advantages of physical stores with the information-rich experience of online shopping" (p. 1). Omnichannel retailing requires an additional criterion on top of multichannel retailing: the simultaneous use of different channels, such as searching for information on mobile while shopping in a physical store (Lazaris & Vrechopoulos, 2014). Thus, multichannel retailing is a broader concept that emphasizes the use of multiple channels but not necessarily requiring the simultaneous use of those channels.

1.1.1 Challenges for Retailers

Multichannel retailing presents a challenge for retailers. Multichannel retailing allows consumers to engage in a cross-channel free-riding behavior, where they search for information in one retailer's channel and purchase in another retailer's channel (Heitz-Spahn, 2013). For example, a consumer may physically examine and compare various products at an offline store of Best Buy and purchase the chosen product at a

competitor's online store that offers the lowest price. The likelihood of engaging in this free-riding behavior is higher when consumers are shopping in several channels than when they are shopping in a single channel (Heitz-Spahn, 2013).

The free-riding behavior reflects consumers' price sensitivity when shopping across multiple channels. Consumers engage in a free-riding behavior to compare prices, for the convenience of saving time and effort, and for the flexibility in shopping time and location (Heitz-Spahn, 2013). One of the shopping motives for using an online channel was to search for information due to its low search cost (Van Baal & Dach, 2005). The shopping motivation to compare price information can result in negative outcomes for retailers because it compels them to lower the price of their product, possibly leading to price wars and undermining their profits (Rao, Bergen, & Davis, 2000).

This free-riding behavior is reflected in the initial fear of retailers when they were first faced with multichannel retailing. Since consumers could compare prices at a low search cost on the Internet, retailers were concerned that the online channel would cannibalize the offline channel (Deleersnyder, Geyskens, Gielens, & Dekimpe, 2002). Some offline distributors revolted against expanding to the online channel, which resulted in some firms (e.g. Compaq, Levi's) suspending their online sales or limiting it to only certain retail websites (Schoenbachler, & Gordon, 2002). Thus, an online channel was viewed as a direct competition of offline retailers (Useem, 1999).

Studies provide empirical evidence for this direct competition between offline and online channels by demonstrating how a practice in one channel affects the performance in another channel (Forman, Ghose, & Goldfarb, 2009; Goolsbee, 2000, 2001). Goolsbee (2000) examined how a critical factor in an offline channel, local sales tax, influences

consumers' probability of buying online. An increase in local sales tax led to a higher probability of buying online. In another study using microdata from a computer industry, the researcher also confirmed the existence of cross-price elasticity between online and offline channels (Goolsbee, 2001). A 1% increase in the offline retail price led to a 1.55% increase in the demand of an online channel.

1.1.2 Benefits for Retailers

Despite the challenge of multichannel retailing, it also has several benefits for retailers. Offering multiple channels makes it convenient for customers to shop at different channels at different stages in their buying process (Jensen, Kees, Burton, & Turnipseed, 2003). Consumers using more than one channel from a retailer are known to be more loyal, allocating a higher amount of money and time on that retailer than other consumers using only a single channel of the same retailer (Kumar & Venkatesan, 2005). In addition to retaining the existing customers, a multichannel retailing strategy also makes it easier to attract new customers (Rangaswamy & Van Bruggen, 2005) due to the reduced costs of entering a new market (Neslin, Grewal, Leghorn, Shankar, Teerling, Thomas, & Verhoef, 2006). Hence, contrary to the initial fear faced by retailers, online channels do not cannibalize offline channels (Deleersnyder et al., 2002), and multichannel retailing even increases the financial performance of retailers (Cheng, Tsao, Tsai, & Tu, 2007).

1.2 Concerns of Luxury Brands

Despite these benefits of multichannel retailing, luxury brands were initially reluctant to expand their distribution to an online channel (Chevalier & Gutsatz, 2012; Okonkwo, 2009). As well-noted in the analysis of Okonkwo (2009), Versace and Prada

did not have their own websites until 2005 and 2007, respectively, and Chanel and Hermès also refrained from offering their products on the online channel. The reason behind it was the fear that the 'desire' and 'exclusivity' associated with luxury will be tainted on the Internet that emphasizes convenience and global reach to the masses (Okonkwo, 2009; Kapferer & Bastien, 2012).

Luxury goods have unique features that are vulnerable in an online channel. Luxury goods are generally associated with psychological and hedonic benefits and only weakly associated with functional and utilitarian benefits (Vigneron & Johnson, 2004; Hagtvedt & Patrick, 2009). Hedonic values are related to affective elements in shopping, which is caused by abstract characteristics of goods and services such as the atmosphere (Cottet, Lichtlé, & Plichon, 2006). These abstract characteristics rely on sensory cues (Wiedmann, Hennigs, Klarmann, & Behrens, 2013) that are difficult to capture in an online setting, resulting in high search costs due to the difficulty in retrieving the abstract information in a search engine as well as the difficulty in comparing the abstract information. Thus, the hedonic benefits, on which luxury goods rely on the most, are difficult to be delivered to the consumers in an online setting.

Indeed, Liu, Burns, and Hou (2013) demonstrated that the shopping motivations for luxury brands can vary across channels. Even when shopping for luxury goods, the motivations for shopping in an online channel included more functional benefits such as convenience, price, and product availability. On the other hand, those shopping for luxury goods in a physical store pursued more hedonic values (aesthetic appeal, store trust, shopping experience, customer service, and sense of power), which are more directly related to the nature of luxury shopping (Liu et al., 2013).

Notwithstanding this initial concern, luxury brands expanded their retail channels from traditional brick-and-mortar stores to online stores. Discarding the previous beliefs about the classlessness associated with the online channel, they expanded their business models either by creating their own mono-brand website or selling their products on the website of an online multi-brand luxury retailer (Luxe Digital, 2018). Compared to the 5% growth of the personal luxury goods market, online sales increased by 24% in 2017, accounting for an overall market share of 9% (D'Arpizio, Levato, Kamel, & De Montgolfier, 2017). D'Arpizio et al. (2017) also estimated that online sales will take up 25% of the personal luxury goods market by 2025. Luxury brands went even further to utilize an online channel as a communication vehicle, employing social media to interact with consumers and building relationships with fashion influencers (Deloitte, 2019).

1.2.1 Price Display on Price Sensitivity

However, concerns remain among luxury brands, especially regarding the features on Internet that emphasize utilitarian values. According to Parguel, Delécolle, and Valette-Florence (2016), price display, once a taboo topic among luxury brands, has now become a widespread practice, but it is under-investigated in empirical research. Few studies explore the effect of price in luxury sector, and even those studies do not examine the price display itself but rather focus on the price level (Allsopp, 2005; Kapferer, 2012) or the brand dilution from offering luxury products at an affordable price level (Kapferer, 2012).

To my knowledge, two studies have investigated the effect of price display in the luxury sector. Although the main focus was on the online accessibility of a product, Kluge and Fassnacht (2015) found out that neither the price display nor the online

accessibility of a product influenced the perceived scarcity of luxury goods. Parguel et al. (2016) delved into the price display issue and demonstrated that displaying the price of a premium luxury brand increased its perceived uniqueness and conspicuousness. Their prediction was based on the adaptation level theory that posits that an individual's judgment of a stimulus is based on past experiences. In a pricing context, this means that consumers are influenced by reference prices that are formed through various encounters with market prices in surrounding environments. They explained that consumers without sufficient information will use the price display of a luxury product to infer high perceived expensiveness.

Although Parguel et al. (2016) were able to demonstrate how the price display affects the perceived uniqueness and conspicuousness of luxury products, they do not explain the direct relationship between the price display and price sensitivity, and nor do they provide empirical evidence for the underlying mechanism. One of the purposes of this study is to examine the direct effect of the price display on consumers' price sensitivity and the mechanism underlying this effect.

1.2.2 Advertisement on Price Sensitivity

Another issue that luxury brands may be concerned about is presenting an advertisement of other brands on their own website. Compared with the price display issue, various studies have investigated the effect of advertising on price sensitivity. Initially, there was a lack of consensus among researchers about this subject. Some studies asserted that advertising increased consumers' price sensitivity (Stigler, 1961; Nelson, 1970, 1974), whereas other studies pointed in the opposite direction (Comanor and Wilson, 1979).

To explain these conflicting findings, researchers introduced advertising's positioning strategies into the picture. Leszczyc and Rao (1990) divided advertising into national advertising and local advertising to explain its impact on price sensitivity. They collected time-series industry data from three brands that accounted for 90% of sales in the market. Collected variables include each firm's market share, the share of expenditures on national/local advertising, the share of new variety sales, and the relative prices. Using these variables to create models about price elasticity and market share, they estimated the models using Seemingly Unrelated Regression. The results show that national advertising, which is more focused on product differentiation, decreased price sensitivity, whereas local advertising, which is more focused on conveying the product price and availability, increased price sensitivity.

Kaul and Wittink's (1995) study also demonstrated that the presence of price information in advertising increases price sensitivity. They categorized advertising based on its content, labeling those that focus on brand positionings such as national advertising and "mood" advertising as 'nonprice advertising' and those that include price information as 'price advertising'. In their enhanced quantification of the results of past marketing studies, consumers exposed to price advertising showed an increase in price sensitivity, whereas those exposed to nonprice advertising exhibited a decrease in price sensitivity.

Kalra and Goodstein (1998) further reinforced this argument by providing evidence that even nonprice advertising that indirectly refers to price through value proposition can lead to an increase in price sensitivity. They examined how the relationship between advertising and price affects (e.g. brand equity and price sensitivity) depends on various positioning strategies of advertising. Through extensive experiments

involving seven positioning strategies and various measures of price sensitivity such as conjoint analysis, self-reported price importance, and price elasticity, they found out which strategies lead to an increase/decrease in brand equity and an increase/decrease in price sensitivity. Out of those strategies, advertising with value positioning led to lower brand equity and higher price sensitivity.

These studies have shown that including or emphasizing price information in advertising increases consumers' price sensitivity compared to advertising without any price cues. However, these studies have not investigated if this pattern of results persists for banner advertising. Several studies investigate the influence of banner advertising on consumer behavior, but they are mostly concerned with enhancing its effectiveness such as click-through rate or repeat purchase probabilities (Chtourou, Chandon, & Zollinger, 2002; Lothia, Donthu, & Hershberger, 2003; Manchanda, Dubé, Goh, & Chintagunta, 2006; Sherman & Deighton, 2001). Thus, the current study examines how a price cue in banner advertising affects online consumers' price sensitivity.

1.3 Overview of the Study

The purpose of this paper is to examine 1) the effect of price display on the online consumers' price sensitivity, 2) the effect of price cues in banner advertising on the online consumers' price sensitivity, 3) whether this effect hinges on the luxuriousness of the brand, and 4) the relation between price sensitivity and brand interest.

As demonstrated in the remaining chapters, the significance of this study lies in that it 1) explores frequently overlooked factors such as price display and banner advertising that may contribute to online consumers' price sensitivity, 2) applies the idea of priming effect and fluency in the real-world context of a brand website, 3) provides a

more in-depth explanation of the underlying cognitive mechanism of online price sensitivity by adopting priming literature, and 4) emphasizes the importance of decreasing price sensitivity of online consumers by drawing from interest literature in educational psychology.

The remaining chapters demonstrate the significance of this study and how this study fulfills its purposes. Chapter 2 skims over past studies on online price sensitivity to get a big picture of the factors that are frequently discussed. Chapter 3 points out that these studies generally focus on factors that consumers are aware of during shopping and argues that they can be also influenced by factors that they are unaware of, drawing from the studies on atmospherics and behavioral economics. Chapter 4 introduces the conceptual model and hypotheses, corroborating the predictions with various sources of literature. Chapter 5 presents the methods used in the main study. Chapter 6 summarizes the purpose, methods, and results of three pretests that were conducted prior to the main study. Chapter 7 finally discusses the results of the main study. Chapter 8 examines these findings in the light of other studies to discuss their implications and limitations.

Chapter 2: Online Price Sensitivity

2.1 Overview

This chapter presents conflicting arguments about the consumers' price sensitivity in an online channel. One stream of research suggests that consumers are more price-sensitive in the online channel than in the offline channel (Section 2.1), both from the perspective of the demand-side (Section 2.2.1) and the supply-side (Section 2.2.2). Section 2.2.3 explains several factors that may contribute to high online price sensitivity. Section 2.3 presents studies that argue that consumers are not particularly price sensitive in the online channel.

Before diving into the literature, it is important to note that the purpose of this chapter is not to take sides with any of the arguments but to understand the big picture of diverse arguments and the factors that they are focusing on. The current study points out that we should also consider factors other than those discussed in this chapter, but this argument is saved for the following chapters.

2.2 High Online Price Sensitivity

At the beginning of Internet commerce, economists were concerned that the high availability of information online would create a market that resembles perfect competition, in which decreased product differentiation would lead to fierce price competition (Kuttner, 1998). Following the stream of research that views online channels as competing with offline channels (Deleersnyder et al., 2002; Forman et al., 2009; Goolsbee, 2000, 2001; Useem, 1999), studies have explored consumers' price sensitivity

across these channels. They approach this issue from the perspective of either the demand-side or the supply-side (Granados, Gupta, & Kauffman, 2012).

2.2.1 From the Perspective of Demand-side: Price Elasticity

As a frequent measure of price sensitivity (Lynch & Ariely, 2000; Krishnamurthi & Raj, 1991; Kim, Srinivasan, & Wilcox, 1999), price elasticity captures the demand-side of online price sensitivity. Price elasticity is the percentage change in demand (quantity) divided by the percentage change in price. In other words, it measures how sensitive consumers are to the change in price. The price elasticity above 1 or below -1 means that the percentage change in demand is greater than the percentage change in price, suggesting that consumers are price-sensitive.

Using this measure of price sensitivity, studies have shown that consumers are more price-sensitive in the online channel than in the offline channel (Chevalier & Goolsbee, 2003; Granados et al., 2012). In other words, online consumers are more likely to respond to the price change than offline consumers. Criticizing past literature that depends on price dispersion and collects data from a potentially unrepresentative sample of consumers using Shopbots, Chevalier and Goolsbee (2003) collected data from publicly available websites such as Amazon and Barns and Noble. Using sales rank as an indicator of demand and matching it to the posted price, they found out that the demands at both online sites were significantly price elastic.

2.2.2 From the Perspective of Supply-side: Price Dispersion

In reaction to the demand side's high price elasticity in the online channel, retailers in the supply-side are adapting their pricing strategy to reflect this consumer behavior. Considering competitors' pricing actions proved to be an important factor in

increasing revenue in the online channel. Fisher, Gallino, and Li (2018) demonstrated that a full consumer-choice model based on competition-based pricing in online retailing can significantly increase revenue by 11%. Aside from proposing a randomized price experiment as a method to gain an accurate measure of consumers' price elasticity, they suggested that firms should consider competitor's price, product availability, and sales information (represented by stockout information). The best-response algorithm that considers all these factors have led to an increase in revenue in their study as well as in their follow-up study.

This trend of competition-based pricing strategy influences the price level itself as well as the price dispersion. Price dispersion is defined as "the distribution of prices (such as range and standard deviation) of an item with the same measured characteristics across sellers of the item at a given point in time" (Pan, Ratchford, & Shankar, 2004, p. 117). However, this stream of literature has shown conflicting results.

Theoretically, compared to offline environments, lower information search costs on the Internet make consumers more price-sensitive, resulting in lower market price and decreased price dispersion (Clay, Krishnan, & Wolff, 2001; Bakos, 1997). In line with the theoretical prediction, several studies suggest that online retailers have lower prices than their traditional counterparts. For example, Brynjolfsson and Smith (2000) examined the pricing behavior of 41 Internet and conventional retail outlets for the product category of books and CDs and found out that the online price was 9~15% lower than the price in traditional retail channels.

This trend of lower online price has also been found in the automobile and insurance industries. New automobile buyers are known to pay 2.2% lower price when

they use the Internet (Zettelmeyer, Scott Morton, & Silva-Risso, 2005). In the insurance industry, a decrease in price was observed after the introduction of Internet comparison shopping sites, with the growth of e-commerce reducing the price by 8~15% (Brown & Goolsbee, 2002). A study has illustrated the process by which the Internet lowers the price. Zettelmeyer et al. (2006) demonstrated that in the automobile retailing industry, the Internet use lowers the price by providing an invoice price for consumers to negotiate with dealers and a referral process for them to find dealers offering a lower price. In this study, the use of the Internet led to a 1.5% decrease in the price.

Contrary to the theoretical prediction, some studies have suggested that online prices are higher than the prices of offline channels. For instance, the average contract price of cars in an online website was much higher than that of traditional retailers (Lee, 1998). Lal and Sarvary (1999) also pointed out several circumstances under which the use of the Internet would lead to higher online prices due to a decrease in competition and monopoly pricing. In addition to the higher price level, studies have shown that online channel has high price dispersion. Pan et al. (2004) present an excellent summary of past literature that supports this argument. The studies mentioned in their summary indicate that the price dispersion of the online channel is no smaller than that of the traditional retail channel.

Several studies have provided explanation for these conflicting findings. Some studies found higher online prices because they used the posted price instead of the actual transaction data. Brynjolfsson and Smith (2000) found out that the online price dispersion is substantial when the study was conducted using the posted price but that the dispersion was lower when the price was weighted by market share. A study by Ghose and Yao

(2011) elicited a similar conclusion, that the price dispersion is lower when the data was from the transaction price, the price at which an actual purchase occurred, than when it was from the posted price, the price displayed on the website at which a purchase may or may not have occurred.

A recent study also revealed factors that explain these conflicting findings. Zhuang, Leszczyc, and Lin (2018) pinpointed the retailer type and consumers' shopping risk as two factors that may increase online price dispersion. Their model using the game-theoretic approach demonstrates that an increase in the number of pure online retailers and the reduction in online shopping risk result in increased online price dispersion. A higher number of pure online retailers increases price competition, which leads dual-channel retailers to increase their prices and focus on the sales in the offline channel, where consumers are less price-sensitive. Consumers are thus allowed to search for information in the online channel and purchase the product in the offline channel with lower shopping risk. This leads to higher online price dispersion because pure online retailers set their prices close to marginal cost, whereas dual-channel retailers increase their price.

In sum, these studies align with the theoretical prediction of lower online prices when the study is conducted with the actual transaction price while controlling for the retailer type and consumers' shopping risk. These studies have elicited that consumers are more price-sensitive in the online channel than in the offline channel. Researchers attribute this phenomenon to various factors that affect consumers' decision-making, which are outlined in the following section.

2.2.3 Factors that attribute to high online price sensitivity

Researchers examined various factors that affect consumers' online price sensitivity. This section discusses three factors that contribute to higher online price sensitivity: low search cost, different shopping motives, and retailers' online practices that teach consumers to be price sensitive.

Low Search Cost. The most frequently investigated factor is the low information search cost in the online channel. In other words, it costs less to gain information in the online channel. When searching for information, consumers weigh the search costs and the benefits from additional information and decides whether to carry on the search or not (Degeratu, Rangaswamy, & Wu, 2000). Compared with the offline channel where it takes more effort (higher cost) to shop around in different stores, consumers can move around easily in the online channel (lower cost) just by clicking the website.

There were some concerns that this low information search cost would increase information availability and could consequently lead to a market that resembles perfect competition, which is not a favorable outcome for companies. According to Electronic Markets Theory (EMT), the low search cost on the Internet enhances the availability of comparative product information to such a complete degree that it fosters the perfect competition often idealized in economics (Ennew, Lockett, Blackman, & Holland, 2005). The idea of perfect competition undermines the profitability of firms by hindering product differentiation and price collusion (Shapiro, 2005). In this world of perfect competition, no firm would be able to win the price war (Shapiro, 2005).

One underlying link in the above logic is the idea of price sensitivity. The low search cost increases information availability, which increases consumers' price

sensitivity, thereby resulting in nearly perfect competition between the retailers. Bakos (1997) examined the impact of reduced search costs in the electronic marketplace and deduced that lower search costs would lead to price competition that results in demanding consumers that are more sensitive to price and low capacity for monopoly pricing.

Indeed, various studies use the low search cost and high information availability to explain price sensitivity in the online channel (e.g. Diehl, Kornish, & Lynch, 2003; Lynch & Ariely, 2000). This research stream suggests that the online channel has higher transparency and more information available, which leads to increased price sensitivity. In Granados et al.'s (2012) study, for instance, business travelers were less likely than leisure travelers to search offline. Instead, they engaged in an online information search to allot more time to other important tasks. Low search costs and the transparency of the online channel led to a higher magnitude of price elasticity for these business travelers.

The low search cost also explained consumers' free-riding behavior in multi-channel retailing, which is a behavior associated with price-sensitive consumers (Martos-Partal & Gonzalez-Benito, 2013; Konus, Verhoef, & Neslin, 2008). Van Baal and Dach (2005) examined how search characteristics, the extent to which product information can be searched prior to purchase, influences consumers' tendency to engage in free-riding behavior, where they use one channel to obtain services and use another channel to purchase the product. They discovered that search goods, whose search cost for product information is lower than that of experience goods that have to be experienced in order to gain information, are more likely to lead to free-riding behavior of using multiple channels in one transaction.

While increasing consumers' sensitivity to price, low search cost went as far as to reduce the impact of another variable such as brand name. In addition to demonstrating that price is a more important factor in the online channel than in the offline channel, Degeratu et al. (2000) added complexity to this relationship by introducing search cost, brand name, and types of attributes into the picture. Their findings suggest that increased availability of information from low search costs reduced the importance of a brand name in consumers' choice.

Some studies explore the boundary conditions of this relationship between low search cost and price sensitivity. Lynch and Ariely (2000) were able to identify different types of search behavior that leads to an increase or a decrease in consumers' price sensitivity. Reduced search costs for quality information led to a decrease in price sensitivity. However, reduced search costs for price information had no significant effect on price sensitivity, and reduced search costs for cross-store comparison led to an increase in price sensitivity.

Diehl et al. (2003) further expanded on this boundary condition by introducing the variable of a smart agent, a tool that reduces search costs by sorting products according to certain criteria. Even though reduced search costs for quality information led to a decrease in price sensitivity in the previous study of Lynch and Ariely (2000), it led to an increase in price sensitivity with the use of a good smart agent. The reason behind this was that smart agents sort products to show more attractive options, which decrease the perceived variance in quality, leading to higher price sensitivity.

Different Shopping Motives. Unique features of online and offline channels have attracted consumers with different mindsets: a hedonic mindset for the offline channel and a utilitarian mindset for the online channel.

Utilitarian and hedonic values are distinct dimensions of shopping value (Babin, Darden, & Griffin, 1994). Hedonic values are related to affective elements in shopping, which are caused by abstract characteristics of goods and services (Cottet, Lichtlé, & Plichon, 2006), and are often described in terms of fun, pleasure, and emotional worth of shopping (Hirschman & Holbrook, 1982; Bellenger, Steinberg, & Stanton, 1976). Utilitarian values are related to a goal-oriented mindset that emphasizes convenience, cost-saving, information availability, and selection (To, Liao, & Lin, 2007). Participants who have purchased the planned product reported higher utilitarian values than those who have not purchased the planned product, and this planned product acquisition was not related to hedonic values (Babin et al., 1994).

Physical experience acts as a hedonic shopping motive for the offline channel. The experience in shopping was validated as one of the dimensions of the hedonic shopping scale (Babin et al., 1994; Yu & Bastin, 2010). Physical properties of a store, referred to as atmospheric cues, are frequently studied variables in a hedonic shopping experience that shapes a customer's experience in a store (Uhrich & Benkenstein, 2012; Ballantine, Jack, & Parsons, 2010; Andersson, Palmblad, & Prevedan, 2012). The physical experience of not only the store but the product itself attracts consumers in offline shopping when shopping for experiential products since brick-and-mortar stores provide opportunities for physical examination and trial of the product (Balasubramanian, Raghunathan, & Mahajan, 2005).

Moreover, offline shopping allows for immediate possession of the purchased item compared to the non-store channel (Noble, Griffith, & Weinberger, 2005). This immediate possession is an important feature of impulsive buying (Rook & Gardner, 1993, as cited in Lin & Chuang, 2005 and Yu & Bastin, 2010). Impulsive buying is an irresistible and unplanned buying behavior at the opposite end of planned purchasing behavior (Kacen & Lee, 2002) that correlates significantly with hedonic values (Babin et al., 1994). Thus, immediate possession acts as a hedonic motivation that drives offline shopping.

On the other hand, the online channel also has its own merit, the low search cost, that leads to a utilitarian and goal-oriented mindset. One of the motivations for online shopping is that it is convenient to search for product information (Liu et al., 2013). Product information allows consumers to evaluate a product more accurately and search for the right brand that better satisfies their needs (Akerlof, 1970). Thus, the convenience of shopping for product information acts as a unique advantage of the online channel that attracts consumers with these utilitarian motivations (Van Baal & Dach, 2005).

These utilitarian motivations attract even affluent consumers to online shopping. Contrary to the intuition that affluent consumers will be relatively less price sensitivity, Dolliver (2010) reported that these affluent consumers' shopping motives for the online channel are also utilitarian. Even more than 75% of affluent consumers engaged in online luxury shopping to find the company's website, compare different product brands, search for the best price, and decide which is the optimal retail channel for shopping (Dolliver, 2010). These behaviors are utilitarian in that they emphasize convenience, cost-saving,

information availability, and selection, which are known to influence utilitarian motivation (To et al., 2007).

Hence, unique features of each channel have led to different shopping motives: hedonic motivations for the offline channel and utilitarian motivations for the online channel. These different shopping motives lead to varying levels of price sensitivity because hedonic values are associated with decreased price sensitivity (Irani & Hanzaee, 2011). Thus, this explains why some studies have reported consumers as more price-sensitive in the online channel, which emphasizes utilitarian values, compared with the offline channel, which emphasizes hedonic values that decrease price sensitivity.

Teaching Online Consumers to be Price Sensitive. Studies on the price sensitivity of consumers in the air travel industry suggest that industry practices have taught consumers to search on price in an online channel, making them more price sensitive.

In the air travel industry, online consumers are reported as being more price sensitive than offline consumers. Price was an important factor in both willingness to pay to travel and willingness to pay for airline service for online consumers (Garrow, Jones, & Parker, 2007). Granados et al. (2012) directly compared consumers' price elasticity between online and offline channels using actual industry sales data of airline tickets. In line with past studies, they found out that the demand for online travel agencies (OTA) is more price elastic than that of offline channels. Flight-level data elicited similar results. Unlike past models using market-level data, Mumbower, Garrow, and Higgins (2014) created a model with flight-level data using web bots to collect public-available data of

JetBlue's flight, fare, and seat map information. They discovered that correcting for endogeneity led to an elastic online demand (-1.97).

This higher price sensitivity in the online channel can be attributed to online practices of the air travel industry that emphasizes the price attribute. Air travel industry is infamous for its price wars based on competition-based dynamic pricing (Burger & Fuchs, 2005; Rao, Bergen, & Davis, 2000; Lin, 2006). Dynamic pricing is another form of price discrimination that charges different prices for a product based on the varying values that a consumer places on it (Krugman, 2000). In this dynamic pricing, high capacity and low demand lead to decreased prices, whereas low capacity and high demand lead to increased prices (Burger & Fuchs, 2005; Lin, 2006).

The emphasis on the price attribute in these online pricing strategies has led consumers to be more price sensitive. In their model using flight-level data, Mumbower, Garrow, and Higgins (2014) discovered that online consumers were more price-sensitive during a competitor's promotional sales. Furthermore, the demand for opaque OTA such as Priceline.com or Hotwire, whose product information is more limited, was more price elastic than that for transparent OTA such as Expedia, which offers more detailed product information about flights (Granados et al., 2012). Thus, the online travel agency's current strategy of emphasizing the price attribute either by conducting a sales promotion or by not providing sufficient information about other product attributes increases the price sensitivity of online consumers.

2.3 Not Particularly Price-Sensitive in the Online Setting

Despite these studies that substantiate higher price sensitivity in the online channel, some studies take it a step further to present conditions under which the online channel decreases price sensitivity.

Consideration of the self-selection effect elicited results different from the previous section. The self-selection effect refers to when a difference in the outcome, the price sensitivity, is driven not by the difference in the channel itself but by the difference in the characteristics of consumers that use each channel (Gensler, Leeflang, & Skiera, 2012). For example, higher online price sensitivity may not be due to consumers exhibiting more price-sensitive behaviors in the online channel but because younger consumers with tight budget constraints are more likely to use the online channel.

When the self-selection effect was controlled by studying within-subject households, online consumers were less price-sensitive than offline consumers (Chu, Arce-Urriza, Cebollada-Calvo, & Chintagunta, 2010; Chu, Chintagunta, & Cebollada, 2008). Gensler et al. (2012) also found out that although online revenue is lower than offline revenue, as confounded by the self-selection effect, the use of the online channel increases demand. They reasoned that online use increases demand because consumers perceive greater control over information when using the online channel, which enhances consumers' decision-making by reducing uncertainty (Weathers, Sharma, & Wood, 2007).

In addition, the low search cost did not always lead to higher price sensitivity. According to Lynch and Ariely (2000), the type of low search cost determined whether it will increase or decrease price sensitivity. They discovered that the low search cost for

quality information decreases price sensitivity, whereas the low search cost for cross-store comparison increases price sensitivity for products that are found across the stores but not for those unique to one store.

2.4 Concluding Remarks

We have looked at the studies that report higher price sensitivity of consumers in the online channel, the factors that contribute to this phenomenon, and the opposing argument that presents several boundary conditions that determine whether consumers will show higher or lower price sensitivity in the online channel. The following chapter points out how these arguments, regardless of which side they are on, focus on only the factors that consumers are aware of and emphasizes the importance of also considering the factors that consumers are unaware of.

Chapter 3:

Being Influenced by Factors that You Are Aware and Unaware of

3.1 Overview

This chapter points out that the studies discussed in the previous chapter focus on only the factors that are relevant to the shopping context and thus consumers are aware of during shopping. As supporting evidence that consumers can be also influenced by the factors that they are unaware of, this chapter presents the findings of two research fields. Atmospherics studies are presented first (Section 3.2). Section 3.3 further explains how economics research diverged into two research streams, reflecting the fact that consumers are influenced by both the factors that are relevant to their goal of shopping (e.g. maximizing utility) and the factors that are irrelevant to their goal of shopping itself (e.g. sunk cost, opportunity cost) (Arkes & Blumer, 1985; Blaug, 1997; Knetsch & Sinden, 1984).

3.2 Being Influenced Without Conscious Awareness: Atmospherics

The studies mentioned in the previous chapter that discuss the complex phenomenon of online price sensitivity focus on the factors that are relevant to the shopping context and thus consumers are aware of during shopping. For instance, the low search cost is concerned with finding the relevant information on price, quality, or cross-comparison (Lynch & Ariely, 2000). Shopping motives are also relevant to the goal of shopping. Consumers knowingly examine physical stores and products and expect immediate possession of a product in offline shopping (Noble et al., 2005; Uhrich &

Benkenstein, 2012). They intentionally search for relevant information in online shopping (Liu et al., 2013). Common practices in the air travel industry are concerned with pricing, promotional sales, and the type of online travel agency, which are factors that consumers are aware of when shopping (Burger & Fuchs, 2005; Mumbower et al., 2014; Granados et al., 2012).

However, consumers can be also influenced by the factors that they are unaware of. A classic example is atmospherics studies, which investigate how various factors in the store atmosphere affect consumers' shopping experience without conscious awareness (Spence, Puccinelli, Grewal, & Roggeveen, 2014). Kotler (1973) emphasized the importance of using the store atmosphere as a marketing tool rather than solely focusing on the tangible product being offered. The atmosphere is understood with senses and thus consists of visual, auditory, olfactory, tactile, and gustatory dimensions (Kotler, 1973; Spence et al., 2014). Typical independent variables in this research stream include color, scent, music, and so on (Kotler, 1973; Lorenzo-Romero, Gómez-Borja, Mollá-Descals, 2011; Ward, Davies, & Kooijman, 2003). Typical dependent variables include customer satisfaction, purchase probability, and so on. (Moon, Yoon, & Han, 2017; Kotler, 1973).

Webmosphere research has expanded these classic atmospherics research into the web setting. The term "webmosphere" was coined by Childers, Carr, Peck, and Carson (2001) to refer to the online store atmosphere that shapes consumers' shopping experience. Numerous studies have illustrated the effect of online atmospherics on consumer behavior (Eroglu, Machleit, & Davis, 2003; Lorenzo-Romero et al., 2011). For example, better atmospheric qualities of online store websites increased the pleasure of

consumers, which in turn influenced their attitude, satisfaction, and approach/avoidance behavior (Eroglu et al., 2003). Providing music and freedom of movement when navigating online websites increased consumer satisfaction and their approach behavior, consequently resulting in higher online sales (Lorenzo-Romero et al., 2011).

3.3 Rational and Irrational Consumers: Economic and Behavioral Theory

In line with the aforementioned studies that demonstrate that consumers are influenced by factors without conscious awareness, the classic economic theory has faced criticism by a theory of consumer behavior that posits that people are not always rational and that they also make irrational decisions (Kahneman & Tversky, 1979; Thaler, 1985). However, this criticism was due to the miscommunication of the term 'utility' (Blaug, 1997). Utility is a quantitative concept that 'should' be maximized in economic theory, but it is more of a choice indicator in consumer behavior theory (Blaug, 1997). No one theory is better than the other. Instead, these two different viewpoints complement each other in that economic theory strives to *predict* the behavior of an idealized individual, whereas consumer behavior theory tries to *describe* consumer behavior (Thaler, 1980).

3.3.1 Economic theory

Homo Economicus, referring to "economic human" in Latin, first emerged as a term used by a school of scholars to disparage John Stuart Mill's theoretical abstractions in the late nineteenth century (Persky, 1995). As one of those scholars, Ingram (1888) asserted that his theories "dealt with not real but with imaginary men-'economic men'" (p. 218) whose behaviors are solely driven by wealth.

Classic economic theory assumes that consumers make a rational choice by maximizing utility within their budget constraints (Blaug, 1997). In reaction to the

modern theories at the time that were focused on the marginal rate of substitution, Paul Samuelson (1938) introduced a more direct method of utility analysis, which was later termed 'revealed preference theory.' He eliminated the utility part and postulated that consumers' choice reveals their preference. The core idea of his theory is that if bundle A is chosen over bundle B, A is revealed preferred over B, and that B would be chosen over A only if A is unaffordable. This idea was later called the Weak Axiom of Revealed Preference (WARP).

Further building on this idea, Houthakker (1950) introduced the Strong Axiom of Revealed Preference (SARP) that prevents the paradox of C being preferred over A even when A is revealed to be preferred over B and B is revealed to be preferred over C. The strong axiom extends the choice sets to all possible combinations of price and quantity so that final bundle cannot be preferred over the initial bundle (Hands, 2014).

3.3.2 Behavioral Economics

The above attempts in economic theory are based on normative principles that strive to predict the choice of an idealized individual (Samuelson, 1938). However, an increasing amount of empirical research over the past decades have demonstrated that this economic theory alone cannot describe consumer behavior (Kahneman & Tversky, 1979; Knetsch & Sinden, 1984; Thaler, 1980). Thaler (1980) emphasizes the importance of this distinction between normative and descriptive models and discusses several topics where consumers' behavior was shown to be inconsistent with economic theory. For example, people consider sunk costs when they should not. If people were rational as assumed by the traditional economic theory, they should make a choice based on the costs and benefits of each option, considering only incremental costs and ignoring sunk

costs. Contrary to this prediction, people take into account the sunk costs and even decide to choose an option that offers lower utility just because it had higher sunk costs (Arkes & Blumer, 1985).

Another example of deviation from rational decision-making is the underweighting of opportunity costs relative to out-of-pocket costs. Most economic analyses use the assumption of near equivalence (Knetsch & Sinden, 1987). If this were true, the maximum amount that people are willing to pay to avoid a loss should be the same as the minimum amount of compensation they demand for accepting the loss. This assumption was violated in several studies including both hypothetical and realistic options (Hammack & Brown, 2016; Rowe, d'Arge, & Brookshire, 1980; Knetsch & Sinden, 1984). The minimum compensation necessary for the participants to accept the loss was far greater than the maximum amount they were willing to pay to avoid the loss.

To explain these seemingly irrational behaviors, Kahneman and Tversky (1979) have formulated the prospect theory as an alternative to expected utility theory. They presented several phenomena that violate the tenets of expected utility theory: expectation, asset integration, and risk aversion. Participants' responses to hypothetical choice problems revealed several findings. First, people overweigh outcomes with high probability (certainty effect), which led to risk-averse preference for smaller certain gain over larger probable gain. Second, this preference was reversed for negative outcomes (reflection effect), signifying risk-seeking preference for a larger probable loss over a certain smaller loss. Third, people tended to disregard the common features across alternatives and focus on unique components to simplify the decision process (isolation

effect). Finally, they considered the outcome in terms of change rather than its absolute value.

The prospect theory's value function differs from the utility function in that the utility of an outcome is replaced by the value of the outcome and probabilities are replaced by decision weights (Kahneman & Tversky, 1979). In the value function, the value of each outcome is multiplied by its decision weight. This value function is concave for gains and convex for loss, and its slope is steeper for loss than gains.

Based on the value function of prospect theory, Thaler (1985) introduced the concept of mental accounting. He replaced the utility function with the value function, used price directly in the function in the form of reference price, and relaxed the normative principle of fungibility. Mental accounting extends the single outcome context of the value function to compound outcomes. Using the value function, Thaler (1985) was able to conclude that segregation of outcomes is preferred for multiple gains and mixed loss (more likely to be preferred the smaller gain is relative to loss) and that integration is preferred for multiple losses and mixed gain.

He asserts that mental accounting is a two-stage process: evaluating transactions and making purchase decisions. In the first stage, an individual evaluates potential transactions by considering acquisition utility and transaction utility. Acquisition utility is the utility from acquiring a good with value ($\bar{p}$) at the actual price (p) ($v(\bar{p}, -p)$). Transaction utility is the value of paying the actual price (p) compared to reference price (p^*) ($v(-p: -p^*)$). Total utility is the sum of these two utilities ($w(z, p, p^*) = v(\bar{p}, -p) + v(-p: -p^*)$). In the second stage, people make purchase decisions by comparing this with their time and category-specific budget constraints.

3.4 Concluding Remarks

An effort to predict an idealized behavior of a rational individual should be complemented by studies that describe an individual's actual behavior that is not fully understood by the economic theory alone. In the same vein, the factors described in the previous chapter may not fully explain consumers' price sensitivity in the online channel. There may be other environmental cues on websites that influence consumers' price sensitivity without conscious awareness. Cognitive psychology provides a possible explanation for this irrational behavior by demonstrating the cognitive processes by which consumers are consciously or subconsciously influenced by environmental cues even without allocating a significant amount of attention. As one of those cognitive processes, the priming effect is explained in the following chapter.

Chapter 4: Conceptual Model and Hypotheses Development

4.1 Overview

In the previous chapter, we have briefly looked at atmospherics and webmosphere studies to gain insight into how consumers can be influenced by environmental factors without being consciously aware of it. Atmospherics studies commonly use the stimulus-organism-response (S-O-R) framework to explain the process by which consumers are affected by the environmental cues (Donovan & Rossiter, 1982; Eroglu et al., 2003; Putri & Balqiah, 2017). The explanations based on this paradigm argue that an environmental cue, as a stimulus (S), elicit certain affective or cognitive state in an organism (O), which affects the response of the organism (R) (Mehrabian & Russell, 1974). Despite the fact that O refers to an internal state of the organism, studies have focused mostly on the affective state such as a PAD scale and not much on the cognitive state (Lunardo & Mbengue, 2013). Instead of adopting this paradigm, the current study uses the priming effect to give a more in-depth explanation of the underlying cognitive mechanism by which consumers are affected by the cues on brand websites.

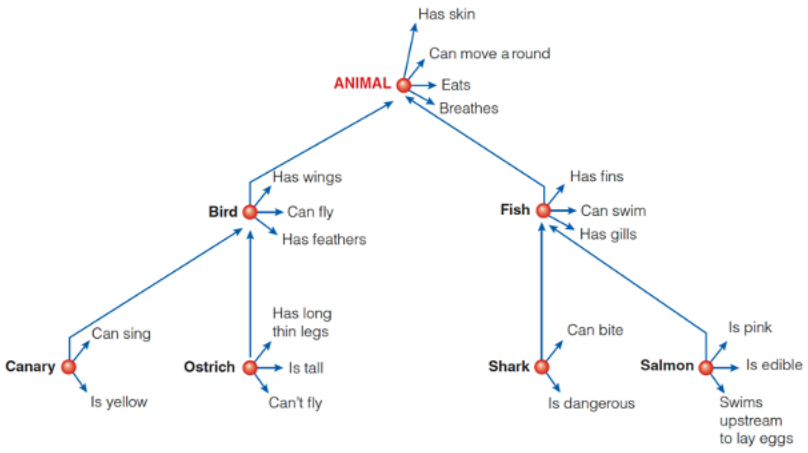
This study examines the priming effect of price cues, but in order to understand the priming effect, it is crucial to understand how humans process and store information. Thus, Section 4.2 first describes the knowledge structure in human cognition. Building on this background knowledge, the remaining sections explain the priming effect and how it can manifest itself in an online setting, developing a conceptual model and hypotheses drawing from diverse sources of literature.

4.2 Theoretical Background: Semantic-Network Model

Semantic-network models describe one of the methods by which knowledge is represented in our mind. This model suggests that knowledge is represented in our mind as concepts (meanings) and that these concepts are interconnected in the form of a network. The most classic model is Collins and Quillian's (1969) network model. In this model, knowledge representation takes the form of a hierarchical semantic network similar to a tree diagram (Figure 4.1). Nodes are typically concepts that form the elements of meaning, and links are the connection or relationships between the nodes.

Figure 4.1

Collins and Quillian's (1969) Hierarchical Semantic Network Model.



Note. Figure from Sternberg and Sternberg (2017).

It was Quillian (1966, 1967) who developed the model of large memory that simulates the human knowledge structure. His model reflects the findings of previous research from diverse disciplines. According to his dissertation (1966), early philosophical psychology assumes that a human memory structure consists of a number of associated elements. Other research fields, including the studies on computer

simulation of humans' intellectual processes such as a chess game, assume that the cognitive process includes attributes and plans. These three elements (associative links, attributes, and plans) were considered simultaneously in Newell, Shaw, and Simon's (1958) "language" (IPL), a model that simulates humans' cognitive processing.

Using one of those computer languages that includes associations, attributes, and plans, Quillian (1966, 1967) builds on Simmons's "Synthex" project (1963) to construct a large memory model. When comparing the meanings of a pair of English words, Simmons's "Synthex" was able to retrieve the semantic information related to the original pair of words, but it was not able to make inferences based on the retrieved information. Quillian's model first "recoded" a dictionary into a network of elements (nodes) and associations (links). Then this model was tested by simulating a human performance of comparing a pair of English words. This memory model was able to not only retrieve the relevant information but also draw inferences, discover the relationships between the words, and even create an English text that summarizes the findings.

Collins and Quillian (1969) provided evidence that this memory model exists in the form of a semantic network that resembles a hierarchical tree diagram (Figure 4.1). Participants answered true or false questions about sentences that varied in the number of levels required to move to answer the question. They measured response time as a proxy for the time it takes to retrieve information from memory. As predicted, results showed that it took a longer time to respond if the participants had to move several levels to determine the truthfulness of the sentence. For example, it was longer to verify the statement "A canary is an animal", which requires moving two levels from a canary to a bird to an animal, than the statement "A canary is a bird", which requires moving one

level from a canary to a bird. Similarly, it took longer to verify the statement "A canary is a bird" than the statement "A canary is a canary", which does not require moving any level (Figure 4.1). These findings illustrate that there are indeed several levels in semantic-network and that it may require longer retrieval time the more levels it involves.

4.3 Conceptual Model

Below is the final conceptual model, hypotheses, and abbreviations of each variable tested in the current study (Figure 4.2, Table 4.1, Table 4.2). The remaining sections explain the theoretical rationale behind this conceptual model. The salience of price cue will positively influence the accessibility of the price attribute (H1, Section 4.4), and the accessibility of the price attribute will positively influence price importance (price sensitivity) (H2, Section 4.5). The relation between the salience of price cue and the accessibility of the price attribute will be moderated by awareness (H3, Section 4.6) and luxuriousness of the brand (H4, Section 4.7). Finally, price importance will negatively influence brand interest (H5, Section 4.8).

Figure 4.2
Conceptual Model.

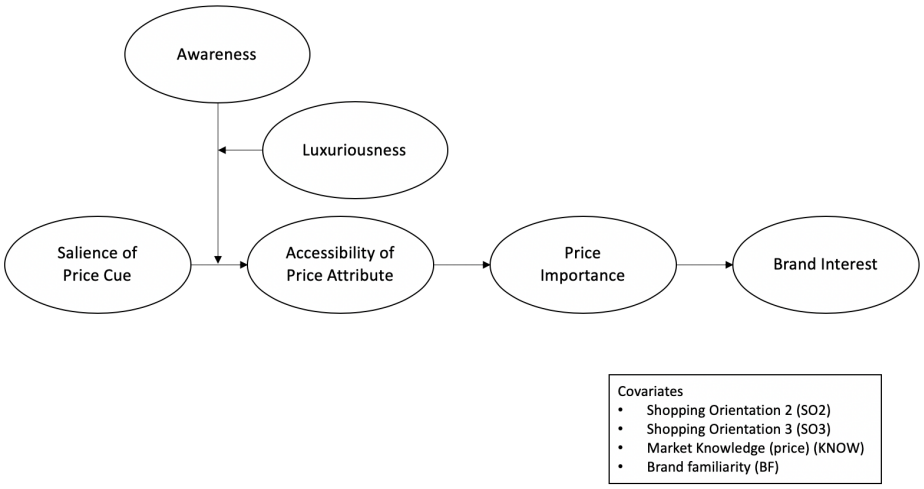


Table 4.1
Hypotheses.

	Hypothesis
H1	Providing a more salient price cue (no price cue vs. small price cue vs. large price cue) increases the accessibility of the price attribute.
H1a	Providing a more salient price cue (no price cue vs. small price cue vs. large price cue) increases the accessibility of the price attribute in aware condition.
H1b	Providing a more salient price cue (no price cue vs. small price cue vs. large price cue) increases the accessibility of the price attribute in unaware condition.
H2	Higher accessibility of the price attribute leads to higher price importance.
H3	The magnitude of an increase in the accessibility of the price attribute is larger for those exposed to banner advertising (unaware condition) than those exposed to price display (aware condition).
H4	The difference in the magnitude of an increase in the accessibility of the price attribute between the aware condition and the unaware condition is larger for those shopping on the website of a luxury brand than those shopping on the website of a mass-market brand.
H5	Decreased price importance leads to higher brand interest.

Table 4.2
Abbreviations of Variables.

Variable	Name
Salience of price cue	SAL
Luxuriousness	LUX
Awareness	AWA
Accessibility of price attribute	ACC
Price sensitivity	PS
Price importance	PI
Price search	SEARCH
Brand interest	BI
Shopping orientation 2	SO2
Shopping orientation 3	SO3
Brand familiarity	BF
Market knowledge (price)	KNOW

4.4 Salience of a Price Cue (SAL) to Accessibility of Price Attribute (ACC)

4.4.1 Theoretical Background: Priming as Nondeclarative Knowledge

People encounter various stimuli in their everyday lives, thereby forming knowledge representation in their minds. Knowledge can be either declarative or nondeclarative. Declarative knowledge is “knowing that”, knowing the explicit factual information as represented in the semantic network described above (Ryle, 1949). Nondeclarative knowledge was traditionally represented only by procedural knowledge,

which is knowledge of procedures and "knowing how" (Ryle, 1949). Squire (1986) concluded based on past research that there are other mental representations in the nondeclarative knowledge domain. Nondeclarative knowledge includes not only procedural knowledge of skill learning but also priming (Sternberg & Sternberg, 2017; Squire & Dede, 2015).

In terms of skill learning, studies have shown that patients with amnesia can still learn certain skills such as perceptual-motor skills and cognitive skills despite suffering from anterograde and retrograde memory impairment (Butters, Heindel, & Salmon, 1990; Cohen & Squire, 1980; Corkin, 1968; Squire, Cohen, and Zouzounis, 1984). Amnesic patients were able to learn motor skills (Butters et al., 1990; Corkin, 1968). For example, Corkin (1968) studied a 40-year-old man with severe amnestic syndrome from resection of the bilateral medial temporal-lobe. This man was able to acquire motor skills such as rotary pursuit, bimanual tracking, and tapping. He showed complete retention for the rotary pursuit task, which was feasible to test several days after the end of the training. This study suggested that the medial temporal-lobe is not necessary for the acquisition and retention of motor skills.

In addition, amnesic patients were able to learn cognitive skills (Cohen & Squire, 1980; Squire et al., 1984). Cohen and Squire (1980) found out that amnesic patients were able to learn pattern-analyzing skills required in the mirror-reading task at a rate equivalent to that of the control group. Squire et al. (1984) strengthened this argument by proving that the skills acquired prior to amnesia can survive retrograde amnesia. Unlike past studies, they taught the mirror-reading skills to patients before the onset of amnesia from electroconvulsive therapy (ECT). The results were similar to the previous study in

that the amnesic patients were able to acquire the pattern-analyzing skills at a similar rate to that of the control group even if they could not remember having received the training sessions nor recognize the words that they have read in the session. These studies illustrate that some learning skills belong to the domain of nondeclarative knowledge whose neural system is independent of that of declarative knowledge.

Another form of nondeclarative knowledge, the main theory that guides the logic of the current study, is priming. Priming refers to the facilitated processing of a stimulus based on prior exposure (Perry, Light, Davis, & Braff, 2000; Tulving, 1985). One underlying mechanism of the priming effect is that the prior exposure to the first stimulus (prime) in the study phase affects the fluency of the cognitive processing of the second stimulus (target) in the test phase that is identical or related to the first stimulus (Higgins, 1996). In other words, it makes the second stimulus more accessible, increasing its *processing fluency*, "the subjective experience of ease with which people process information" (Alter & Oppenheimer, 2009, p. 1). Specific examples are given for each type of priming.

One type of priming is repetition priming, which refers to when the exposure to the first stimulus facilitates or biases the response to the second stimulus that is perceptually or conceptually *identical* to the first stimulus (Keane, Gabrieli, Fennema, Growdon, and Corkin, 1991). Neuropsychological data provide evidence that further divides repetition priming into two subdivisions: perceptual and conceptual. Keane et al. (1991) found out that a group patient with Alzheimer's disease exhibited a normal level of perceptual priming in a perceptual-identification task that uses a structural-perceptual

memory system but an impaired level of conceptual repetition priming in a word-completion task that uses a lexical-semantic memory system.

A typical task of perceptual repetition priming is a perceptual identification task. In this task, the priming effect is confirmed when prior exposure to a word improves the perceptual identification of that word in the following task (Keane et al., 1991). For example, participants were able to identify a word more quickly when they had studied the word in the prior task (Keane et al., 1991; Keane, Gabrieli, Growdon, & Corkin, 1994). Perceptual repetition priming had a similar effect in the Gollin Incomplete-Pictures task, a form of priming that proved to be perceptual in normal participants. The participants were asked to guess what each incomplete picture represents, and they made a reduced number of errors in the repeated second session than in the first session (Gabrieli, Keane, Stranger, Kjelgaard, Corkin, & Growdon, 1994).

Another type of priming that is used as the main theoretical framework underlying the current study is semantic priming. It refers to a similar but slightly different effect, whereby the exposure to the first stimulus (prime) facilitates or biases the response to the second stimulus (target) that is semantically *related* to the first stimulus (Keane et al., 1991). The spreading activation model, a canonical model, explains this process by demonstrating that activation of the prime concept in the study phase spreads to the activation of its directly connected concepts, which in turn activate their own directly connected concepts (Collins & Loftus, 1975). The activation accrued at concepts facilitates their subsequent retrieval in the test phase (McNamara, 2005).

A typical task assessing the accessibility of the primed construct in semantic priming is a lexical decision task, where participants are asked to determine whether the

target word is a word or nonword (McNamara, 2005). The primed construct is said to be more accessible when the participants are more accurate or respond faster when the target word is preceded by a semantically related prime word than a semantically unrelated prime word. Another task of semantic priming is a naming or pronunciation task, where participants are asked to read the target words as fast as possible (McNamara, 2005). The primed construct is said to be more accessible when the participants read the target word faster when they were first exposed to a semantically related word.

The process of semantic priming could be reiterated using Collins and Quillian's (1969) semantic network model described in the previous section (Figure 4.1). Let's say a group of participants are asked to study a list of words, including the word 'bird'. Another group of participants are asked to study a list of words, without the word 'bird'. The word 'bird' is semantically related to the word 'canary' (i.e. have a direct link in Figure 4.1). Other words in the list, aside from 'bird', are semantically unrelated to the word 'canary' (i.e. do not have any direct/indirect links in Figure 4.1). Examples of these words include 'ice', 'cement', 'glass', 'chips', et cetera. Then both groups are asked to determine if a new list of words is a word or a nonword, one of the words being 'canary'. If the participants were semantically primed with the word 'bird' in the previous task, they would be quicker and more accurate in verifying the word 'canary' than those who are not primed with the word 'bird'.

4.4.2 Hypotheses Development

Following the logic of semantic priming, providing price cues (prime) on the websites would activate the price concept along with its semantically related concepts. This residual activation later facilitates the processing of these concepts (target) that are

semantically related to price, making them more accessible. Simply put, providing a price cue increases the accessibility of price-related concepts. However, the magnitude of an increase in the accessibility of price-related concepts may depend on the salience of the price cue, which is explained in the following theoretical background.

4.4.3 Theoretical Background: Salience of a Price Cue Affects the Priming Effect

Advertising literature suggests that the size of a stimulus leads to the attraction of differential attention. In order for an advertisement to be remembered, it first has to been seen, or in other words, receive attention, by the audience. An increase in advertisement size was associated with increased attention and memory of the advertising (Franken, 1925; Homer, 1995). When summarizing the findings of five individual studies about various factors that affect the attention allocated to newspaper advertisements, Franken (1925) suggested that an increase in attention is proportionate to the square root of the increase in advertisement size. In other words, advertising size has to increase by four times to double the amount of attention it gets. Accordingly, larger advertisement size enhanced the memory of the advertising as well (Homer, 1995).

An increased amount of attention is an indicator of the salience of the stimulus. Due to their limited mental capacity (Kahneman, 1973), humans have to carefully allocate the limited amount of attention to each feature of a stimulus, a function called selective attention (Johnston & Dark, 1986). Taylor and Fiske (1978) explained that this differential attention given to each feature results in more information being retained for salient features and less for other features. Moreover, the salience model of visual attention measures attention by tracking participant's eye movement to infer the saliency of each element in the stimulus (Fuchs, Ansorge, Redies, & Leder, 2011; Itti & Koch,

2000; McCay-Peet, Lalmas, & Navalpakkam, 2012). In this model, an area that attracted more attention is interpreted as being more salient. Thus, the size of a stimulus can lead to differential attention and memory, which is an indicator of varying salience of the stimuli.

As one of the methods of varying the size of the stimulus, the font size has been used to manipulate the salience of the stimulus (McCay-Peet et al., 2012; Shen & Urminsky, 2013; Aggarwal & Vaidyanathan, 2016). McCay-Peet et al. (2012) demonstrated through the salience model of visual attention that increasing the font size, along with changes in other factors, was able to attract more attention. Aggarwal and Vaidyanathan (2016) provide more robust evidence by manipulating only the font size. Their analysis with an eye-tracking equipment indicated that the price information of both retail price and sale price received more attention when they were in larger font size.

What does salience have to do with the current study? Several studies demonstrate that more salient fluency cues increase the accessibility of the cues (Bastin, Willems, Genon, & Salmon, 2013; Keane, Orlando, & Verfaellie, 2006; Simon, Bastin, Salmon, & Willems, 2018). As a brief reminder, enhanced accessibility of the primed construct is validated when participants recognize the previously studied words better than the unstudied words. In the studies cited above, the fluency cues were made more salient by manipulating the similarity of the constituent letters for studied and unstudied words. For example, in the high salience condition, the words in studied and unstudied were each drawn from two different pools of alphabets: (a, e, y, b, d, g, j, l, n, r, t, w, z) and (i, o, u, c, f, h, k, m, p, q, s, v, x) (Keane et al., 2006). In the low salience condition, the words in studied and unstudied words were pooled from the same pool of alphabets. In all three

studies, both healthy participants in the control condition and patients suffering from Alzheimer's disease showed an increase in the recognition performance when the fluency cues were more salient, indicating increased accessibility of the primed construct.

4.4.4 Hypotheses Development

As explained in the previous hypotheses development about semantic priming, the absence of any price cue will result in very low accessibility of price-associated concepts because participants are not primed with any price concept. Providing a price cue, on the other hand, will activate the price concept, and this activation will spread to the other directly and indirectly related concepts (Collins & Loftus, 1975). The residual activation accrued at concepts will then facilitate the subsequent processing of the price-associated concepts, increasing their accessibility (McNamara, 2005).

The above theoretical background about the salience of price cue suggests that the priming effect will be stronger for a more salient price cue in larger font size. This means that the accessibility of price-associated concepts will be higher for the more salient price cue in larger font size than the less salient price cue in smaller font size. Combining everything together, the conditions of the salience of price cue, in ascending order of the accessibility of price attribute, would be no price cue, small price cue, and big price cue.

H1: Providing a more salient price cue (no price cue < small price cue < large price cue) increases the accessibility of the price attribute.

4.5 Accessibility of Price Attribute to Price Importance

4.5.1 Theoretical Background: Valuation

The previous section focused on the accessibility of the primed construct as the underlying mechanism of the priming effect but not on the priming effect itself. This

section describes how the priming effect manifests itself in the human judgment domain through enhanced fluency.

One of the judgment domains of processing fluency is valuation. Alter and Oppenheimer (2009) summarizes various cognitive mechanisms used to manipulate fluency (tribes of fluency) and their consistent effects on judgment (metacognitive nation). Some examples of cognitive mechanisms include linguistic, perceptual, spatial, and conceptual processing. Fluency influenced judgment domains such as truth, liking, confidence, frequency, etc. Out of these numerous variables, the current study focuses on the manipulation of conceptual processing (salience of price cues) and the impact of its resulting conceptual fluency on the judgment of valuation of the price attribute (price importance).

Studies in the judgment domain of valuation indicate that the fluency of a stimulus positively affects its perceived value (Alter & Oppenheimer, 2006, 2008). For example, more easily pronounced financial stocks (more fluent) showed better earlier performance than those that are more difficult to pronounce (less fluent) (Alter & Oppenheimer, 2006). In a laboratory setting, participants expected the pronounceable stocks to appreciate over time and unpronounceable stocks to depreciate over time. To generalize these findings, actual stock market data revealed that stocks with easier pronunciation performed better than the ones with difficult pronunciation after one day and one week after it began trading. The researchers also found the same effect when using the company's three-letter ticker code as a proxy for the ease of pronunciation.

Similarly, people perceived familiar currency and items as more valuable than unfamiliar currency or items. In Alter and Oppenheimer's (2008) study, participants

thought that they could purchase more items with a familiar $1 bill than an unfamiliar $1 coin and with familiar two $1 bills than an unfamiliar $2 bill. They answered that they could buy more items with a familiar $1 bill than an unfamiliar slightly altered $1 bill and that they could buy more disfluent items than fluent items with the same familiar $1 bill. These experiments show that people think of unfamiliar currency and disfluent items as less valuable.

4.5.2 Hypotheses Development

These studies on valuation corroborate the argument that more fluent stimuli are perceived as more valuable. Adopting this principle, this study argues that semantic priming of price cues enhances the processing of the price-related concepts and that this conceptual fluency results in a higher valuation of the price attribute (i.e. price importance), which is one of the two attitudinal dimensions of price sensitivity (Shankar, Rangaswamy, & Pusateri, 1999).

H2: Higher accessibility of the price attribute leads to higher price importance.

4.6 Awareness as a Moderator

4.6.1 Theoretical Background: Consciousness and Awareness

A distinction has to be made between consciousness and awareness. Tulving (1993) points out that some studies view consciousness as a single mechanism and divides it into several levels, regarding them as varying quantitative degrees of the same mechanism. However, he distinguishes consciousness and awareness, saying that there are varying levels of awareness within a given state of consciousness. He describes consciousness as “the sense of sight”, “a general capacity that an individual possesses for particular kinds of subjective experience”, and awareness as “seeing something”, “a

particular manifestation of this general capacity" that is always directed at something in particular (Tulving, 1993, p. 290, 291). To clarify, one has to be conscious in order to be aware of something, but being conscious does not necessarily imply that you are aware of something.

A person can be conscious and be aware of something, having a sense of sight of all the primes and targets and also being aware of the relationship between the two (Filay, Marmurek, & Morton, 2005; Squire, Ojemann, Miezin, Petersen, Videen, & Raichle, 1992; Buckner, Petersen, Ojemann, Miezin, Squire, & Raichle, 1995). In these studies, participants are explicitly asked to complete the test phase with the primes in the study phase. For example, Buckner et al. (1995) asked participants to recall the words that they have seen in the study phase to complete the word stems in the test phase. In this case, participants have a sense of sight of all the words in the study phase, being conscious of the words. They are also aware of the relationship between the words in the study phase and those in the test phase because they are explicitly told to recall the words from the study phase.

A person can be conscious but unaware at the same time, having a sense of sight of all the primes and targets but not being aware of the relationship between the two (Filay et al., 2005; Squire et al., 1992; Buckner et al., 1995). These studies do not explicitly inform the participants about the relation between the study phase and the test phase (Squire et al., 1992; Buckner et al., 1995) or even describe them as ostensibly separate studies (Lerner, Goldberg, & Tetlock, 1998; Ybarra & Trafimow, 1998). In this case, participants still have a sense of sight of all the words in the study phase because they are asked to consciously look at the words. But they are not aware of the relation

between the words in the study phase and those in the test phase because they are informed that they are two separate tests.

Bargh, Chen, and Burrows's (1996) study is a classic study that substantiates this case. In their study, people that were primed with the words relevant to the elderly stereotyped in a scrambled sentence task took longer to walk down the hallway, which is a behavior associated with the elderly. Banfield, Pendry, Mewse, and Edwards (2003) further elaborated on this finding by demonstrating that the stereotype priming affects not the actions themselves but the gaps between the actions. In these studies, participants showed priming effect when they were conscious of the primes (i.e. having the sense of seeing the primes in the scrambled sentence task) but unaware that the priming in the first task would affect their subsequent behavior.

A person can be affected by the stimuli below the threshold of consciousness, as substantiated by the extensive literature on subliminal priming (Strahan, Spencer, & Zanna, 2002; Karremans, Stroebe, & Claus, 2006; Pratte & Rouder, 2009). For example, Pratte and Rouder (2009) flashed the primes for only 25 or 100 milliseconds, which is also preceded and followed by a mask flashing for 63 milliseconds. Because the primes were flashed for only several milliseconds, it is subliminal because participants do not report on having seen any stimuli (Lin & Murray, 2014). Also, participants cannot be aware of the relation between the primes and the targets because they do not even remember having seen the primes.

A well-known example that corroborates this case is subliminal advertising, a term coined by James Vicary in 1957. He contended that he was able to increase the sales of Coke and popcorn by quickly flashing the slogans "Drink Coca-Cola" and "Eat

popcorn" throughout the movie (BBC News, 2015). Though he later confessed that his argument lacks sufficient evidence, the idea that consumers can be affected by an advertisement that they are not even conscious of has stirred a significant amount of interest (BBC News, 2015; Karremans et al., 2006; Packard, 1957; Verwijmeren, Karremans, Bernritter, Stroebe, & Wigboldus, 2013). Karremans et al. (2006) brought this idea into a lab setting and found out that subliminal priming of a brand name of a drink positively influences thirsty consumers' choice and intention.

4.6.2 Theoretical Background: Awareness and Priming

The level of awareness influences the priming effect. A classic example is the discounting of the fluency when people are aware of its source. To be specific, their judgment is influenced by the fluency of the primed construct, but they stop using fluency as an information cue when they can locate the source of the fluency (Alter & Oppenheimer, 2009). Various studies illustrate the discounting of fluency (Oppenheimer, 2004, 2006; Schwarz, Bless, Strack, Klumpp, Rittenauer-Schatka, & Simons, 1991; Whittlesea & Williams, 1998).

For example, in Schwarz et al.'s (1991) study, participants had to recall 6 or 12 examples of situations in which they behaved assertively or unassertively. They rated themselves as more assertive (unassertive) when recalling 6 assertive (unassertive) situations than 12 assertive (unassertive) situations. In other words, they evaluated themselves using the primed construct when it was more fluent (recalling 6 examples is easier than recalling 12 examples). But this priming effect was eliminated when they were informed that the ease or difficulty of the recall was due to the music they have

heard. Even if the source of the fluency was directed toward an irrelevant source, participants discounted the fluency as information used to evaluate themselves.

Furthermore, the perceptual fluency/attribution model suggests that mere exposure effects, an enhanced affective preference toward a stimulus that have been repeatedly exposed, are stronger when participants were unconscious of the fact that they have been already exposed to the stimulus. Similar to the priming effect, mere exposure effects are explained by fluency and broadly belong to the same memory effects as the priming (Butler & Berry 2004; Peigneux, Schmitz, & Willems, 2007; Willems, Dedoner, Van der Linden, 2010). As initial empirical evidence, Bornstein and D'Agostino (1992) conducted experiments demonstrating that the mere exposure effect is stronger when stimuli are perceived without awareness for a short duration of 5 milliseconds than when they are consciously perceived for a longer duration of 500 milliseconds. Thus, the mere exposure effect was stronger when the participants were not aware of the stimuli that were flashed for 5 milliseconds.

Higgins, Bargh, and Lombardi (1985) provide initial evidence that awareness can affect the priming effect. In their study, participants used a more recently primed construct in the stimulus evaluation task after a short delay following the prime task, whereas they used a more frequently primed construct after a long delay. In other words, the recently primed construct is more accessible right after the priming, but its accessibility decreases with time after the priming. They additionally found out that this effect was even more pronounced among participants who were unable to recall and thus are unaware of the prime event.

Expanding on this additional finding, Lombardi, Higgins, and Bargh (1987) further demonstrated that participants who are aware of the priming showed a contrast effect with a more accessible construct, whereas those who are unaware of the priming showed an assimilation effect. However, being aware of the priming did not always result in a contrast effect. Rather, there was another boundary condition. It led to an assimilation effect when the priming task was interrupted, but it led to a contrast effect when the participants perceived the priming task as completed (Liberman, Forster, & Higgins, 2007; Lombardi et al., 1987).

The above studies focus on the moderating role of awareness between the priming task and the priming effect, not between the priming task and the accessibility of the primed construct. The distinction between the priming effect and the accessibility of the primed construct is an important one, but they are often used interchangeably (Higgins, 1996). According to Higgins (1996), the priming effect can occur in a number of ways. For example, priming can cause a motivational consistency effect, where participants are eager to be consistent in their response and thus show assimilation to the primed construct. Accessibility of the primed construct is another outcome of priming that can lead to either assimilation or contrast priming effect.

In contrary to the extensive amount of literature on the role of awareness on the priming effect, the literature on the role of awareness on the accessibility of the primed construct is relatively scant. There is one study that directly examined the accessibility and the priming effect in the same context. Liberman et al. (2007) illustrated that the boundary condition in the priming effect in awareness is due to the varying accessibility of the primed construct. When the priming task was interrupted, participants had an

unfulfilled goal and thus had higher accessibility of the primed construct, which resulted in an assimilation effect. When the priming task was completed, participants were in post-fulfillment states, so the accessibility of the primed construct was decreased, resulting in a contrast effect.

4.6.3 Hypotheses Development

The current study expands on the past study by focusing on the moderating role of awareness between the price cues and the accessibility of the price attribute. Liberman et al. (2007) examined the moderating role of interrupted vs. completed priming on the accessibility of the primed construct but not the moderating role of awareness on the accessibility of the primed construct. Lombardi et al. (1987) examined the moderating role of awareness on the priming effect but not on the accessibility of the primed construct. The current study examines the moderating role of awareness on the accessibility of the primed construct.

The theoretical background demonstrated that priming can occur in both conditions, with and without awareness. This study examines consumers' behavior during shopping, not after completing the purchase, so it interrupts the shopping experience. The interruption of the priming task in both aware and unaware conditions resulted in an assimilation effect (Lombardi et al., 1987). The interruption of the priming task resulted in the assimilation effect through an increase in the accessibility of the primed construct (Liberman et al., 2007). Considering these two studies, we can predict that the interruption of the priming task in both aware and unaware conditions will result in higher accessibility of the primed construct and an assimilation to the primed construct.

H1a: Providing a more salient price cue (no price cue vs. small price cue vs. large price cue) increases the accessibility of the price attribute in aware condition.

H1b: Providing a more salient price cue (no price cue vs. small price cue vs. large price cue) increases the accessibility of the price attribute in unaware condition.

However, the magnitude of the increase in the accessibility of the primed construct will be greater in the unaware condition because the priming effect was more pronounced among participants who were unaware of priming events (Higgins et al., 1995). Moreover, discounting fluency suggests that the priming effect is more conspicuous among participants without awareness because they do not discount the fluency (Alter & Oppenheimer, 2009). According to this stream of research, it is possible that the magnitude of an increase in the accessibility of price attribute will be larger in unaware than in aware condition.

H3: The magnitude of an increase in the accessibility of the price attribute is larger for those exposed to banner advertising (unaware condition) than those exposed to price display (aware condition).

4.7 Luxury as a Moderator

4.7.1 Theoretical Background: Luxury and Price Display

Luxury shopping is hedonic and experiential in nature (Vigneron & Johnson, 2004; Kim & Lee, 2011). Luxury goods are generally associated with psychological and hedonic benefits and only weakly associated with functional and utilitarian benefits (Vigneron & Johnson, 2004; Hagtvedt & Patrick, 2009). Consumers with hedonic benefit orientation are known to seek experiential values while shopping (Kim & Lee, 2011).

Hedonic benefits are often described in terms of fun, pleasure, and emotional worth of shopping (Hirschman & Holbrook, 1982; Bellenger, Steinberg, & Stanton, 1976).

Supporting this view, Parguel et al. (2016) demonstrated that the price display on luxury websites actually increases the perceived uniqueness and conspicuousness. For high-end luxury brands, price display did not increase the perceived uniqueness and conspicuousness because it already has a high baseline luxury. For premium luxury brands, however, the presence of price display increased the perceived uniqueness and conspicuousness because consumers used price as an indicator of luxuriousness. Regardless of whether it was a high-end luxury brand or a premium luxury brand, consumers used price to infer the uniqueness and conspicuousness of the product.

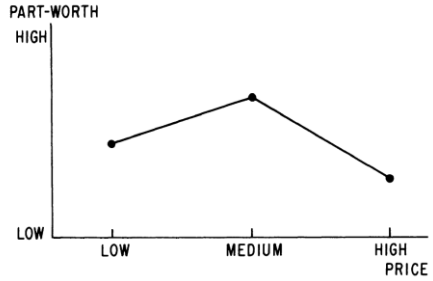
Research on price-perceived quality (PPQ) provides sufficient evidence that consumers use price as an indicator of quality (Huber & McCann, 1982; Yang, Sun, Lalwani, & Janakiraman, 2019). Participants inferred higher quality when the price tag displayed a higher price (Yang et al., 2019). McCann, Bush, Fucito, Lattimore, and Miller (1979, as cited in Huber & McCann, 1982, p. 324) found out an inverted V-shaped between the price level and the product choice (Figure 4.3). Huber and McCann (1982) speculated that this shape was due to participants inferring low quality from a low price. To support their argument, they demonstrated that prompting the participants to infer quality from price increased the purchase likelihood of the products in the higher price range because they inferred higher quality from higher prices (Figure 4.4).

As consumers perceive higher quality from the higher price of luxury brands (Huber & McCann, 1982), thus resulting in higher perceived uniqueness and conspicuousness (Parguel et al., 2016), consumers become less sensitive to the price of

the product (Amaldoss & Jain, 2005; Hwang, Ko, & Megehee, 2014). The desire for uniqueness led to a higher price of the product (Amaldoss & Jain, 2005). When the chronic desire for conspicuousness or rarity was high, manipulation of a high desire for conspicuousness or rarity mitigated the negative effect of price on the choice of a luxury brand (Hwang et al., 2014). Thus, displaying the high price of a luxury product can increase the perceived uniqueness and conspicuousness so that consumers can focus less on utilitarian features such as price.

Figure 4.3

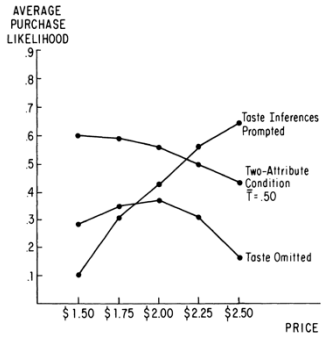
Part Worth Values of Price in Beer Conjoint Study.



Note. Figure from Huber and McCann (1982).

Figure 4.4

Effect of Omitting Taste Test Information on the Marginal Value of Price.



Note. Figure from Huber and McCann (1982).

4.7.2 Hypotheses Development

So far, it was hypothesized that priming participants with more salient price cue will increase the fluency and the subsequent valuation of price attribute, indicating higher

price sensitivity. Also, the amount of increase in the unaware condition was hypothesized to be greater than that in the aware condition. But the difference in the amount of increase between aware and unaware condition could vary depending on the luxuriousness of the product.

In the aware condition, the price display of the luxury product under examination will not increase the accessibility of the price attribute as much as the price display of the mass-market product under examination because the price display of the luxury product increases the perceived uniqueness and conspicuousness, thereby decreasing the focus on utilitarian features such as price. Thus, the difference in the magnitude of the increase in the accessibility of the price attribute between aware and unaware conditions would be larger for luxury brands than for mass-market brands.

H4: The difference in the magnitude of an increase in the accessibility of the price attribute between the aware condition and the unaware condition is larger for those shopping on the website of a luxury brand than those shopping on the website of a mass-market brand.

4.8 Price Importance to Brand Interest

4.8.1 Theoretical Background: Motivation, Goal, and Interest

As consumers place higher importance on the price attribute (i.e. become more price-sensitive), they become focused on utilitarian goals of finding a product with a reasonable price (Tauber, 1972; Schindler, 1989; Irani, & Hanzaee, 2011; Wakefield & Inman, 2003). According to Botti and McGill (2010), utilitarian goals are fundamentally different from hedonic goals in that they are instrumentally motivated by an extrinsic factor of pursuing a goal beyond the experience itself. On the other hand, hedonic goals

are terminally motivated by an intrinsic factor, viewing the experience as the goal in itself, not as a step toward the next step of a higher-end goal. For more price-sensitive consumers, it means pursuing a goal of finding a product with a reasonable price, rather than enjoying the shopping experience as a goal in itself.

These goals in the consumption context align with the goals in the education context, but before explaining the similarity between the two, one would question if it is acceptable to make an analogy between two different contexts. It is reasonable in this case because they share the same fundamental process: learning. The shopping experience involves a learning process about the brand. During shopping, consumers form a brand image in their mind through multiple encounters with the brand, where they come upon its various associations (Aaker, 1991). These various associations are stored in our memory in the form of brand knowledge as is other information in our knowledge structure in the associative network model (Keller, 1993). Teichert and Schontag (2010) further expanded this research by actually creating a knowledge structure of a specific brand using network analysis. Thus, consumers learn about the brand through various associations that they store in their memory.

In education, learners have either one of two types of goals: performance goal and learning goal (Dweck & Leggett, 1988). According to Dweck and Leggett (1988), a learner's self-conceptions direct them toward different goals. A learner's self-conception can view intelligence as either a fixed entity or a malleable quality. Viewing intelligence as a fixed entity leads to a performance goal, where the learner focuses on whether they will receive a favorable judgment on their competence. On the other hand, viewing

intelligence as a malleable quality leads to a learning goal, where they focus on enhancing their competence rather than the others' judgment of it.

These goals are similar to the goals in the consumption context. The utilitarian goal is similar to the performance goal in that shoppers/learners have a specific higher-end goal. For example, shoppers with utilitarian goals can have a higher-end goal of finding the lowest price of a certain product, and learners with performance goals can have a higher-end goal of getting a letter grade A in a certain class. Hedonic goal is similar to learning goal in that the experience of shopping or learning is the goal in itself. For example, hedonic shoppers with hedonic goal can enjoy the shopping experience even if they have not found the product with the lowest price, and learners with learning goal can enjoy the learning process itself even if they did not get an A on a certain work.

These different goals result in varying responses of the learners. According to Dweck & Leggett (1988), the performance goal leads to a maladaptive "helpless" response, where they face a deterioration of performance from avoiding challenges in the fear of receiving an unfavorable judgment. On the other hand, the learning goal leads to an adaptive "mastery-oriented" response, where they welcome challenges as a chance to enhance their competence. Directly comparing the effect of these two goals on the learner's performance, Seijts, Latham, Tasa, and Latham (2004) found out that participants assigned to the learning goal spent more time learning and performed better than those assigned to the performance goal.

This difference in learner's performance can be attributed to the varying degree of interest caused by each goal. In her summary in Educational Psychology Review, Ainley (2006) described a general consensus that views interest as involving affect (positive

activation), motivation (impulse to act), and cognition (seeking information), which are brought together by a general achievement goal. Supporting this view, Dweck and Leggett (1988) pointed out interest as one of the factors associated with each goal that affects the subsequent performance. Learners with the learning goal experience enhanced interest and determination in the face of failure and put in more effort because they regard it as a chance to learn and improve their competence. But learners with the performance goal detract from putting in more effort because they view the failure and putting in more effort as evidence of their lack of ability.

4.8.2 Hypotheses Development

Unlike studies that focus solely on satisfaction as one of the variables measured after consumers' visit to a retail store (Bloemer, & De Ruyter, 1998; Bloemer, & Odekerken-Schröder, 2002; Hunneman, Verhoef, & Sloot, 2017; Morrison, Gan, Dubelaar, & Oppewal, 2011), Jones and Reynolds (2006) included interest in their conceptual model to predict post-purchase behavior such as repatronage intentions and loyalty. They acknowledged that they did not include shopping goals in their model and recommended studying the interaction between shopping goals and retail interest. Instead of examining the interaction of the two on post-purchase behavior, the current study draws from the research in educational psychology to predict the relation between shopping goals and interest.

Before predicting the relation in the context of the current study, it should be clarified that this study uses the term 'brand interest', adapting the phrase used in Jones and Reynolds's (2006) study. They used the term 'retailer interest', defining it as "the level of interest that a consumer has in a given retail store" (Jones & Reynolds, 2006, p.

116). Since this definition reflects the interest formed after offline shopping, this paper changes the wording to 'brand interest' to reflect the interest in the brand formed after online shopping. Thus, brand interest is defined as "the level of interest that a consumer has in a given brand".

Based on the argument in the theoretical background, we can predict the relation between price sensitivity and brand interest. Price-sensitive consumers are oriented towards utilitarian goals rather than hedonic goals. These utilitarian goals are analogous to performance goals in that they focus not on the experience itself but on the high-end goal that should be achieved after the experience. For price-sensitive consumers, this means focusing not on the shopping experience itself but on finding the product at a reasonable price. Performance goals led to a lower level of interest compared with learning goals. Thus, the price-sensitive consumers with this utilitarian/performance goals would exhibit a relatively lower level of brand interest because less price-sensitive consumers with hedonic/learning goals would show heightened interest.

H5: Decreased price importance leads to higher brand interest.

4.9 Concluding Remarks

This chapter explained the theoretical framework and the rationale behind the conceptual model. To recap, semantic priming suggests that presenting a price cue on websites would activate the price concept, and this activation would spread to other concepts that are linked to the price node, increasing the conceptual fluency of price-associated concepts in later retrieval. This increase in fluency will be higher for more salient price cues in larger font size because increasing the salience of fluency cue has been known to strengthen its priming effect. Exposure to price cues both with and

without awareness will result in higher accessibility of price attribute, but the magnitude of the increase will be greater when exposed without awareness than with awareness because studies generally report stronger priming effect without awareness. This difference in the magnitude of the increase between aware and unaware conditions will be greater for luxury products because the price cue in the aware condition (i.e. price display) was shown to increase perceived uniqueness, thereby mitigating the accessibility of the price attribute. Higher accessibility will result in the priming effect of higher valuation, thus increasing the importance of price attribute, which is one of the attitudinal dimensions of price sensitivity. Because consumers with higher price sensitivity are known to have utilitarian goals which are similar to performance goals in educational psychology, they will exhibit relatively lower brand interest compared to those with lower price sensitivity.

Chapter 5: Methods

5.1 Overview

This study uses an experimental research design to examine the proposed effect of the salience of price cue on price sensitivity and the resulting brand interest. In order to develop images of a mock retail website that are used as the visual stimuli in the main study, this study is composed of three pretests and one main study. For the ease of the understanding of readers, the methods of the main study are presented before explaining how the visual stimuli were developed through several pretests (Chapter 6) because it is necessary to understand how each variable was manipulated in order to understand the purpose of each pretest. Thus, this chapter presents only the methods of the main study. Readers are briefly reminded of the research questions, after which the rationale for the specifics of the research design is outlined in detail.

5.2 Research Questions

The focal question was 1) how the salience of a price cue affects price sensitivity through enhanced fluency (accessibility of price attribute), 2) how the effect of the salience of a price cue on the accessibility of price attribute depends on the awareness involved and the luxuriousness of the brand, and 3) how this process results in brand interest. Below is a brief reminder of the conceptual model and hypotheses (Figure 4.2, Table 4.1).

Figure 4.2
Conceptual Model.

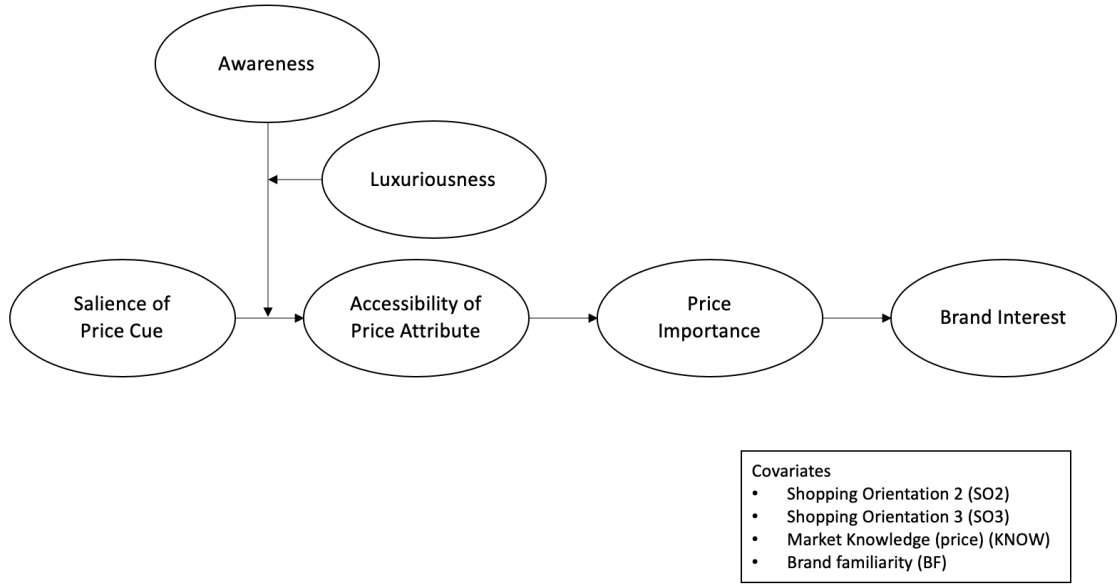


Table 4.1
Hypotheses.

	Hypothesis
H1	Providing a more salient price cue (no price cue vs. small price cue vs. large price cue) increases the accessibility of the price attribute.
H1a	Providing a more salient price cue (no price cue vs. small price cue vs. large price cue) increases the accessibility of the price attribute in aware condition.
H1b	Providing a more salient price cue (no price cue vs. small price cue vs. large price cue) increases the accessibility of the price attribute in unaware condition.
H2	Higher accessibility of the price attribute leads to higher price importance.
H3	The magnitude of an increase in the accessibility of the price attribute is larger for those exposed to banner advertising (unaware condition) than those exposed to price display (aware condition).
H4	The difference in the magnitude of an increase in the accessibility of the price attribute between the aware condition and the unaware condition is larger for those shopping on the website of a luxury brand than those shopping on the website of a mass-market brand.
H5	Decreased price importance leads to higher brand interest.

5.3 Participants and Study Design

The salience of a price cue (no price cue vs. small price cue vs. big price cue), awareness (unaware vs. aware), and luxuriousness (mass vs. luxury) are nominal variables that were manipulated in a 3x2x2 between-subjects design. The initial version of the procedure of this study was reviewed and approved by the Institutional Review Board of the University of Minnesota on January 8, 2020.

All participants were recruited online through Amazon Mechanical Turk (MTurk) for a compensation of $0.50. Those who met the sampling criteria of location (U.S.) agreed to participate in the given study after reading a recruiting material on MTurk. An exposure to any pretest could reveal the true experimental objectives of this study and thus create an experimental demand effect, the researcher prevented the participants who have taken any pretest from participating in the main study (Zizzo, 2010).

A total of 98 participants were eliminated from the data analysis either due to their failure to answer the involvement questions correctly or because their answers in an open-ended question were out of context. To be specific, participants were asked to list five attributes of a laptop that they considered important. The eliminated answers included “none, none, none, none, none”, “interesting, want, like, good, nice”, and “bag, clothes, shoes, pen, tv.” The remaining 388 participants were 50% male and 50% female, with ages ranging from 18 to 75 (M_{age} = 35.81, SD = 11.31, Mdn = 33), consisting of 77% White, 10% Asian, and 7% Black or African American; 55% with a bachelor’s degree in college (4-year), 16% with a master’s degree, and 12% with some college but no degree; and 30% earning $40,000 to $59,999, 20% $20,000 to $39,999, and 14% $60,000 to $79,999 (Appendix A).

5.4 Manipulation: Visual Stimuli

An independent variable and moderators were manipulated by presenting participants an image of a mock retail website with a real brand name and informing them that they are browsing online to shop for a handbag. Twelve stimuli were developed, each representing a cell in 3 (salience of price cue: no price cue vs. small price cue vs. big price cue) x 2 (luxuriousness: mass vs. luxury) x 2 (awareness: aware vs.

unaware) study design. Visual stimuli exhibited an image of a black handbag with a neutral design that does not explicitly signal luxuriousness so that the same bag could be used across all conditions. Figure 5.1 presents the final images that were developed through multiple pretests and were presented to the participants in the main study (see Appendix B for larger images). Saving for the next chapter the explanation for the process by which these images were developed, this chapter focuses solely on how each variable was manipulated or measured in the main study. The following is a rationale for the methods used in the manipulation of each variable.

Figure 5.1
Visual stimuli used for each of 3x2x2 condition.

5.4.1 Awareness

One of the purposes of this study was to compare the priming effect of the price cue of the product under examination and the price cue in a banner advertisement. These two types of price cues each represent the aware and unaware conditions, respectively, by varying the relevance to the context of the prime phase.

Some studies have measured awareness by directly asking the participants to recall priming events (Higgins et al., 1985; Lombardi et al., 1987). Those who could recall the priming events were interpreted as being aware of the relation between the prime and the target, and those who could not recall the priming events were interpreted as being unaware of the relation.

Other studies have manipulated awareness by varying the relevance of the prime and the purpose of the study phase (Hess, Hinson, & Statham, 2004; Finlay, Marmurek, & Morton, 2005). Hess et al. (2004) informed the participants in the aware condition that several sets of words contained prime words that are related to older people, revealing the purpose of the study phase. Similarly, Finlay et al. (2005) told participants under the intentional learning condition requiring awareness that the purpose of the priming task was to form an impression of the target stimulus, whereas those under the incidental learning condition that does not require awareness were told that the purpose of the priming task is to form an impression of an irrelevant concept.

Taking this approach, in the prime phase, the instruction was relevant to the prime in the aware condition but irrelevant to the prime in the unaware condition. Specifically, participants were told that they are shopping for a handbag in an online website. In the aware condition, the price cue was presented in the form of the price of a handbag that they are shopping for, making the prime relevant to the informed purpose of shopping for a handbag. In the unaware condition, the price cue was presented in the form of the price of Adobe Creative Cloud in a banner advertisement. These two differ in their relevance to the purpose of the priming phase, which is shopping for a handbag.

Manipulation Check. To ensure that this method of manipulation was indeed successful, this study used frequent measures of explicit memory: recall and recognition.

A recall is a more stringent measure of awareness than recognition. Anderson and Bower (1972) posit that a free recall task is composed of two processes: retrieval and recognition. Critiquing a popular strength theory that views recall and recognition as the same process but requiring different levels of strength, they propose that recall involves an additional retrieval process on top of the recognition process. For a word to be recalled, one searches for words in memory and accesses a word in the retrieval process. Then this retrieved word goes through the recognition process through which one determines if the retrieved word is the word that one was looking for. Regardless of which theory one sides with, recall is a more stringent measure whether it requires a higher level of strength or requires an additional process.

Supporting this notion that recall is a more stringent measure, studies have shown that people recall better when learning under intentional instructions (requiring awareness) than when learning under incidental instructions (not requiring awareness). For example, Monroe, Powell, and Choudhury (1986) concluded that recognition is a more appropriate measure of price awareness than recall under incidental (low-involvement) learning, which uses a low amount of attention. Similarly, participants in Dornbush and Winnick's (1967) study reported higher recall scores under intentional learning than under incidental learning.

This pattern of results is also found in a study conducted with a more real-world setting. Walsh, Kim, and Ross (2008) compared the recall and recognition score of brand awareness between brand placement within a traditional method (television) and brand

placement within a sports video game. Participants were able to recall the brand name better when they were exposed to the brand through television than through a sports video game. But the ability to recognize the brand name did not differ between two conditions.

The fact that these two conditions differed in the recall but not in the recognition score can be explained by the co-ordination hypothesis. While explaining the levels of awareness in memory, Tulving (1993) also expanded on the relationship between the level of awareness when encoding information and the level of awareness when retrieving information. He suggested through various studies that the level of awareness at retrieving information cannot be higher than the level of awareness at which the information was encoded. In other words, if a person learned a word in an unaware condition, the word can be retrieved in a task requiring the same or lower level of awareness (e.g. recognition and subliminal priming tasks) but cannot be retrieved in a task requiring awareness (e.g. recall).

These findings indicate that those primed with a price cue in the unaware condition will not be able to retrieve the information about the price cue above the level of unaware condition (i.e. recall), but that those primed with a price cue in aware condition will be able to retrieve the information both in the task requiring awareness (i.e. recall) and in the task not requiring awareness (i.e. recognition). To reiterate, if awareness is successfully manipulated, those in the aware condition will recall the price of the product better than those in the unaware condition, but the recognition accuracy will not differ between two conditions.

Measures. As a measure of recall accuracy, participants were asked to recall the price of the handbag (aware) or the subscription service of Adobe (unaware) in an open-ended question. As a measure of recognition accuracy, this study used a forced-choice method, forcing participants to recognize only one out of multiple options, rather than a single stimuli method, where they have to decide if they recognize each option. Using a forced-choice method prevents the response bias from using a single stimulus method because participants cannot simply answer that they recognize every option (Monroe et al., 1986). Thus, they were given a multiple-choice question with five options, one of them being the correct answer.

Participants completed the free recall task before the forced-choice recognition task. If they completed the recognition task before the recall task, they would be able to infer the cost of the product from several options presented in the recognition task. To prevent this, they were first asked to give their best guess about the price of the product (recall) and then were given several options to choose from (recognition). A participant's answer in the recall (recognition) task was coded as correct if they wrote (chose) $479.5 in small/big price cue x luxury x aware condition and $47.95 in other conditions.

5.4.2 Salience of Price Cue: no price cue vs. small price cue vs. big price cue

As delineated in Section 4.4, the salience of a price cue was manipulated by the presence and the size of the price cue. As a brief reminder, selective attention literature and the studies using the salience model of visual attention view the amount of attention as an indicator of the salience of the stimulus (Fuchs et al., 2011; Itti & Koch, 2000; McCay-Peet et al., 2012; Taylor & Fiske, 1978). Advertising literature suggested that the amount of attention can be manipulated by varying the size of a stimulus, with larger size

attracting more attention (Franken, 1925; Homer, 1995). As one of the methods of varying the size of the stimulus, the font size has been used to manipulate the salience of the stimulus (McCay-Peet et al., 2012; Shen & Urminsky, 2013; Aggarwal & Vaidyanathan, 2016).

In the no price cue condition, images did not include any price cue. The images in small and large price cue conditions included price cues: the price of the handbag in the aware condition ($47.95 for mass-market brand condition and $479.5 for luxury brand condition) and the price of Adobe's subscription service in the unaware condition ($47.95). The font size of the price cue in small price cue condition and big price cue condition was 20-point and 40-point, respectively, in a 2880x1800px image (Figure 5.1).

The specifics of the images under each condition differed for aware and unaware conditions, reflecting the fact that the price cue is presented in different forms depending on the awareness condition. The price cue in aware condition was presented in the form of the price of a handbag, whereas the price cue in unaware condition was presented in the form of the price of Adobe Creative Cloud's subscription service in an irrelevant advertisement on the website. The no price cue images under the aware condition did not display the price of the handbag, and the no price cue images under the unaware condition did not display the price of Adobe's subscription service in the advertisement and instead included a statement "Get started with Creative Cloud". Small and large price cues in the aware condition differed in the font size of the price display of the handbag; small and big price cues in the unaware condition differed in the font size of the price of Adobe's subscription service in the banner ad.

Manipulation Check. Section 5.4.1 elaborated on the relationship between recall and recognition and concluded that the aware and unaware condition will differ in the recall accuracy but not in recognition accuracy. Because recognition accuracy is not confounded by the level of awareness, the amount of attention paid to the price cue within each level of the aware and unaware condition can be measured by recognition accuracy.

If the salience of price cue is successfully manipulated, participants would show an incremental performance rate in the recognition accuracy from low to high salience. The participants in no price cue condition will show the lowest level of recognition accuracy because they were not exposed to any price cue in the first place. Participants in the small price cue condition will show a moderate level of recognition accuracy, higher than those in the no price cue condition but lower than those in the large price cue condition.

5.4.3 Luxuriousness: Mass vs. Luxury

Luxuriousness was manipulated by employing different brand names and displaying different price levels of the handbag. The images in the luxury condition displayed the Burberry brand logo on the top center of the website as well as on the handbag, and the images in the mass-market condition displayed Gap logo in the same position and did not have any brand logo printed on the handbag. In the images displaying the price of the handbags, the price levels also reflected its product category, displaying $47.95 for the mass-market condition and $479.5 for the luxury market condition.

Manipulation check. To verify if brand logos and price levels were successful in manipulating perceived luxuriousness, this study asked participants to fill out a Brand Luxury Index (Appendix C; Vigneron & Johnson, 2004). If luxuriousness is successfully manipulated, the BLI score will be lower (more luxurious) for those assigned to the luxury condition than those assigned to the mass-market condition.

5.5 Measures

5.5.1 Accessibility of Price Attribute (ACC)

As explained in Chapter 4, this study uses semantic priming to explain the effect of price cues on price sensitivity. In McNamara's (2005) book devoted to semantic priming, semantic priming is caused by a combination of semantic and associative relations. Borrowing his examples, the concepts of a dog and a goat are semantically associated based on common characteristics such as being domesticated mammals with furs. On the other hand, think of the first word that comes to your mind when you think of a dog. Many would think of 'cat' as the first word instead of a 'goat'. The relation between a dog and a cat is based on both semantic and associative relations because a dog and a cat belong to a common semantic category and also have frequently co-occurred in past experience.

This study uses a measure of associative relations, a free association task, to measure the accessibility of price-associated concepts rather than using a measure of semantic relations such as a lexical decision task. Associative relations are more appropriate in this study setting because it is highly unlikely that any consumers will control their thoughts to only purely semantic relations during shopping. In reality, consumers conjure up various concepts during shopping.

For example, imagine that you are shopping for a shirt. Upon encountering a green *shirt*, you start thinking about which *pants* in your closet will go well with this shirt. This is mainly semantic relations because *shirts* and *pants* belong to the same semantic category of 'clothing'. But your thoughts are not limited to these semantic relations. The color of the shirt reminds you of a *forest* that you went camping last week, or your coworker, *Avery*, who frequently wears this color. These are associative relations since the *shirt* is semantically related neither to the *forest* nor *Avery* but is rather frequently associated with them in your past experience.

In fact, a typical free association task to measure associative relations is similar to a task used by Berger and Fitzsimons (2008) to measure the fluency of a concept. In a typical free association task, participants are exposed to one of the words in a pair of words with associative relations (e.g. *needle*), after which they are shown the other word (e.g. *thread*) and asked to write the first word that comes to their mind (Zeelenberg, Shiffrin, & Raaijmakers, 1999; Salmon, Shimamura, Butters, & Smith, 1988). Primed construct is said to be more accessible if the *needle* is the first that comes to their mind.

Similarly, Berger and Fitzsimons (2008) measured the fluency of the color orange by asking the participants to list several brands or types of products, starting from the first thing that comes to their mind. The accessibility of the concept was calculated by the primacy of output. If a brand associated with orange color (e.g. Reese's) was listed as a second entry, the accessibility score was coded as two for this participant. The higher the accessibility, the lower the score. The primed construct of the color orange is said to be more accessible if participants thought of brands or types of products faster the day

before Halloween (abundant orange priming cues) than a week after Halloween (few orange priming cues).

These two methods are similar in that the participants are exposed to a cue and are asked to list word(s) that first comes to their mind. The only difference is that the typical free association task tests a specific pair of words by giving them a cue (the other word). Berger and Fitzsimons's (2008) method, on the other hand, allows variations in the listed words itself and focuses on if the primed concept of the color orange is present in the words. This study uses Berger and Fitzsimons's method because it directly measures the accessibility of a concept based on associative relations rather than defining a specific pair of words, which would require additional rigorous pretests to prove that the pair are indeed associated with each other.

In this study, two measures were taken in relation to this variable to prevent the possibility of participant's expected experimental objectives correlating with true experimental objectives (Zizzo, 2010). Filling out the price sensitivity measures right before the accessibility task can give participants a lead that the researchers are interested in the price attribute of a handbag. If they are asked to list important attributes of a handbag (accessibility measure) after being asked to rate the importance of five attributes of a handbag (price importance measure), including the price attribute, they may construe the task objective as asking for the importance of price attribute, correspondingly providing an 'ideal' answer with high accessibility for price-associated concepts.

Thus, this measure asked for a list of important product attributes when shopping for a laptop, not for a handbag that was presented in the visual stimuli. In fact, it would be absurd to ask for the importance of five attributes of a handbag and then ask them to

list five important attributes of a handbag. In addition, this variable was measured in an ostensibly separate study to make it seem irrelevant to the price sensitivity measures.

Measure. Adopting Berger and Fitzsimons's (2008) method, participants were asked to list the first thing that comes to their mind. They were instructed to list five things that are important to them when buying a laptop. The primacy of output was coded as the order of the text entry in which participants indicated any concepts associated with price. For example, if they mentioned price in the second entry, it was coded as two. If they did not mention any price-associated concepts, it was coded as six. Below is a complete list of participants' responses that were coded as price-associated concepts (Table 5.1).

Table 5.1
A Comprehensive List of Participants' Responses Coded as Price-associated Concepts.

price	lowest price	low price	value	cost	low cost
amount	prize	the price	prices	offer	the cost

5.5.2 Price Sensitivity (PS): Price Importance (PI)

A common method of measuring price sensitivity includes a self-reported measure of price importance, conjoint analysis, and price elasticity (Kalra & Goodstein, 1998). In conjoint analysis, participants evaluate profiles of a product varying on the levels of each variable (DeSarbo, Ramaswamy, & Cohen, 1995; Moore, Louviere, & Verma, 1999). Based on this evaluation, researchers are able to calculate the importance weight that each variable holds for a participant. Price elasticity measures the change in consumer demand in response to the change in price (Fan, & Hyndman, 2011; Gordon, Goldfarb, & Li, 2013). Conjoint analysis and price elasticity are not applicable in the

current study because this study focuses not on the price levels but on the salience of price cue itself. Thus, price importance was used as a measure of price sensitivity.

On top of price importance, price search is included as an additional measure of price sensitivity. According to Shankar et al. (1999), price sensitivity is composed of two attitudinal dimensions: price importance and price search. The price importance was included in the conceptual model because it could be explained by the valuation in the priming effect, but the price search was not included because it could not be explained by the priming effect. If the proposed priming effect of price cues on the price sensitivity is indeed due to the underlying mechanism of fluency, fluency will be able to predict price importance but not price search.

Measure. A self-reported measure of price importance was adopted from Kalra and Goodstein's study (1998). Participants rated the importance of five attributes on a nine-point scale (1=not at all important, 9=very important) (Appendix D). The relative importance of price was calculated by dividing the rating for the price attribute by the sum of all ratings. A measure of price search was adapted from two items in Urbany, Dickson, and Kalapurakal's (1996) study (Appendix E). The statements were changed into the future tense, and their wording reflected the shopping scenario in the current study. Participants indicated the degree to which they agree with each statement on a five-point scale (1=strongly disagree, 5=strongly agree). Scores for two items were averaged to represent price search behavior.

5.5.3 Brand Interest (BI)

This construct was measured using scales developed by Jones and Reynolds (2006) (Appendix F). Participants indicated the degree to which they agree with each of

five items on a seven-point scale (1=strongly disagree, 7=strongly agree). After reversing one item, the scores were averaged to represent brand interest.

5.5.4 Control Variables

Shopping orientation (SO2 & SO3). An individual's predisposition to price sensitivity may vary and could thus confound the relationship between the salience of price cue and the price sensitivity. The shopping orientations of consumers are largely known to be either economic, which is more utilitarian and focused on problem-solving, or recreational, which is more hedonic (Rohm & Swaminathan, 2004). The utilitarian value was positively associated with price sensitivity whereas the hedonic value was not significantly positively associated with price sensitivity (Irani & Hanzaee, 2011). Since these chronic tendencies can influence price sensitivity, they were included as a control variable (Appendix G).

Specifically, two factors of shopping motives were included: 'physical store characteristics' (SO2: item 6-9) and 'information use in planning and shopping' (SO3: item 10-13). These are two factors from Rohm and Swaminathan's (2004) study that extracted a total of four shopping motives in an effort to develop a typology of online consumers. 'Physical store characteristics' is a factor with higher factor loadings out of the two factors that measure hedonic value. 'Information use in planning and shopping' is a factor with lower factor loadings out of the two factors that measure economic value, but this factor was chosen over the other motive because information use is closely related to price search, where consumers are searching for price information.

Measure. Shopping orientation was measured by two factors from Rohm and Swaminathan's (2004) shopping motives. Physical store characteristics (SO2) and

information use in planning and shopping (SO3) each had four items that were measured on a seven-point scale (1=strongly disagree, 7=strongly agree). Scores for four items were averaged to represent each variable.

Market knowledge (price) (KNOW). Knowledge of the market price influences price sensitivity, particularly price search behavior (Urbany et al., 1996). The knowledge of the market price was one of the variables under the human capital construct that explained the largest amount of variance in price search behavior (Urbany et al., 1996). It was positively associated with price search behavior, indicating that knowledgeable consumers are more efficient in searching for prices, or that they are more knowledgeable because they search for prices. Either way, it is possible that knowledge of market price may confound the price sensitivity variable.

Measure. The measure of market knowledge (price) was adopted from Urbany et al.'s (1996) study. It included three items measured on a five-point scale (1=strongly disagree, 5=strongly agree) (Appendix H). Scores for three items were averaged to represent market knowledge of price.

Brand familiarity (BF). When a brand sent out moderately consistent messages, consumers mentioned more diverse associations about the brand and exhibited more positive responses and brand attitudes when the brand was familiar but not when the brand was unfamiliar (Delgado-Ballester, Navarro, & Sicilia, 2012). Their study concluded that familiar brands should use moderately consistent messages to evoke the interest of consumers but that this strategy would not work for unfamiliar brands. Thus, it is possible that participants who are more familiar with a brand are more prone to show heightened interest in the brand. To control for this confounding effect of brand

familiarity, participants indicated their familiarity with the brand that they have seen in the visual stimuli on a seven-point scale (1=not at all familiar, 7=very familiar).

5.6 Procedure

Participants were told that they will partake in two ostensibly separate studies. Study 1 included the visual stimuli, price sensitivity measures, the brand interest measure, and involvement questions. It was framed as a part of a product evaluation study, where researchers examine consumer behavior in an online shopping environment. The purported purpose of Study 2 was to gain insight into the consumers' decision-making process in a different product category. It included a measure of the accessibility of the price attribute.

After reading the consent form, participants were directed to Study 1. They were told that they were browsing online to shop for a handbag and that the presented image was a screenshot of a website that they were browsing through. Immediately following this scenario, participants were randomly assigned to one of 12 conditions and were exposed to the corresponding visual stimulus. After looking at the image of the given online website for at least seven seconds, they answered questions about price importance (PI), price search (SEARCH), and brand interest (BI). They then filled out involvement questions to verify if they had paid attention to the important details of this study. These questions asked them to identify the product that they were shopping for (correct answer: handbag) and whether they were shopping online or offline (correct answer: online).

Participants were directed to Study 2 and were reminded that the purpose of this section is to gain insight into the consumers' decision-making process in a different

product category. After being instructed to list the first thing that come to their mind, they listed five things that are important to them when buying a laptop (ACC).

Finally, they answered questions about control variables (SO2, SO3, BF, KNOW) and several demographic questions. They were debriefed with a survey code that they may enter on the Amazon MTurk website to indicate that they will not withdraw their response and to receive compensation for their participation.

Chapter 6: Pretests

6.1 Overview

This chapter presents three pretests that were conducted prior to the main study to develop the visual stimuli that were used in the main study, which was presented in the previous chapter (Figure 5.1). A brief overview explains the role of each pretest and the common recruiting method, after which the methods and results of each pretest are outlined in detail.

The scenario presented to participants was consistent throughout the data collection: browsing a mock retail website to shop for a handbag. To develop the visual stimuli of this mock retail website, pretests were conducted to select the product information that are presented on the website. Pretest 1 selected four product attributes of a handbag whose information is provided on the website. Pretest 2 measured consumers' reference price, which was used as a guide to set the prices that are displayed on the website. Pretest 3 confirmed the manipulation of three variables that are used in the main study.

All participants were recruited online through Amazon Mechanical Turk (MTurk) for a compensation of $0.20 for Pretest 2 and $0.30 for Pretest 1 and 3. Those who met the sampling criterion of location (U.S.) agreed to participate in the given study after reading a recruiting material on MTurk. Because exposure to one pretest could reveal the true experimental objectives of this study and thus create an experimental demand effect,

the researcher ensured that each participant cannot take more than one pretest (Zizzo, 2010).

6.2 Pretest 1: Selection of Product Attributes

6.2.1 Purpose and Study Design

The purpose of Pretest 1 was to select four product attributes whose information is provided on the mock retail website in the main study. Rather than including only the price cue in the visual stimuli, providing information about these additional four product attributes was necessary for two reasons. First, price sensitivity is measured by the relative importance weight in the main study, which requires that participants rate the importance of multiple attributes to calculate the relative importance weight of price (Kalra & Goodstein, 1998). In addition, it ensures external validity in that online websites, especially high-quality sellers, provide sufficient information that signals their quality in order to alleviate the information asymmetry typically associated with online commerce (Manes & Tchetchik, 2018; Mavlanova, Benbunan-Fich, & Koufaris, 2012).

In this pretest, the researcher first collected a list of attributes on the websites of multiple brands, after which participants rated the importance of each attribute. Four attributes with the highest importance rating were selected as the final product attributes that are presented to the participants in the main study along with the price cue.

6.2.2 Participants

A total of 57 MTurk workers participated in Pretest 1. They were females between the ages of 23 and 70 years (M_{age} = 43.82, SD = 13.31, Mdn = 40), consisting of 84% White, 7% Asian, and 5% Black or African American; 40% with a bachelor's degree in college (4-year), 19% with some college but no degree, 14% high school

graduate, and 14% with a master's degree; and 25% earning $20,000 to $39,999, 21% $40,000 to $59,999, and 18% $100,000 or more (Appendix I).

6.2.3 Measure

Participants were asked to rate the importance of each attribute on a nine-point scale (1=not at all important, 9=very important). Following the importance weight measure used by Kalra and Goodstein (1998), the perceived importance weight of each attribute was calculated by dividing the importance rating for the attribute by the sum of the importance ratings of all eighteen attributes.

6.2.4 Procedure

Pretest 1 collected a comprehensive list of product attributes of bags that are frequently provided on online websites. The list was collected by browsing through websites of seven brands from various price ranges (i.e. Gap, Tory Burch, Chloe, Balenciaga, Burberry, Dior, Chanel). Eliminating overlapping items resulted in a final list of eighteen attributes including color, material, the origin of the product, style suggestions, and so on. (Table 6.1, Appendix J).

After reading the consent form that included the purpose of the study, an approximate time frame, and a confidentiality agreement, participants were asked to rate the importance of each eighteen attributes on a nine-point scale. They were debriefed with a survey code with the option of withdrawing their response by not entering this code on Amazon MTurk.

6.2.5 Results

Four attributes with the highest average importance weights were selected as the final attributes whose product information is provided in the main study. 'Color' was the

attribute with the highest average importance weight (Table 6.1), but this attribute was not included in the main study because the color of a product is evident from the image of the product in the visual stimuli. Instead, the next four attributes with the highest average importance weights were selected as the final attributes that would be displayed in the visual stimuli in the main study. These attributes were 'dimensions', 'carry', 'adjustable shoulder', and 'material'.

The additional attributes written down by the participants did not present any new attribute of substantial importance. 'Price' and 'durability' (projected age of a handbag) were mentioned at least five times. However, price is already one of the variables that is manipulated in the main study, and 'durability' is not a measurable attribute of a handbag that can be communicated through words in an online setting.

Table 6.1

Descriptive Statistics of Attribute Importance Weights.

Attribute	Importance Weight	
	M	SD
Color	0.0797	0.0168
Dimensions	0.0765	0.0162
Carry	0.0716	0.0209
Adjustable shoulder strap	0.0687	0.0225
Material	0.0685	0.0189
Compartment	0.0674	0.0158
Pocket	0.0658	0.0172
Shoulder strap drop	0.0626	0.0181
Closure	0.0603	0.0198
Hardware	0.0538	0.0224
Care	0.0496	0.0190
Handle drop	0.0488	0.0210
Lining	0.0481	0.0209
Silhouette	0.0467	0.0218
Removable shoulder strap	0.0428	0.0215
Made in	0.0385	0.0234
Embossed brand lettering	0.0284	0.0203
Dust bag included	0.0223	0.0178

Note. Listed by the highest to lowest average importance weight.

6.3 Pretest 2: Setting the Price Level for the Price Cue

6.3.1 Purpose and Study Design

As explained in the previous chapter, price cues in the main study are presented to participants in one of two forms: as the price of a handbag in the aware condition and as the price of Adobe's subscription service in the unaware condition. While we can choose to adopt the existing set price of any handbag displayed on the brand website when setting a price level for these products, it is important to consider the consumers' reference price because deviations from the reference price can cause uncertainties and consequently influence the amount of attention allocated to the price.

Past studies have shown that the uncertainty of a stimuli affects the amount of attention it receives. According to Hogarth, Dickinson, Austin, Brown, and Duka (2008), one research stream suggests that animals attend to signals with the least uncertainty, whereas another research stream posits that animals attend to signals with uncertainty because it indicates that they need to take further learning of those signals to be able to predict the outcome. Regardless of which research stream one sides with, the uncertainty of the price level of the price cue in the visual stimuli can confound the recall and recognition accuracy.

To control for the confounding effect of uncertainty on attention, Pretest 2 aims to find out the reference price that a consumer holds for each price cue.

6.3.2 Participants

A total of 120 MTurk workers participated in Pretest 2. They were 59% male and 41% female between the ages of 24 and 69 years (M_{age} = 39.97, SD = 11.42, Mdn = 40), consisting of 83% White and 8% Black or African American; 50% with a bachelor's

degree in college (4-year), 27% with a master's degree, and 11% with some college but no degree; and 27% earning $20,000 to $39,999, 24% $40,000 to $59,999, and 21% $60,000 to $79,999 (Appendix K).

6.3.3 Measure

Two common measures of reference price are fair price and expected price (Lowe & Alpert, 2007). These two constructs may seem similar, but they actually measure different concepts. Fair price refers to the price that consumers think is acceptable or justifiable, whereas expected price refers to the price at which consumers believe the actual market price is formed (Rajendran, 2009). Garbarino and Slonim (2003) distinguished these two constructs and demonstrated that the fair price is lower than the expected price across varying levels of other conditions.

Studies have shown that the context should determine the choice of a reference price measure as an effective predictor of outcomes (Garbarino & Slonim, 2003; Lowe & Alpert, 2007). For example, the predictive power of each measure of reference price depended on the way the outcome variable was framed (Garbarino & Slonim, 2003). Specifically, when the outcome variable, perceived expensiveness, was framed at a market-level, participants' assessment of this variable was effectively predicted by fair price, which was not affected by a personal-level factor such as product category desirability. When the outcome variable, demand, was framed at a personal-level, assessment of this variable was predicted by reservation price, which was affected by the personal-level factor.

A particular context that is relevant to the current study is whether consumers have sufficient knowledge about the product under assessment. Lowe and Alpert (2007)

demonstrated that the fair price was a better predictor of purchase intention for innovative products, for which consumers do not have past experience of observed price to determine the expected price. On the other hand, the expected price was a better predictor of purchase intention for existing products, for which consumers have accumulated sufficient information about the expected market price.

Applying these findings to the current study, the measure of the reference price for a handbag and Adobe's subscription service should differ depending on the consumers' past experience with the product. The expected price is a better measure of a reference price for a handbag since a handbag is an existing product with which consumers have sufficient experience. The fair price is a better measure of a reference price for Adobe's subscription service because relative to a handbag, Adobe Creative Cloud is used by only specific users that need access to various apps and software for photography, video, design, etc. ("Adobe Creative Cloud", n.d.). Similar to innovative products, it is unlikely that general consumers outside of this industry will have an accurate estimate of its price.

As measures of fair price and expected price, this study uses instruments from Lowe and Alpert's (2007) study. They are open-ended questions asking participants, "What is your best estimate of a fair price for this product?" and "What do you expect to pay for this product?" (in dollars, numbers only).

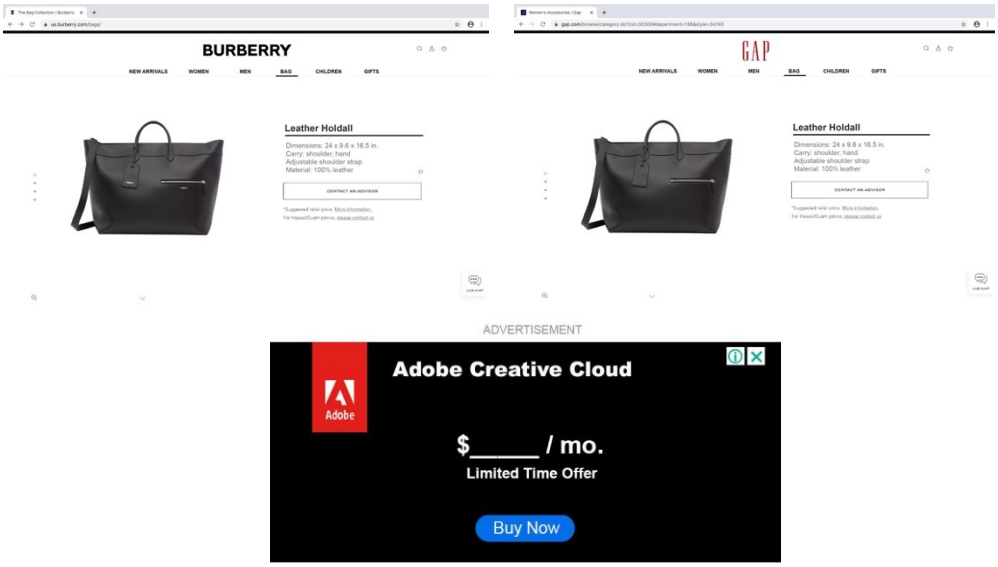
6.3.4 Procedure

Participants first read the consent form. It informed them of the purpose of this study, the overall process, an approximate time frame, and a confidentiality agreement. They clicked the next button to indicate their willingness to participate. They were

randomly assigned to one of three price cues: the price of a handbag from a luxury brand (BagL), the price of a handbag from a mass-market brand (BagM), or the price of Adobe Creative Cloud (Adobe). They were exposed to the corresponding image from Figure 6.1 and were asked to indicate their fair price and expected price. They answered demographic questions and were debriefed with a survey code, which they may choose to enter on Amazon MTurk to receive compensation or discard to withdraw their response.

Figure 6.1

Images Presented to Participants in Pretest 2.



6.3.5 Results

The assumption of normality was violated for both fair price and expected price. Other than the skewness statistics of BagM that were slightly above two, the skewness statistics of other conditions were higher than three and even as high as 5.85 (Table 6.2). Similarly, the lowest kurtosis value was 4.75, and the kurtosis of Adobe's expected price was as high as 33.08. QQ-plots lead to the same conclusion, with multiple data points deviating from the 95% confidence band (Figure 6.2).

The assumption of homogeneity of variance was violated for both fair price and expected price. The ratio of the largest variance to the smallest variance was unacceptable for both fair price (918.5745) and expected price (4231.125).

Due to the violation in assumptions, this study used the bootstrapping method in StatKey to create 15000 resamples to calculate the 95% confidence interval of the mean reference price for each price cue. The 95% confidence intervals for Adobe's fair price, BagM's expected price, and BagL's expected price were (45.76, 1599.23), (47.75, 92.45), and (115.20, 484.79), respectively (Table 6.3). As expected, the mean expected price of BagL (115.20, 484.79) is significantly higher than that of BagM (47.75, 92.45).

More importantly, Adobe's bootstrapping results support the previous argument that the fair price is a more appropriate measure of the reference price for Adobe because general consumers do not have sufficient experience with the price of its product. Adobe has such a wide range of confidence intervals for both the fair price (45.76, 1599.23) and the expected price (46.74, 2345.03). It also has a huge standard error for both the fair price (493.12) and the expected price (729.61), which is more than 30 (fair price) or 65 (expected price) times higher than that of BagM. This indicates that participants had no firm grasp of Adobe's subscription service. Therefore, the fair price was used as a reference price for Adobe's subscription service (Adobe), and the expected price was used as a reference price for the price of a handbag (BagM and BagL).

It was argued that the price of the price cues should be within the range of the consumers' reference price to control for the confounding effect of uncertainties. Therefore, the price of the handbag in the mass-market brand should be within (47.75, 92.45); the price of the handbag in the luxury brand should be within (115.20, 484.79);

the price of Adobe's subscription service should be within (45.76, 1599.23). In addition to this criterion, it had to be ensured that the prices do not vary in the number of digits and the number itself. Studies on the dichotic digit test report a decrease in the recognition performance when participants had to recognize a greater number of digits (Strouse & Wilson, 1999a, 1999b). Since the number of digits can influence the recall and recognition accuracy, it should be controlled across the price levels of bags and Adobe's subscription service.

The final price of each price cue was set following the guideline of these criteria. The prices were within the corresponding 95% confidence interval, had the same number of digits, and had the same numbers itself. The only difference was the position of the decimal point. The price of the handbag in the luxury brand was set at $479.5. The price of the handbag in the mass-market brand was set at $47.95. The price of Adobe's product was also set at $47.95.

Table 6.2
Descriptive Statistics of Reference Price.

	Fair Price									
	n	mean	sd	median	min	max	range	skew	kurtosis	se
Adobe	40	577	3153.44	20	1.99	20000	19998.01	5.84	32.98	498.6
BagM	40	83	104.05	48	5	500	495	2.31	5.26	16.45
BagL	40	145.9	219.44	69.5	5	1200	1195	3.05	10.91	34.7

	Expected Price									
	n	mean	sd	median	min	max	range	skew	kurtosis	se
Adobe	40	826.67	4733.29	20	1.99	30000	29998.01	5.85	33.08	748.4
BagM	40	67.97	72.77	45	2	350	348	2.15	4.75	11.51
BagL	40	259.27	645.23	90	4	3999	3995	4.92	25.34	102.02

Figure 6.2
QQ-plots of Reference Price.

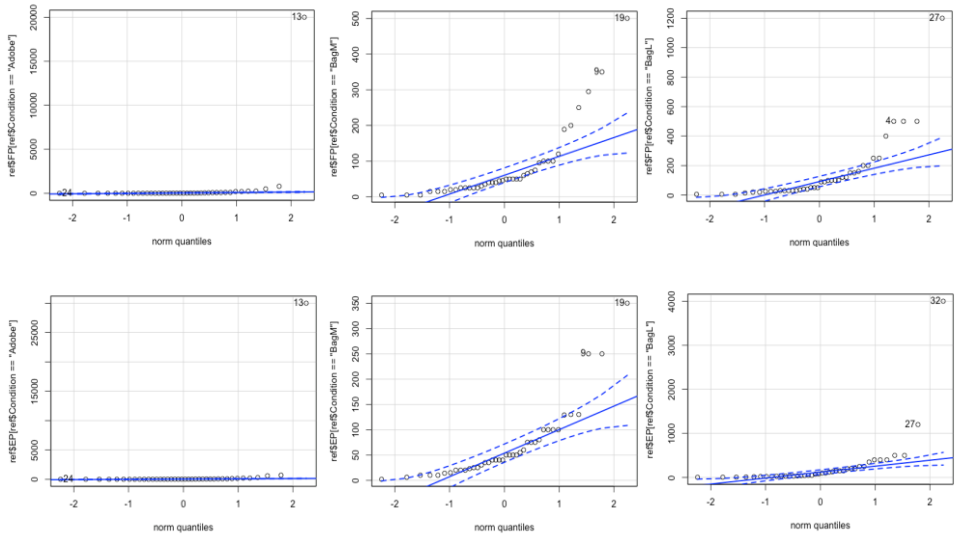


Table 6.3
Bootstrapping Results of Reference Price.

	Fair Price			
	mean	2.5%	97.5%	SE
Adobe	577.34	45.76	1599.23	493.12
BagM	82.80	54.51	117.16	16.12
BagL	146.20	87.61	220.70	34.14
	Expected Price			
	mean	2.5%	97.5%	SE
Adobe	822.25	46.74	2345.03	729.61
BagM	68.02	47.75	92.45	11.47
BagL	257.97	115.20	484.79	100.36

6.4 Pretest 3: Stimuli Development

6.4.1 Purpose and Study Design

The purpose of Pretest 3 was to confirm the manipulation of three variables in twelve visual stimuli, each representing a cell in 3 (salience of price attribute: no price cue vs. small price cue vs. big price cue) x 2 (awareness: aware vs. unaware) x 2 (luxuriousness: mass vs. luxury) between-subjects study design.

The manipulation check of the salience of price cue, awareness, and luxuriousness was conducted in a separate pretest (Pretest 3) rather than in the main study to prevent mental fatigue. After a task that demands more on working memory, participants show a decrease in the frontocentral positivity (P3a), which is a brain's reaction to novel stimuli (Massar, Wester, Volkerts, & Kenemans, 2010). Moreover, participants are less flexible in a task that requires them to adapt to new rules, and they also need more time in planning a move (van der Linden, Frese, & Meijman, 2003). These studies infer that mental fatigue can deter the participant's cognitive processing in a subsequent task and possibly interrupt the priming effect. To prevent the potential mental fatigue from answering a long list of questions, the manipulation check of three variables was conducted prior to the main study.

6.4.2 Participants

39 participants were eliminated from the data analysis due to their incorrect answers to two involvement questions. Remaining 457 participants were 59% male and 41% female between the ages of 19 and 77 years (M_{age} = 39.48, SD = 12.60, Mdn = 35), consisting of 79% White, 9% Black or African American, and 7% Asian; 47% with a bachelor's degree in college (4-year), 24% with a master's degree, and 11% with some college but no degree; and 25% earning $20,000 to $39,999, 23% 40,000 to $59,999, and 15% $150,000 or more (Appendix L).

6.4.3 Manipulation Check: Visual Stimuli

The rationale behind the choice of each measure was delineated in Section 5.4 when describing the main study. As a brief reminder for the readers, below is a recap of the predicted results if the visual stimuli are successful in manipulating each variable.

Awareness (AWA). If the manipulation of awareness is successful, participants in the aware condition will outperform those in the unaware condition on the recall accuracy. But these two groups will not differ in their recognition accuracy.

Salience of Price Cue (SAL). The recognition accuracy will show an incremental performance from no price cue, small price cue, to large price cue.

Luxuriousness (LUX). Participants exposed to the luxury brand will rate the brand as more luxurious (lower BLI score) than those exposed to the mass-market brand.

6.4.4 Procedure

Participants first read a consent form informing them of the purpose of this study, the overall procedure, an approximate time frame, and a confidentiality agreement. They clicked a button to proceed to the next stage to indicate their willingness to participate in this study. They were randomly assigned to one of the conditions in a 3x2x2 study design and were exposed to the corresponding visual stimulus of a mock retail website. Following this stimulus was a free recall task, asking them to recall the price of the handbag (aware) or the price of the limited offer in Adobe's banner advertisement (unaware). After typing their answer to this open-ended question, they completed a forced-choice recognition task, asking them to recognize the price of the handbag (aware) or the price of the limited offer in Adobe's banner advertisement (unaware). Participants rated the luxuriousness of the brand that they have seen on the Brand Luxury Index (Vigneron & Johnson, 2004). They answered two involvement questions, asking them for which product they were shopping for (correct answer: handbag) and whether they were shopping offline or online (correct answer: online). Finally, they answered demographic

questions and were debriefed with an option to withdraw their response by not entering the survey code on Amazon MTurk.

6.4.5 Results

Manipulation Check of Awareness (AWA). A two-sample proportion test was conducted to test for the difference in the recall and recognition accuracy. As predicted, recall accuracy was higher in the aware condition than in the unaware condition, whereas the recognition accuracy did not differ between the two conditions. Manipulation of awareness was confirmed.

Out of participants who were shown the price cue, the proportion of participants who correctly recalled the price (recall accuracy) was higher in the aware condition than in the unaware condition (p_{aware}=0.4412, $p_{unaware}$=0.3378, X^2=3.1217, df=1, p=.0386) (Table 6.4). The proportion of participants who correctly recognized the price (recognition accuracy) did not differ significantly between aware and unaware conditions (p_{aware}=0.8353, $p_{unaware}$=0.7905, X^2=0.7734, df=1, p=.3792). The recognition accuracy was above the chance level of 0.2 (one correct answer out of five choices) in both aware (p=.8353, X^2=428.82, df=1, p<.0001) and unaware condition (p=.7905, X^2=322.58, df=1, p<.0001).

Table 6.4
Contingency Table of Participants Who Correctly Recalled/Recognized the Price.

		No price cue			Yes price cue (small & big)		
		TRUE	FALSE	%	TRUE	FALSE	%
Recall	Aware	1	75	1.32%	75	95	44.12%
	Unaware	1	62	1.59%	50	98	33.78%
Recognition	Aware	3	73	3.95%	142	28	83.53%
	Unaware	7	56	11.11%	117	31	79.05%

Manipulation Check of Salience of Price Attribute (SAL). A binominal logistic regression was conducted with the salience the price attribute as an independent variable and recognition accuracy as a binary dependent variable (1=TRUE, 0=FALSE). Manipulation of SAL was successful in creating a varying probability of accurately recognizing the price, representing the degree to which participants allocated attention to the price cue.

Recognition accuracy exhibits the predicted pattern. It was 7.19% for those who were not exposed to any price cue, 74.84% for those exposed to small price cue, and 87.73% for those exposed to big price cue (Table 6.5). The overall effect of SAL was statistically significant (Wald X^2=46.9, df=2, p<.0001). Being exposed to a small price cue compared to no price cue increased the odds (log odds) of accurately recognizing the price by 38.3692 (3.6473) (p<.0001). Being exposed to a large price cue compared to no price cue increased the odds (log odds) of accurately recognizing the price by 92.2350 (4.5243) (p<.0001). Additional hypotheses test confirmed that there is a statistically significant difference between the coefficient of the small price cue and that of the large price cue (Wald X^2=8.0, df=1, p=.0046). The overall model fits significantly better than the null model with only no price cue condition (X^2 = 54.727, df = 2, p<.0001).

Table 6.5
Contingency Table of Participants Who Correctly Recognized the Price.

		No price cue			Small price cue			Large price cue		
		True	False	Accuracy	True	False	Accuracy	True	False	Accuracy
Recognition	Aware	3	73	3.95%	65	19	77.38%	77	9	89.53%
	Unaware	7	56	11.11%	51	20	71.83%	66	11	85.71%
	Total	10	129	7.19%	116	39	74.84%	143	20	87.73%

Manipulation Check of Luxuriousness (LUX). A two-sample t-test was conducted to verify if participants exposed to the luxury brand (Burberry) rated the brand as more luxurious than those exposed to the mass-market brand (Gap).

The data does not show an extreme violation of normality assumption, with the highest absolute value of skewness being 0.31 and that of kurtosis being 1.48. Though the mass-market condition showed several outliers in the boxplot (Figure 6.3) and several deviations from the 95% confidence band (Figure 6.4), it does not show extreme deviation from normality. The assumption of homogeneity of variance was not violated. The ratio of the largest variance to the smallest variance was 1.7722.

The two-sample t-test confirmed that those in the luxury condition rated the brand as more luxurious (lower BLI score) than those in the mass-market condition (M_{luxury}=4.0239, M_{mass}=4.3456, t=-5.0189, df=453.93, p<.0001; Table 6.6).

Table 6.6
Descriptive Statistics for BLI Score.

	n	mean	sd	median	min	max	range	skew	kurtosis	se
Mass	225	4.35	0.66	4.35	2.5	6.7	4.2	0.15	1.48	0.04
Luxury	232	4.02	0.71	4.1	1.9	5.5	3.6	-0.31	-0.28	0.05

Figure 6.3
Boxplots of BLI Score.

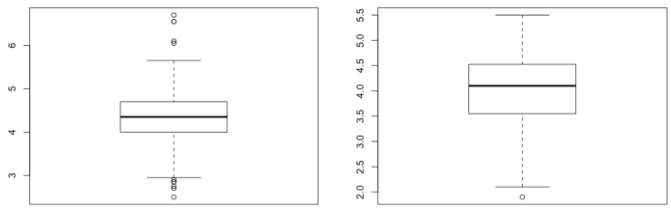
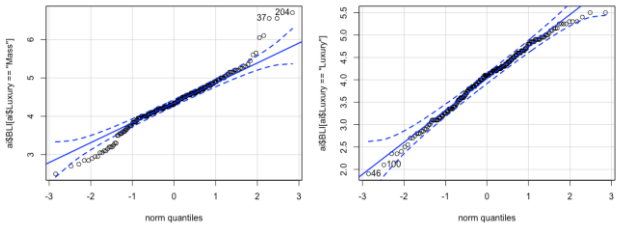


Figure 6.4
QQ-plots of BLI Score.



6.5 Concluding Remarks

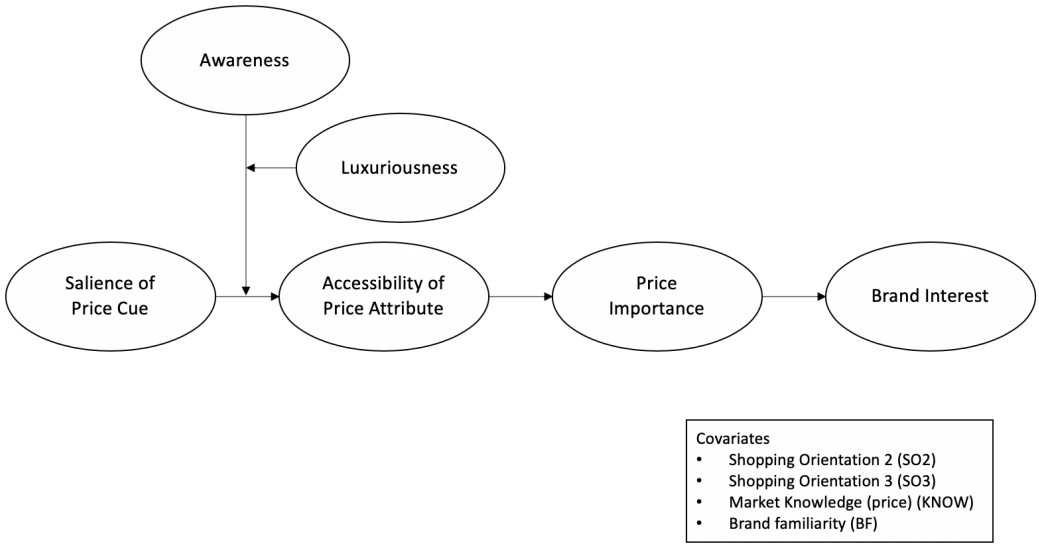
This chapter has explained the process by which the visual stimuli were developed. The product attributes were selected through Pretest 1, and the price was set through Pretest 2. Pretest 3 confirmed the manipulation of three variables in the visual stimuli. The main study was conducted using the visual stimuli developed through the pretests described in this chapter. The following chapter describes the results of the main study, whose methods were described in the previous chapter.

Chapter 7: Results

7.1 Data Analysis

In preliminary analyses, an exploratory factor analysis (EFA) was conducted to assess the reliability of constructs (Section 7.2). A 3x2x2 ANOVA and a simple mediation analysis were conducted to gain deeper insight into each component of the conceptual model (Figure 4.2). A 3 (salience of price cue) x 2 (awareness) x 2 (luxuriousness) ANOVA was conducted to determine the effect of the salience of price cue (SAL) on the accessibility of price attribute (ACC) (Section 7.3). A simple mediation analysis was conducted to test the mediation of price importance (PI) between the accessibility of price attribute (ACC) and brand interest (BI) (Section 7.4). After understanding these specific relationships, moderated mediation analyses were conducted to test the whole model (Section 7.5).

Figure 4.2
Conceptual Model.



7.2 Preliminary Analyses

An exploratory factor analysis (EFA) was conducted to assess the reliability of constructs with more than three items: brand interest (BI), shopping orientation 2 (SO2), shopping orientation 3 (SO3), and market knowledge (price) (KNOW). Discriminant validity was assessed using the inter-item correlation. All preliminary analyses were carried out in SPSS.

The first run of EFA confirmed the factorability of data through the Kaiser-Meyer-Olkin Measure of sampling adequacy above 0.6 (0.828) and a significant Bartlett's Test of Sphericity (X^2=2491.343, df=120, p<.001). None of the communalities extraction values were below 0.3 (Table 7.1). Four factors had initial Eigenvalues above one.

The second run of EFA used the Oblim rotation with a designated number of four factors. None of the values in the component correlation matrix were greater than 0.5, implying orthogonal relation (Table 7.2). Thus, the varimax rotation was used in the third run of EFA.

The third run of EFA using varimax rotation extracted four factors: Factor 1 (BI_1, BI_2, BI_3, BI_4, BI_5), Factor 2 (BI_5, SO_6, SO_7, SO_8, SO_9, SO_13), Factor 3 (KNOW1, KNOW2, KNOW3), and Factor 4 (SO_11, SO_12, SO_13) (Table 7.3). Factor 1 was a reliable construct of Brand Interest (BI), with Cronbach's alpha of 0.818. Due to the low initial Cronbach's alpha of 0.64, BI_5 and SO_13 were deleted from Factor 2. After the elimination of these two items, Factor 2 became a reliable construct of Shopping Orientation 2 (SO2), with final Cronbach's alpha of 0.803. Factor 3 was a reliable construct of Product Knowledge (price) (KNOW), with Cronbach's alpha

of 0.784. Factor 4 was a reliable construct of Shopping Orientation 3 (SO3), with Cronbach's alpha of 0.677.

All the items were loaded on their original construct except for SO_13, which was predicted to load on Factor 4 (Shopping Orientation 3). SO_13 initially loaded on Factor 2 (Shopping Orientation 2) but was eliminated due to low Cronbach's alpha. In addition, adding SO_13 to Factor 4 resulted in a decrease in its Cronbach's alpha to 0.455, which is indeed similar to the reliability of Shopping Orientation 3 (Cronbach's alpha = 0.52) in the study that developed this scale (Rohm & Swaminathan, 2004). Though including SO_13 in Factor 4 matched the Cronbach's alpha of the original study, this item was eliminated from the scale to ensure its internal consistency.

Finally, the absolute values of all inter-item correlations were well below 0.60, indicating that multicollinearity is not of a huge concern (Table 7.4).

Table 7.1
Communalities of the First EFA.

	Communalities	
	Initial	Extraction
BI_1	1.000	0.674
BI_2	1.000	0.798
BI_3	1.000	0.736
BI_4	1.000	0.723
BI_5r	1.000	0.611
SO_6	1.000	0.577
SO_7	1.000	0.590
SO_8	1.000	0.718
SO_9	1.000	0.548
SO_10	1.000	0.668
SO_11	1.000	0.541
SO_12	1.000	0.641
SO_13	1.000	0.350
Know_1	1.000	0.626
Know_2	1.000	0.716
Know_3	1.000	0.762

Extraction Method: Principal Component Analysis.

Table 7.2

Component Correlation Matrix of the Second EFA.

Component	1	2	3	4
1	1.000	0.025	0.230	-0.193
2	0.025	1.000	0.100	-0.298
3	0.230	0.100	1.000	-0.189
4	-0.193	-0.298	-0.189	1.000

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

Table 7.3

Rotated Component Matrix of the Third EFA.

	Factor Loading			
Scale item	1	2	3	4
BI_2	0.860			
BI_4	0.808			
BI_1	0.774			
BI_3	0.751			
BI_5	0.599	-0.499		
SO_8		0.803		
SO_6		0.747		
SO_7		0.742		
SO_9		0.608		
SO_13		0.570		
Know_3			0.848	
Know_2			0.796	
Know_1			0.773	
SO_10				0.802
SO_12				0.785
SO_11				0.698

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization (rotation converged in 5 iterations.)

Table 7.4

Descriptive Statistics and Inter-item Correlation.

	M	SD	Cronbach's alpha	Correlation Coefficient							
				ACC	PI	PS	BI	SO2	SO3	KNOW	BF
Accessibility of price attribute	3.73	2.15	-	-							
Price importance	0.22	0.04	-	-0.21	-						
Price search (PS)	4.33	0.71	-	0.00	0.18	-					
Brand interest (BI)	4.60	1.25	0.82	0.05	-0.21	0.03	-				
Shopping orientation 2	4.34	1.39	0.80	0.15	-0.32	-0.18	0.37	-			
Shopping orientation 3	5.53	0.94	0.68	0.03	0.11	0.50	0.16	0.06	-		
Market knowledge (price)	3.76	0.78	0.78	0.08	-0.20	0.28	0.22	0.26	0.36	-	
Brand familiarity	5.18	1.62	-	0.07	-0.1	0.12	0.21	0.23	0.18	0.28	-

7.3 Salience of Price Cue to Accessibility of Price Attribute: SAL>ACC

A 3 (salience of price cue) x 2 (awareness) x 2 (luxuriousness) ANOVA was conducted in RStudio. The data did not exhibit extreme violation of normality assumption, with the highest absolute value of skewness being 0.71 and that of kurtosis being 1.86. The assumption of homogeneity of variance was not violated (Levene's Test $F(11, 376)=0.3962$, $p=.9573$).

Table 7.5 and Table 7.6 report descriptive statistics of the dependent variable, the accessibility of the price attribute. It is important to reiterate at this point that a lower score means that participants listed price-associated concepts earlier than other concepts and that the price attribute was more accessible. The omnibus null hypothesis was rejected, suggesting that at least one group's mean accessibility score is different from other scores ($F(15, 372)=1.841$, $p=.0279$). Rejecting H4, ANOVA analysis revealed an insignificant three-way interaction between salience of price cue, awareness, and luxuriousness ($F(2, 372)=0.4732$, $p=.6234$) (Table 7.7). It also revealed two significant two-way interactions between salience of price cue and awareness ($F(2,372)=3.3916$, $p=.0347$) and between awareness and luxuriousness ($F(1,372)=6.4540$, $p=.0115$) (Table 7.7).

Table 7.5
Descriptive Statistics of Each Cell.

			n	mean	sd	median	skew	kurtosis	se
Unaware	Mass	No price cue	29	3.14	2.08	2	0.4	-1.61	0.39
		Small price cue	30	4	2.29	5.5	-0.38	-1.78	0.42
		Big price cue	33	3.42	2.14	3	0.19	-1.74	0.37
	Luxury	No price cue	31	3.35	2.23	3	0.16	-1.83	0.4
		Small price cue	36	3.94	2.22	5	-0.3	-1.79	0.37
		Big price cue	34	4.44	2.05	6	-0.71	-1.33	0.35
Aware	Mass	No price cue	32	4.34	2.06	6	-0.6	-1.46	0.36
		Small price cue	31	4.03	2.04	4	-0.41	-1.49	0.37
		Big price cue	33	3.91	1.99	4	-0.18	-1.66	0.35
	Luxury	No price cue	34	3.76	2.24	5	-0.18	-1.86	0.38
		Small price cue	34	3.15	2.15	2.5	0.31	-1.68	0.37
		Big price cue	31	3.13	2.09	3	0.34	-1.64	0.38

Table 7.6
Marginal Means and Grand Mean of the Accessibility of Price Attribute.

Marginal Means			
SALIENCE OF PRICE CUE	No price cue	Small price cue	Big price cue
	3.6667	3.7710	3.7405
AWARENESS	Unaware	Aware	
	3.7358	3.7179	
LUXURIOUSNESS	Mass	Luxury	
	3.8138	3.6450	

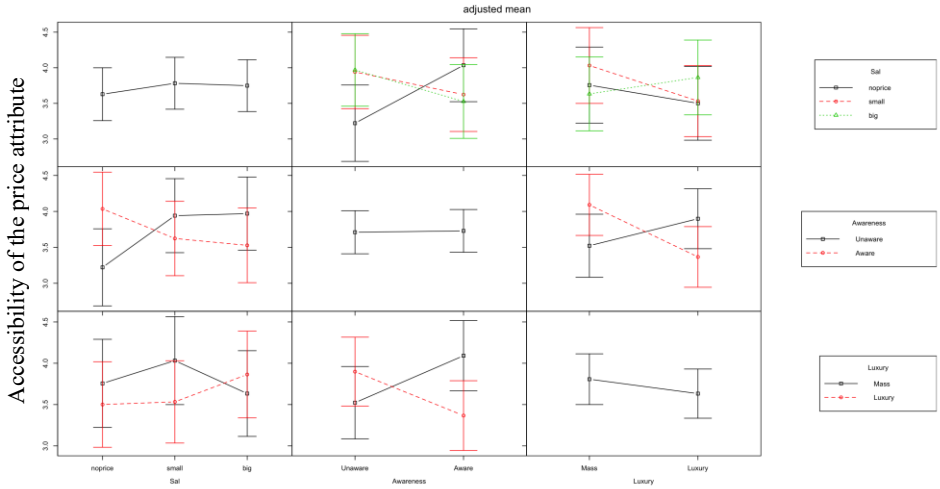
Grand Mean
3.7268

Table 7.7
Three-way ANOVA Table.

Predictor	Sum of Squares	*df*	*F*	*p*
(Intercept)	40.72	1	9.0960	0.0027
Salience of price cue (SAL)	1.65	2	0.1840	0.8320
Awareness (AWA)	0.03	1	0.0071	0.9327
Luxuriousness (LUX)	2.79	1	0.6224	0.4306
Shopping Orientation 2 (SO2)	32.91	1	7.3501	0.0071
Shopping Orientation 3 (SO3)	0.03	1	0.0067	0.9350
Market knowledge (price) (KNOW)	0.74	1	0.1659	0.6840
Brand familiarity (BF)	1.47	1	0.3279	0.5673
SAL:AWA	30.37	2	3.3916	0.0347
SAL:LUX	8.80	2	0.9832	0.3751
AWA:LUX	28.89	1	6.4540	0.0115
SAL:AWA:LUX	4.24	2	0.4732	0.6234
Residuals	1665.38	372		

First, we look at the significant two-way interaction between the salience of price cue (SAL) and awareness (AWA). The interaction plot in the middle of the first column in Figure 7.1 suggests that the accessibility of the price attribute does not vary to a meaningful degree between aware condition and unaware condition in small and big price cue. However, compared with the no price cue condition, presenting price cues, either small or big, seemed to increase the accessibility of price attribute in the aware condition and decrease the accessibility in the unaware condition. These observations concur with the result of post hoc analysis.

Figure 7.1
Interaction Plots of Salience of Price Cue, Awareness, and Luxuriousness.



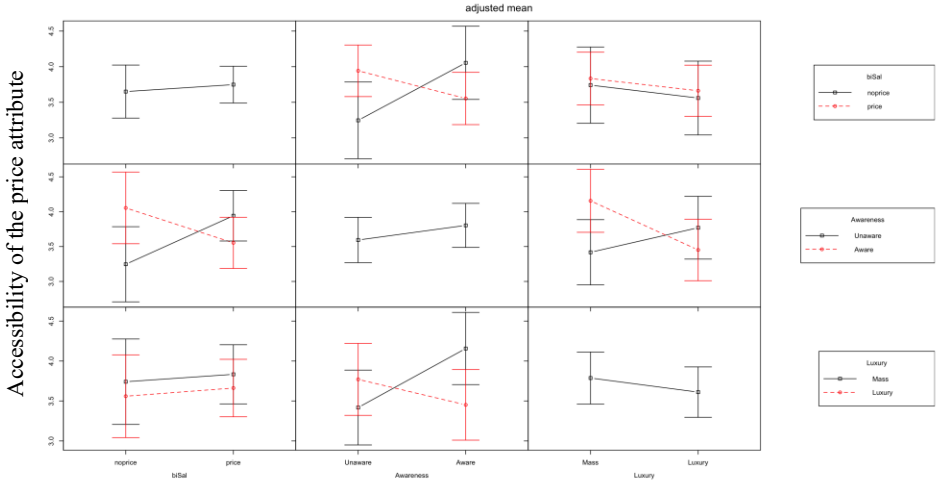
As a post hoc analysis of the two-way interaction between SAL and AWA, contrast analysis was conducted because the degree of freedom was two. A set of orthogonal contrasts was defined, one comparing the no price cue group and a combined group of small and large price cues, and another comparing the small price cue group and the large price cue group. Supporting the previous observation of interaction plots, the first contrast was significant ($F(1, 372)=6.7240$, $p=.0099$), and the second contrast was

not significant (F(1, 372)=0.0554, p=.8140). In other words, the difference in the accessibility of the price attribute between aware and unaware conditions varied depending on whether the participants were shown the price cue, not on whether they were shown the small price cue or the large price cue.

To better understand the significant first contrast, the small price cue group and the large price cue group were combined to be compared with the no price cue group (biSAL: no price cue vs. price cue). The interaction plot in the middle of the first column in Figure 7.2 suggests that 95% confidence intervals of aware and unaware conditions overlap more under the price condition than under the no price condition. The line also intersects, with an increase in the accessibility of price attribute from no price cue to price cue for those in aware condition (H1a partially supported), but a decrease in the accessibility of price attribute from no price cue to price cue for those in unaware condition (H1b and H3 rejected). In other words, exposure to a price display of a product under examination (aware) increased the fluency of the price concept, but the price of an irrelevant product in a banner advertisement (unaware) decreased the fluency of the price concept, contrary to the prediction in H1b. The effect size of the two levels of biSAL (no price cue vs. price cue) was small in both aware (Cohen's d=0.2340) and unaware (Cohen's d=0.3331) conditions.

Figure 7.2

Interaction Plots with Two Levels of Salience of Price Attribute.



Next, we look at the significant two-way interaction between awareness (AWA) and luxuriousness (LUX). In the interaction plot at the bottom of the middle column in Figure 7.1, 95% confidence intervals of mass-market and luxury conditions overlap more under the unaware condition than under the aware condition. It also exhibits two intersecting lines, suggesting that the effect of awareness on the accessibility of price attribute depends on the luxuriousness of the brand.

This plot demonstrates that for the mass-market brand, the price attribute was more accessible in the unaware condition than the aware condition, whereas for the luxury brand, it was more accessible in the aware condition than in the unaware condition. In other words, compared with displaying only relevant information such as the price of the product under examination, displaying a banner advertisement of an irrelevant brand increased the accessibility of the price attribute for the mass-market brand, but it decreased the accessibility for the luxury brand. The effect size of awareness

was small for both the mass-market brand (Cohen's d=0.2703) and the luxury brand (Cohen's d=0.2728) (Table 7.8).

Table 7.8
Effect Size.

Effect	eta. Squared
SAL	0.0009
AWA	0
LUX	0.0016
SO2	0.0184
SO3	0
KNOW	0.0004
BF	0.0008
SAL:AWA	0.017
SAL:LUX	0.0049
AWA:LUX	0.0162
SAL:AWA:LUX	0.0024

7.4 Accessibility of Price Attribute to Price Sensitivity to Brand Interest: ACC>PS>BI

To test the effect of the accessibility of price attribute (ACC) on brand interest (BI) through the mediating role of price sensitivity (PS), a simple mediation analysis was conducted in SPSS, using 5000 resamples from model 4 in PROCESS macro (Hayes, 2018). PROCESS macro uses bootstrapping and Ordinary Least Squares (OLS) regression, which is neither worse nor better than the maximum likelihood model of SEM (Hayes, 2017).

Following the recommended practice of Rucker, Preacher, Tormala, and Petty (2011), the interpretation of the results avoided the term 'full mediation' and did not adopt the common practice used in the causal steps approach (Baron & Kenny, 1986) that requires a significant total effect in order to test the indirect effect.

7.4.1 Price importance (PI)

The results support the mediating role of price importance (PI) between the accessibility of price attribute (ACC) and brand interest (BI). The signs of *a* and *b* concur with the predictions (Figure 7.3, Table 7.9, Table 7.10). The sign of *a* is negative, suggesting that the more accessible a price attribute is (lower score), the more importance weight one puts on the price attribute (H2 supported). The sign of *b* is negative, meaning that those who put more importance weight on the price attribute are estimated to be less interested in the brand that they were exposed to (H5 supported).

The significant *a* coefficient implies that two cases that differ by one unit in the accessibility of price attribute (ACC) are estimated to differ by 0.1629 on price importance (PI) (p=.0006). The significant *b* coefficient suggests that two cases that have the same level of accessibility of price attribute (ACC) but that differ by one unit in price importance (PI) are estimated to differ by 0.1130 on brand interest (BI) (p=.0274).

The indirect effect was significant (0.0184, 95% CI=(0.0003, 0.0413)). However, the total effect was not significant (*c*=-0.0130, p=.7835) and nor was the direct effect (*c'*=-0.0314, p=.5112). The significant indirect effect suggests that those with lower accessibility of the price attribute were, on average, 0.0184 units higher in brand interest, as a result of lower accessibility of the price attribute leading to lower price importance, which results in higher brand interest.

Figure 7.3
Simple Mediation Model: ACC>PI>BI.

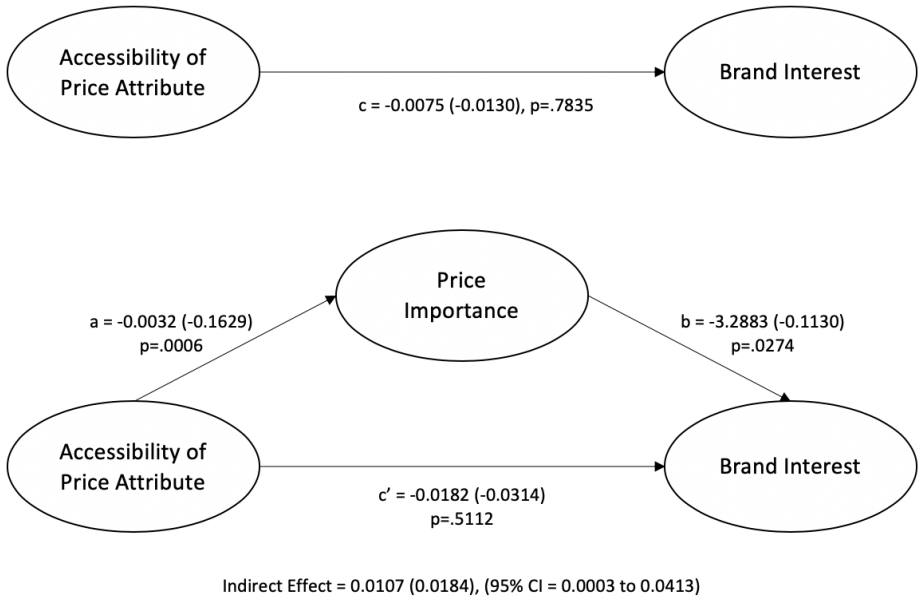


Table 7.9
Descriptive Statistics of Each Effect in Simple Mediation Analysis.

Effect	Coefficient	Standardized coefficient	95% CI		p-value	se
			Low	High		
a	-0.0032	-0.1629	-0.0051	-0.0014	0.0006	0.0009
b	-3.2883	-0.1130	-6.2081	-0.3685	0.0274	1.4850
c	-0.0075	-0.0130	-0.0615	0.0464	0.7835	0.0274
c'	-0.0182	-0.0314	-0.0727	0.0363	0.5112	0.0277
Indirect	0.0107	0.0184	0.0003	0.0413		0.0062

Table 7.10
Model Coefficients for Simple Mediation Analysis.

		Consequent											
		M (PI)							Y (BI)				
Antecedent		Coefficient	Standardized coefficient	95% CI		*p*	*SE*		Coefficient	Standardized	95% CI	*p*	*SE*
				Low	High						Low	High		
X (ACC)	a	-0.0032	-0.1629	-0.0051	-0.0014	0.0006	0.0009	c'	-0.0182	-0.0314	-0.0727	0.0363	0.5112	0.0277
M (PI)		-	-	-	-	-	-	b	-3.2883	-0.113	-6.2081	-0.3685	0.0274	1.485
C1 (SO2)	*f1*	-0.0079	-0.2562	-0.0109	-0.0049	0.0000	0.0015	*g1*	0.2588	0.2886	0.1691	0.3485	0	0.0456
C2 (SO3)	*f2*	0.0088	0.1924	0.0043	0.0133	0.0001	0.0023	*g2*	0.1614	0.1213	0.0294	0.2935	0.0167	0.0672
C3 (KNOW)	*f3*	-0.0104	-0.1899	-0.0161	-0.0048	0.0003	0.0029	*g3*	0.0922	0.0577	-0.0747	0.2591	0.2782	0.0849
C4 (BF)	*f4*	0.0003	0.0115	-0.0023	0.0029	0.8160	0.0013	*g4*	0.0789	0.1022	0.0045	0.1534	0.0378	0.0379
Constant	*i1*	0.2515		0.2232	0.2799	0.0000	0.0144	*i2*	2.6026		1.4994	3.7058	0	0.5611
		R2=0.1726 F(5, 382)=15.9324, p<.0001							R2=0.1796 F(6, 381)=13.9015, p<.0001					

Note. Refer to Table 4.2 for the use of acronyms.

7.4.2 Additional Measure of Price Sensitivity: Price Search (SEARCH)

Price search behavior is another attitudinal dimension of price sensitivity (Shankar et al., 1999), but it was not included in the conceptual framework because only price importance could be explained by the priming effect. If the proposed increase in price sensitivity is in fact due to the priming effect, the accessibility of the price attribute will be able to predict the price importance, which is explicable by the priming effect, but not the price search behavior, which is inexplicable by the priming effect.

Results are consistent with the prediction. In the previous section, the accessibility of price attribute was able to predict price importance. A simple mediation analysis of SEARCH as a mediator between ACC and BI revealed that the accessibility of the price attribute was not able to predict price search behavior (a=.0063, p=.8817) (Figure 7.4). Nor could the price search predict brand interest (b=.0077, p=.8921). Thus, the increase in price sensitivity could be explained by enhanced fluency due to the priming effect.

Figure 7.4
Simple Mediation Model: ACC>SEARCH>BI.

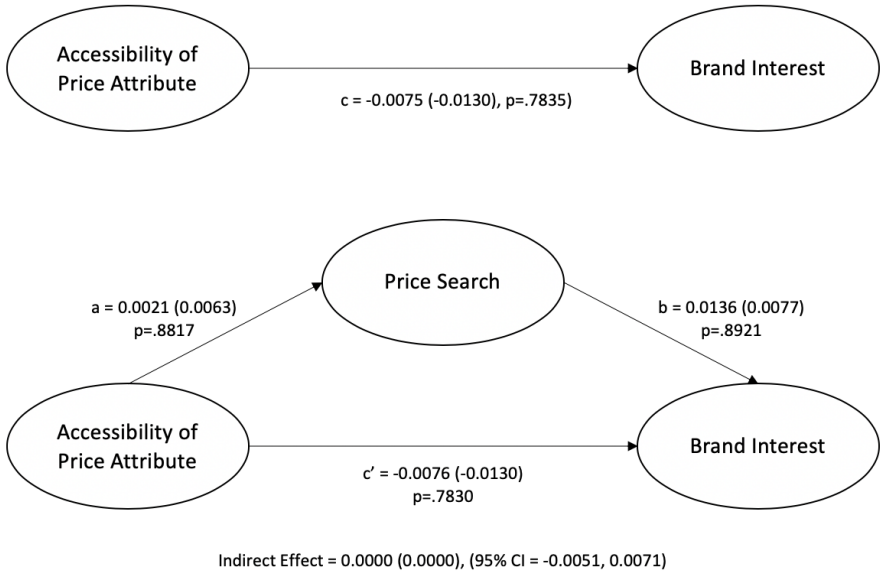


Table 7.11

Descriptive Statistics of Each Effect in Simple Mediation Analysis (SEARCH).

Effect	Coefficient	Standardized coefficient	95% CI		p-value	se
			Low	High		
a	0.0021	0.0063	-0.0255	0.0297	0.8817	0.0140
b	0.0136	0.0077	-0.1834	0.2106	0.8921	0.1002
c	-0.0075	-0.0130	-0.0615	0.0464	0.7835	0.0274
c'	-0.0076	-0.0130	-0.0616	0.0464	0.7830	0.0275
Indirect	0.0000	0.0000	-0.0051	0.0071		0.0028

Table 7.12

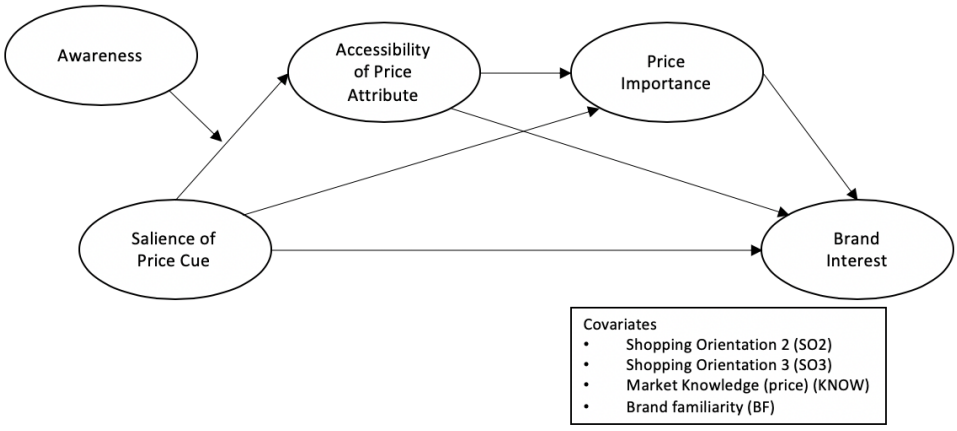
Model Coefficients for Simple Mediation Analysis (SEARCH).

		Consequent											
		M (SEARCH)						Y (BI)					
Antecedent		Coefficient	Standardized coefficient	95% CI		*p*	*SE*		Coefficient	Standardized	95% CI	*p*	*SE*
				Low	High						Low	High		
X (ACC)	a	0.0021	0.0063	-0.0255	0.0297	0.8817	0.0140	c'	-0.0076	-0.0130	-0.0616	0.0464	0.7830	0.0275
M (SEARCH)		-	-	-	-	-	-	b	0.0136	0.0077	-0.1834	0.2106	0.8921	0.1002
C1 (SO2)	*f1*	-0.1372	-0.2687	-0.1818	-0.0926	0.0000	0.0227	*g1*	0.2866	0.3196	0.1953	0.3780	0.0000	0.0465
C2 (SO3)	*f2*	0.3379	0.4459	0.2713	0.4045	0.0000	0.0339	*g2*	0.1279	0.0961	-0.0185	0.2743	0.0866	0.0744
C3 (KNOW)	*f3*	0.1588	0.1746	0.0744	0.2431	0.0002	0.0429	*g3*	0.1243	0.0778	-0.0438	0.2924	0.1469	0.0855
C4 (BF)	*f4*	0.0361	0.0820	-0.0022	0.0743	0.0648	0.0195	*g4*	0.0774	0.1003	0.0022	0.1527	0.0438	0.0383
Constant	*i1*	2.2651		1.8419	2.6882	0.0000	0.2152	*i2*	1.7447		0.8037	2.6856	0.0003	0.4786
		R2=0.3299							R2=0.1691					
		F(5, 382)=37.6133, p<.0001							F(6, 381)=12.9218, p<.0001					

7.5 Entire model

Based on the findings of Section 7.3 and 7.4, a moderated serial mediation analysis was conducted with two levels of the salience of price cue (biSAL: no price cue vs. price cue) as an independent variable, awareness as the only moderator, the accessibility of the price attribute and price importance as mediators, and brand interest as the dependent variable (Figure 7.5). Data analysis used model 83 in the PROCESS macro. The 95% confidence interval for the index of moderated serial mediation included zero, providing no evidence of a moderated serial mediation (-0.0131, 95% CI=(-0.0376, -0.0002)) (Table 7.13).

Figure 7.5
Moderated Serial Mediation Analysis.



Furthermore, a moderated mediation analysis was conducted without brand interest, using model 7 in the PROCESS macro (Figure 7.6). The 95% confidence interval for the index of moderated mediation did not include zero, providing evidence of a moderated mediation (0.0039, 95% CI=(0.0006, 0.0084)) (Table 7.13). In other words, the mediation of the effect of the salience of price cue (biSAL) on price importance (PI)

through the accessibility of the price attribute (ACC) was moderated by the awareness (AWA) involved.

Probing for the moderated mediation effect revealed findings consistent with the results in Section 7.3 and 7.4. In the aware condition, the conditional indirect effect of biSAL on PI through ACC was 0.0015. The positive sign indicates that the participants who were shown the price of the handbag, compared to an image without any price cue, were estimated to show an increase in the price importance by 0.0015. On the contrary, in the unaware condition, the conditional indirect effect of biSAL on PI through ACC was -0.0024. The negative sign indicates that the participants who were shown the price cue in an irrelevant advertisement, compared to an advertisement without any price cue, were estimated to show a decrease in the price importance by 0.0024.

Figure 7.6
Moderated Mediation Analysis.

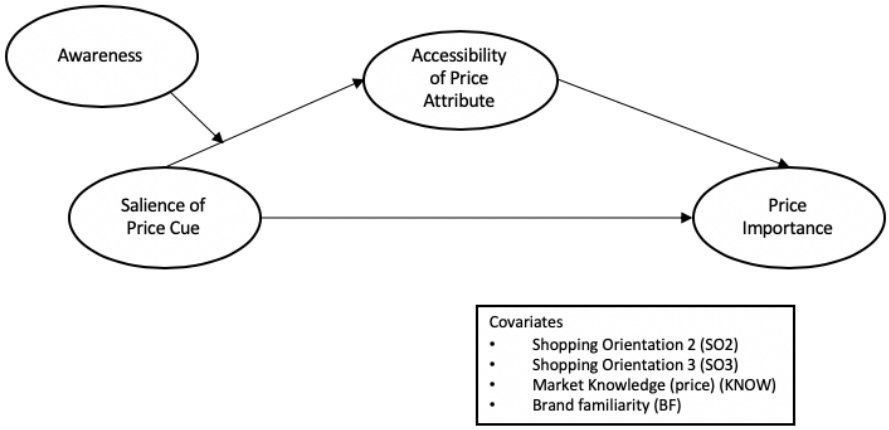


Table 7.13
Model Coefficients for Moderated Mediation Analyses.

		Model 83		Model 7	
		Coefficient	*p*	Coefficient	*p*
Predicting accessibility of price attribute (ACC)					
	biSAL	0.7331	0.0274	0.7331	0.0274
	AWA	0.8014	0.0349	0.8014	0.0349
	biSAL x AWA	-1.1860	0.0105	-1.1860	0.0105
	SO2	0.2169	0.0082	0.2169	0.0082
	SO3	0.0288	0.8147	0.0288	0.8147
	KNOW	0.0749	0.6318	0.0749	0.6318
	BF	0.0372	0.5989	0.0372	0.5989
		R2=0.0435, p=.0173		R2=0.0435, p=.0173	
Predicting price importance (PI)					
	biSal	0.0060	0.1590	0.0060	0.1590
	ACC	-0.0033	0.0005	-0.0033	0.0005
	SO2	-0.0078	0.0000	-0.0078	0.0000
	SO3	0.0090	0.0001	0.0090	0.0001
	KNOW	-0.0107	0.0002	-0.0107	0.0002
	BF	0.0004	0.7816	0.0004	0.7816
		R2=0.1769, p<.0001		R2=0.1769, p<.0001	
Predicting brand interest (BI)					
	biSal	0.0916	0.4619		
	ACC	-0.0190	0.4933		
	PI	-3.3674	0.0244		
	SO2	0.2601	0.0000		
	SO3	0.1648	0.0149		
	KNOW	0.0873	0.3061		
	BF	0.0798	0.0359		
		R2=0.1808, p<.0001			
Indirect effect					
	Unaware	0.0081	(-0.0003, 0.0241)	-0.0024	(-0.0054, -0.0001)
	Aware	-0.0050	(-0.0178, 0.0017)	0.0015	(-0.0006, 0.0042)
Index of moderated mediation					
		-0.0131	(-0.0376, -0.0002)	0.0039	(0.0006, 0.0084)

Chapter 8: Discussion

8.1 Overview

This chapter discusses the results of the previous chapter in the context of other studies. To recap, the results were consistent with the prediction in the latter part of the conceptual model from the accessibility of the price attribute to price sensitivity to brand interest, but the front part of the conceptual model showed some deviations from the prediction. The size of the stimulus did not affect the accessibility of the price attribute. Price cues in the aware condition increased the accessibility of the price attribute, partially supporting H1a, whereas those in the unaware condition decreased the accessibility of the price attribute, contradicting H1b and H3. Accordingly, luxuriousness did not moderate the interaction between the salience of the price cue and the awareness involved, rejecting H4. Enhanced accessibility of the price attribute led to higher price importance, but it was not able to predict price search behavior, supporting H2. Higher price importance subsequently led to lower brand interest, supporting H5.

The remainder of this chapter discusses each finding in relation to the other studies in the field. Section 8.2 explains the insusceptibility of fluency to the size of the price cue in terms of independence between perceptual and conceptual fluency. Section 8.3 elaborates on the positive priming effect of the price display of the product under examination, whereas section 8.4 attributes the unexpected finding of negative priming to the difference in the method used for the unaware condition between positive and negative priming. Section 8.5 reiterates the effect of consumers' price sensitivity on

brand interest and emphasizes the benefits of increasing their brand interest. Section 8.6 acknowledges the limitations of this study, after which Section 8.7 wraps up the paper with concluding remarks.

8.2 Perceptual Fluency and Conceptual Fluency as Independent Constructs

Contrary to prediction, the size of the stimulus did not incur a differential impact on the conceptual fluency. Small and big price cues did differ in the amount of attention they received in terms of recognition accuracy, confirming that they did differ in the degree of salience. But the differential degree of attention did not lead to a varying degree of conceptual fluency. It was hypothesized that more salient price cues in larger font size would increase the accessibility of the price attribute to a greater degree than less salient price cues in smaller font size. The reason behind this prediction was based on past studies where more salient fluency cues enhanced the priming effect (Bastin et al., 2013; Keane et al., 2006; Simon et al., 2018).

However, the level of salience affects perceptual fluency, not conceptual fluency. Perceptual fluency is based on the physical form of the stimulus, whereas conceptual fluency is based on the meaning of the stimulus (Keane et al., 1991; Lee & Labroo, 2004). For example, repetition priming can be based on perceptual fluency. Because participants are shown the same prime and target in repetition priming, they may recognize the word based on the form of its constituent letters without giving much thought about its meaning (Lee & Labroo, 2004).

The studies that show that more salient fluency cues lead to enhanced fluency were based on perceptual fluency, not conceptual fluency (Bastin et al., 2013; Keane et al., 2006; Simon et al., 2018). In the salient condition, the words in the studied and

unstudied group were constituted of different letters, whereas those in the less salient condition were pooled from the same pool of letters. Since this priming primarily uses the form of the words to manipulate their salience, the resulting fluency effect can be interpreted as a letter-driven visual and phonetic fluency, which is perceptual (Simon, 2018).

Considering the fact that the level of salience is associated with perceptual fluency, these findings align with the past studies that claim perceptual and conceptual fluency as independent constructs (Cabeza & Ohta, 1993; Lanska, Olds, & Westerman, 2014; Lee, 2002; Lee & Labroo, 2004; Tulving & Schacter, 1990). Tulving and Schacter (1990) elaborated on this argument by providing several pieces of evidence that claim dissociation between perceptual and conceptual priming. For example, the item-by-item correlation between the scores for the perceptual test and those for the conceptual test was zero. Moreover, Lanska et al. (2014) further illustrated that perceptual fluency was stronger when the test instruction was perceptual (verbatim recognition test) than when it was conceptual (meaning-based instruction), and vice versa for conceptual fluency.

Hence, we can conclude that varying the size of the price cue to manipulate its salience may have increased the perceptual fluency, but it does not affect the conceptual fluency. Future studies should be cautious and distinguish the methods of manipulating perceptual fluency from that of manipulating conceptual fluency. Studies manipulate conceptual fluency by making the participants focus on the semantic meaning of the prime rather than on its physical form (Lanska et al., 2014; Rajaram & Geraci, 2000; Lee & Labroo, 2004). Furthermore, instead of just manipulating the conceptual fluency, researchers can vary the “levels” of conceptual fluency by varying the distance from the

primed concept. The level of activation is known to decrease with the increase of the distance from the originally activated primed concept (Collins & Quillian, 1969). Thus, a concept that is closer to the primed concept in the semantic network will be more conceptually fluent than a concept that is further away from the primed concept. For example, the word ‘cost’ is a synonym of the primed concept ‘price’ in this study (Collins, n.d.; Dictionary.com, n.d.; Thesaurus, n.d.; Merriam-Webster, n.d.). On Thesaurus (n.d.), ‘cost’ is one of the most relevant words of the word ‘price’, but the word ‘wages’ is indicated as a less relevant synonym of the word ‘price’. Therefore, the word ‘cost’ can be used to represent a more conceptually fluent condition whereas the word ‘wages’ can be used to represent a less conceptually fluent condition.

8.3 An Evidence of Priming Effect Regardless of the Product Category

When participants were aware of the price cue presented as the price of the product under examination, presenting the price cue increased the accessibility of price attribute, which led to a higher value placed on the price attribute. Compared with when participants were not shown any price cue, exposure to the price display of a product increased the accessibility of the price attribute, thereby increasing price sensitivity.

The results support the priming effect and the underlying mechanism of enhanced fluency. Presenting the price of the product under examination activated the price concept, and this activation spread to the nearby concepts related to price. This activation residual made it easier to retrieve the price concept in a subsequent task, thereby increasing its fluency. By the valuation judgment of the priming effect, consumers allocated more importance on price because the price concept was easier to retrieve.

Though this finding supports the priming effect and its underlying mechanism of fluency, an insignificant three-way interaction requires an additional explanation in relation to a past study on price display. It was hypothesized that the magnitude of the enhanced fluency after seeing the price of a product under examination would be smaller for luxury products because consumers perceive increased uniqueness and conspicuousness after seeing the price of a luxury product, which mitigates the focus on price (Amaldoss & Jain, 2005; Hwang et al., 2014). The insignificant three-way interaction implies that the magnitude of the increase in fluency did not differ according to the luxuriousness of the brand.

One explanation for this lack of moderation could be due to the ceiling effect of the luxury brand's perceived uniqueness and conspicuousness. In Parguel et al.'s (2016) study, perceived uniqueness and conspicuousness increased after seeing the price display of premium brands but not high-end luxury brands. Their explanation was that consumers have a high baseline of perceived uniqueness and conspicuousness for high-end luxury brands because they already have brand knowledge that associates these brands with uniqueness and conspicuousness. Consequently, the perceived uniqueness and conspicuousness does not have room to increase when seeing the high price of their product. In contrary to these well-known brands, consumers do not have sufficient knowledge about premium luxury brands to infer high uniqueness and conspicuousness solely based on the existing brand knowledge. Thus, when they encounter the price display of these premium luxury brands, they infer uniqueness and conspicuousness from the high price level of their products.

This ceiling effect for high-end luxury brands may have inhibited the increase in perceived uniqueness that was predicted to lower the accessibility of the price attribute. The luxury brand presented in the visual stimuli was Burberry, which is ranked at 10 out of the top 15 most popular luxury brands online (Beauloye, 2019). It is possible that consumers have enough brand knowledge about this brand and that displaying its high price was not able to increase the already high baseline of perceived uniqueness and conspicuousness. As for the mass-market brand, it will not have a high baseline of perceived uniqueness and conspicuousness, but displaying the price will not increase the perceived uniqueness and conspicuousness because its low price level does not indicate high quality (Huber & McCann, 1982).

Another explanation could be that an increase in perceived uniqueness and conspicuousness after seeing the price of a luxury product does not affect the process of forming price sensitivity itself but rather mitigates the resulting price sensitivity as a distinct construct. As emphasized by Higgins (1996), it is crucial to distinguish the accessibility of the primed construct and the priming effect. Past studies on the mitigating effect of luxury on the price sensitivity do not distinguish whether the resulting decreased price sensitivity is due to the luxuriousness affecting the fluency with which the price concept is retrieved or only the resulting price sensitivity itself (Amaldoss & Jain, 2005; Hwang, Ko, & Megehee, 2014; Wakefield & Inman, 2003). Future studies could delve into this distinction between the accessibility of the primed construct and the priming effect when studying the relation between luxury and price sensitivity.

8.4 The Role of Awareness in Positive Priming Versus Negative Priming

When participants were unaware of the price cue, the pattern of results was completely opposite of the prediction. It was hypothesized that presenting a price cue will increase the accessibility of the price attribute and that the magnitude of this increase will be greater in the unaware condition. In contrast, processing a price cue without awareness decreased the accessibility of price-related concepts. Compared with when participants were shown a banner without any price cue, exposure to a banner advertisement with a price cue decreased the accessibility of the price attribute, thereby decreasing price sensitivity.

These findings contradict the prediction in positive priming, where participants show an increased fluency of the primed construct and assimilation to it when they are unaware of the primed stimulus. Those who do not recall any prime showed assimilation to the primed construct (Lombardi et al., 1987). The priming effect was even stronger among participants who could not recall the priming events than those who could recall (Higgins et al., 1985). Moreover, participants who were aware of the source of priming discounted the fluency as an information source compared to those who are unaware (Oppenheimer, 2004; Schwarz et al., 1991).

Rather, the current results align with the prediction of negative priming. Though scantly investigated, the negative priming literature indicates that priming can lead to a decreased fluency and result in contrast effect when participants are unaware of the primes (Fox, 1996; Griffiths & Mitchell, 2008; Raymond, Fenske, & Tavassoli, 2003). In contrast to the studies discussed above that focus on positive priming, negative priming refers to when participants show a slower reaction time, an increased error rate, and a

decreased pleasantness in response to the primes that were ignored in the study phase (Griffiths & Mitchell, 2008) and could not be recalled (Fox, 1996).

Why do these two streams of literature elicit contradictory results? A closer examination of their methods presents a possibility that it can be due to how the primes are encoded. In the positive priming studies that support the assimilation effect for unaware primes, the primes with awareness are presented in a separate trial from the primes without awareness (Higgins et al., 1995; Lombardi et al., 1987). Since they are both presented alone, the primes without awareness will receive the same amount of attention as those with awareness. The difference in the level of awareness was determined by whether participants recalled those primes (Higgins et al., 1995; Lombardi et al., 1987). The same goes for discounting fluency. Participants were shown the same primes in the encoding stage, allocating the same amount of attention (Oppenheimer, 2004; Schwarz et al., 1991; Whittlesea & Williams, 1998). Awareness, in this case, referred to whether participants were aware of the source of the prime, not whether they were aware of the primes themselves.

On the other hand, in the negative priming studies that support the contrast effect for unaware primes, the encoding stage divides the attention between the primes with and without awareness. Specifically, participants are shown two stimuli at the same time, and the instruction asks them to focus on only one of the stimuli and ignore the others (Fox, 1996; Griffiths & Mitchell, 2008; Raymond et al., 2003). For example, they are asked to focus on the image that an arrow points to (Griffiths & Mitchell, 2008), locate a particular shape (Raymond et al., 2003), or focally attend to a number instead of other

words (Fox, 1996). Attention is divided between the focally attended stimulus and the ignored stimulus.

The method of manipulating awareness in the current study is similar to the divided attention method used in the negative priming literature. Though participants were also asked to recall the primes as a measure of awareness, just like the studies that report assimilation effect for unaware primes, the encoding stage of the current study is similar to the method used in negative priming. Participants are informed that they are shopping for a handbag, directing the attention to the elements relevant to the bag and relatively less on the unaware primes of a banner ad in the corner. This divides the attention between the focused elements and the ignored primes.

As a matter of fact, divided attention is one of the explanations for the underlying process of negative priming (Tipper, 2001). According to Tipper (2001), the inhibitory mechanism of attention explains that the attention toward the unaware prime is inhibited relative to the aware prime, toward which attention is directed. This is a normal component of selective attention in that humans have to selectively attend to certain stimuli because of limited mental capacity (Johnston & Dark, 1986; Kahneman, 1973). Upon encountering the stimulus that experienced this initial inhibitory attention in the encoding phase, the same inhibitory attention is retrieved in the test phase, resulting in a decreased fluency and a contrast effect.

Moreover, the co-ordination hypothesis suggests a possibility that this difference in the encoding stage resulted in a varying degree of awareness involved in subsequent retrieval. Tulving (1993) suggested that the level of awareness at retrieving information cannot be higher than the level of awareness at which the information was encoded. If

this is true, the maximum level of awareness allowed for retrieving information in positive priming would be relatively high because primes receive undivided attention in the encoding stage. On the contrary, primes in negative priming receive divided attention in the encoding stage, resulting in a relatively lower maximum level of awareness allowed for retrieving information. Thus, even if participants could not recall the unaware primes in both positive and negative priming, the level of awareness during retrieval could have been different.

In sum, although the prediction of this study was based on the findings of positive priming literature, the results supported the findings of negative priming literature. Close scrutiny of these two streams of literature revealed that their contradictory results may be due to the method of encoding that participants employed in the priming stage. Future studies can build on this critique to examine the moderating role of awareness in fluency and priming effect by varying the amount of attention that the unaware primes receive in the encoding stage.

8.5 Increased Price Sensitivity Leads to Lower Brand Interest

As participants allocated more importance on the price attribute, they displayed lower brand interest. The rationale behind this finding was based on educational psychology literature. As consumers become more price-sensitive, allocating more importance on the price attribute, they tend to emphasize utilitarian goals rather than hedonic goals (Tauber, 1972; Schindler, 1989; Irani, & Hanzaee, 2011; Wakefield & Inman, 2003). Since shopping is a learning process that builds brand knowledge (Aaker, 1991; Keller, 1993), one can view these goals in terms of the goals often studied in educational psychology. Decreased price sensitivity puts consumers in the mindset of

hedonic/learning goals, which is typically associated with heightened interest (Dweck & Leggett, 1988).

This finding emphasizes the importance of decreasing the price sensitivity of consumers not only in the purchase phase of the shopping process but also throughout the whole process in order to keep them learning about the brand. Increasing brand interest benefits the brand because it leads to higher engagement in learning (Ainley, 2006). If consumers keep learning about the brand throughout the shopping experience, they will become familiar with the brand, which is generally associated with positive outcomes such as brand trust (Ha & Perks, 2005), satisfaction, and loyalty (Casidy & Wymer, 2015).

8.6 Limitations

One of the limitations of this study is that it was not able to control the size of the screen through which participants were exposed to the stimuli. This is a problem inherent in conducting a priming study in the real-world context. Though this method ensured that the participants are shopping in an environment that offers a similar experience to their usual online shopping experience, it does not use some of the methods frequently used in priming studies. Priming studies often use masks and fixation (Fox, 1996; Pratte & Rouder, 2009; Huber, Clark, Curran, & Winkielman, 2008). Masks are used to eliminate the visual persistence of the image in the prior trial, and fixations present plus sign "+" in the location on the screen where the target stimulus will appear.

In addition, there were difficulties in choosing the method of manipulating each variable to match the scenario of the online retail website. Though several pretests were conducted to control for other effects and also to verify a successful manipulation, the

method of priming seems to be sensitive to small differences in detail, as demonstrated in Section 8.4. Participants differed in their awareness: those in the aware condition recalled the primes better than those in the unaware condition, and they did not differ in the recognition accuracy. Despite this successful manipulation of awareness, close scrutiny of the methods in positive and negative priming revealed that the encoding stage in this study is similar to that of negative priming, which explains why the results align with the prediction of negative priming.

8.7 Concluding Remarks

This study was able to explain the price sensitivity of online consumers through the priming effect and its underlying mechanism of fluency. Positive priming explained how displaying the price of a product in awareness increased the fluency and resulted in higher price sensitivity. This effect was found among both the mass-market brands and the luxury brands. However, this does not imply that the mass-market retailers and the luxury retailers should avoid displaying the price all together. Rather, the findings of this study should be considered in conjunction with the negative outcomes of not displaying the price. Specifically, one would have to weigh the costs and benefits of displaying the price and not displaying the price. For example, as an additional finding, not displaying the price of the product and including banner advertising led to an increase in the accessibility of the price attribute for the mass-market brand. Thus, researchers should consider multiple situations and compare the costs and benefits of each situation.

On the other hand, negative priming explained how displaying the price of an irrelevant product in a banner advertisement without awareness led to decreased fluency and lower price sensitivity. Though further research is needed on the contradictory results

between the positive priming without awareness and the negative priming without awareness, this study suggests a possibility that it might be due to the difference in the level of attention that the price cue received in the encoding stage. The finding that the price display of a product led to a similar magnitude of increase in fluency for both mass-market and luxury brands requires further investigation of the relation between luxury and price sensitivity. Finally, decreasing price sensitivity proved to be important in keeping consumers' interest in the brand, prompting them to actively engage in learning about the brand, which in turn leads to positive outcomes for the brand.

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Appendix A

Sociodemographic Characteristics of Participants in the Main Study.

Characteristic	Column1	Column 2	Value
Age			
	Min		18
	Max		75
	Median		33
	Mean		35.81
	SD		11.31
	Skewness		0.98
	Kurtosis		0.35
Characteristic	**Criteria**	**n**	**%**
Gender			
	Male	194	50%
	Female	194	50%
Race			
	White	297	77%
	Black or African American	28	7%
	American Indian or Alaska Native	6	2%
	Asian	39	10%
	Native Hawaiian or Pacific Islander	1	0%
	Other	17	4%
Education			
	Less than high school degree	1	0%
	High school graduate (high school diploma or equivalent including GED)	26	7%
	Some college but no degree	45	12%
	Associate degree in college (2-year)	28	7%
	Bachelor's degree in college (4-year)	212	55%
	Master's degree	63	16%
	Doctoral degree	5	1%
	Professional degree (JD, MD)	8	2%
Income			
	Less than $10,000	23	6%
	$10,000 to $19,999	24	6%
	$20,000 to $29,999	38	10%
	$30,000 to $39,999	40	10%
	$40,000 to $49,999	62	16%
	$50,000 to $59,999	65	17%
	$60,000 to $69,999	27	7%
	$70,000 to $79,999	28	7%
	$80,000 to $89,999	14	4%
	$90,000 to $99,999	21	5%
	$100,000 to $149,999	29	7%
	$150,000 or more	17	4%

Appendix B

12 images of visual stimuli

Figure B1

Aware: Luxury: No price cue

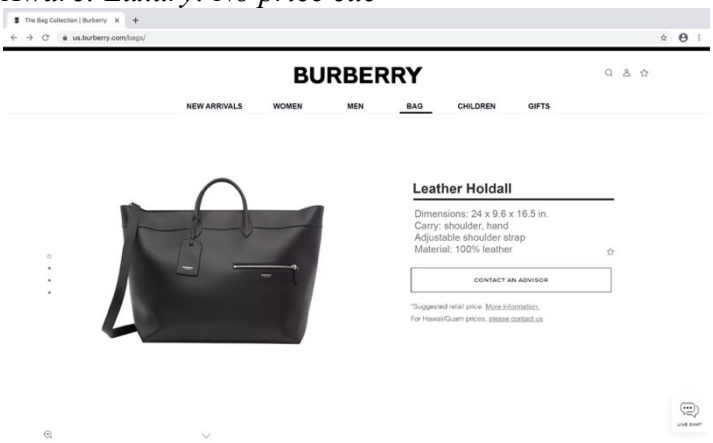


Figure B2

Aware: Luxury: Small price cue

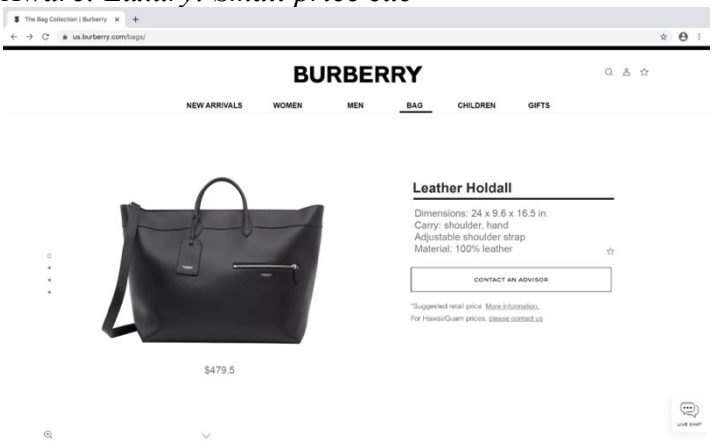


Figure B3

Aware: Luxury: Large price cue

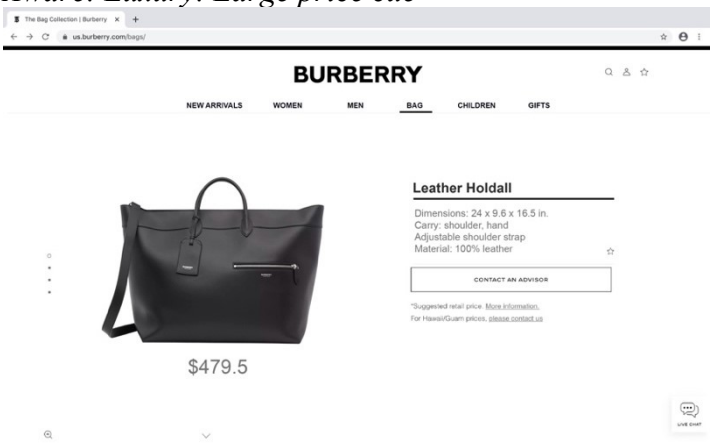


Figure B4

Aware: Mass: No price cue

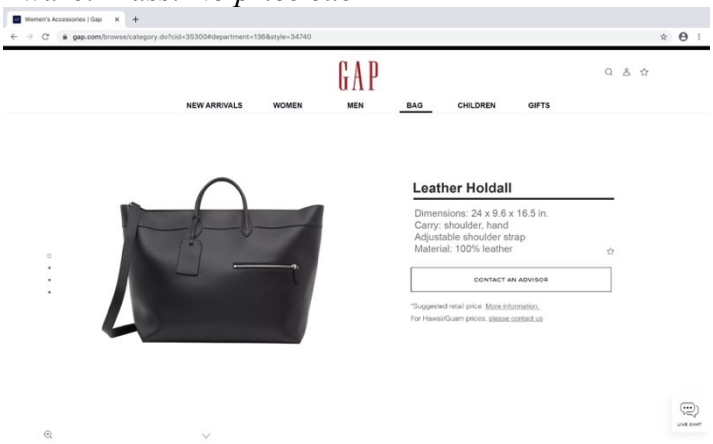


Figure B5

Aware: Mass: Small price cue

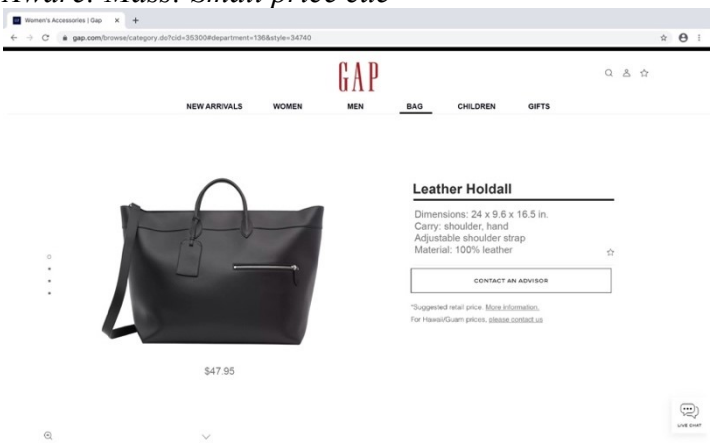


Figure B6

Aware: Mass: Large price cue

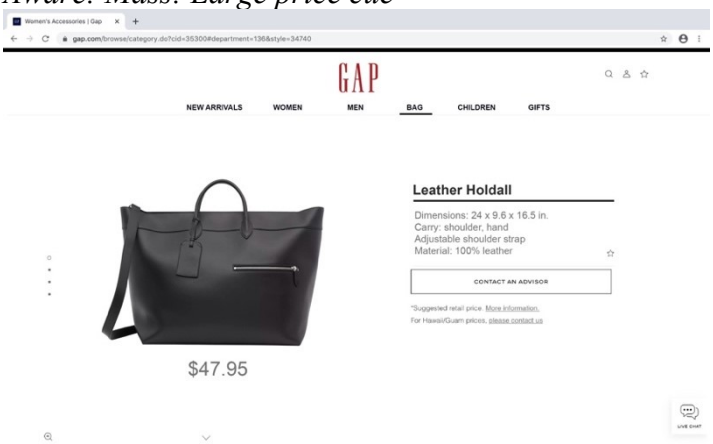


Figure B7

Unaware: Luxury: No price cue

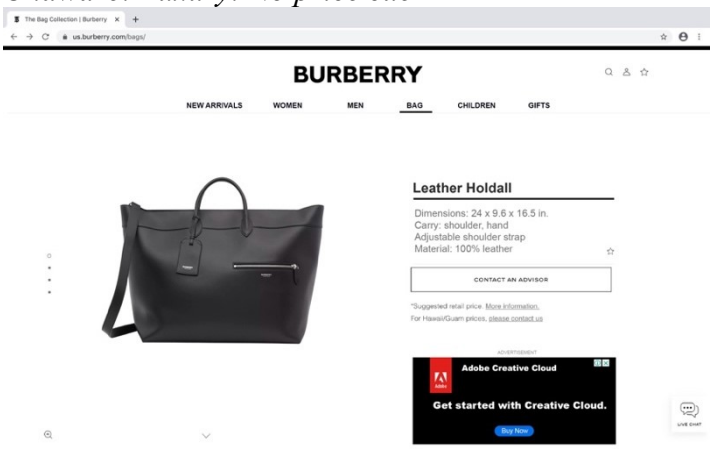


Figure B8

Unaware: Luxury: Small price cue

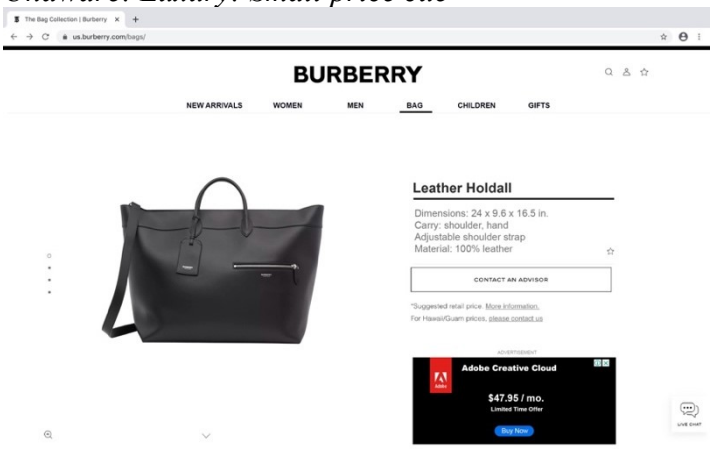


Figure B9

Unaware: Luxury: Large price cue

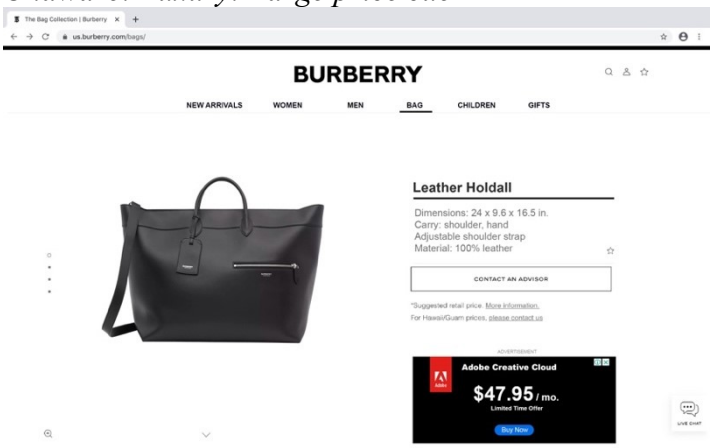


Figure B10

Unaware: Mass: No price cue

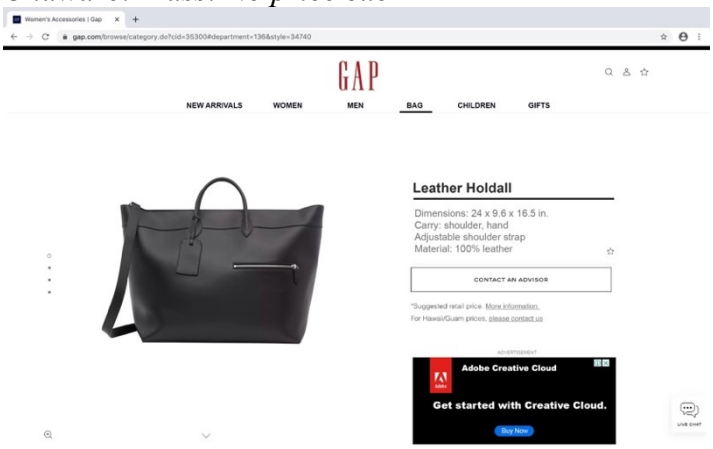


Figure B11

Unaware: Mass: Small price cue

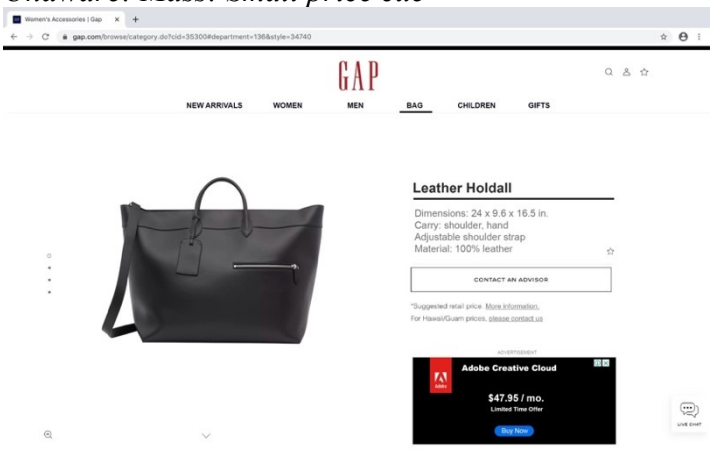
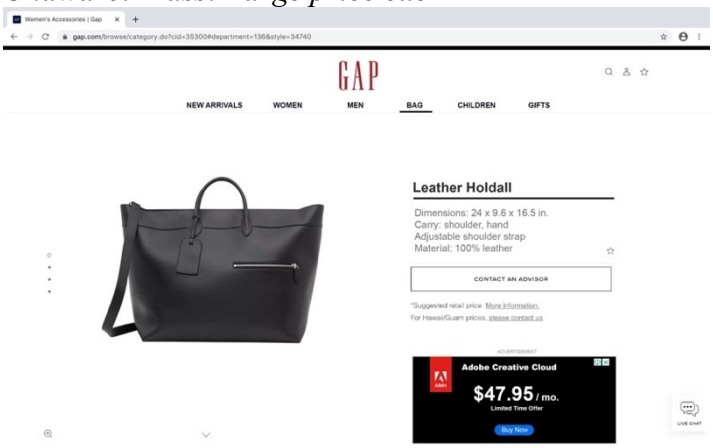


Figure B12

Unaware: Mass: Large price cue



Appendix C

Brand Luxury Index

	1	2	3	4	5	6	7	
Conspicuous	○	○	○	○	○	○	○	Noticeable
Popular	○	○	○	○	○	○	○	Elitist*
Affordable	○	○	○	○	○	○	○	Extremely expensive*
For wealthy	○	○	○	○	○	○	○	For well-off
Fairly exclusive	○	○	○	○	○	○	○	Very exclusive*
Precious	○	○	○	○	○	○	○	Valuable
Rare	○	○	○	○	○	○	○	Uncommon
Unique	○	○	○	○	○	○	○	Unusual
Crafted	○	○	○	○	○	○	○	Manufactured
Upmarket	○	○	○	○	○	○	○	Luxurious*
Best quality	○	○	○	○	○	○	○	Good quality
Sophisticated	○	○	○	○	○	○	○	Original
Superior	○	○	○	○	○	○	○	Better
Exquisite	○	○	○	○	○	○	○	Tasteful
Attractive	○	○	○	○	○	○	○	Glamorous
Stunning	○	○	○	○	○	○	○	Memorable
Leading	○	○	○	○	○	○	○	Influential
Very powerful	○	○	○	○	○	○	○	Fairly powerful
Rewarding	○	○	○	○	○	○	○	Pleasing
Successful	○	○	○	○	○	○	○	Well regarded

Appendix D

Price Importance (PI)

Please rate the importance of each attribute when you are shopping for a handbag in online setting.
Attribute is a criteria you use to evaluate a product in making a purchase decision.

Rate it 9 if it is very important that the website provides information about the given attribute.
Rate it 1 if the information does not affect your evaluation of a product at all.

	Not at all important (1) (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	Very important (9) (9)
Dimensions (1)	○	○	○	○	○	○	○	○	○
Carry: e.g. cross-body, handle, long-shoulder, short-shoulder (2)	○	○	○	○	○	○	○	○	○
Adjustable shoulder strap (3)	○	○	○	○	○	○	○	○	○
Material: e.g. leather, polyurethane, suede, twee, etc. (4)	○	○	○	○	○	○	○	○	○
Price (5)	○	○	○	○	○	○	○	○	○

Appendix E

Price Search (SEARCH)

Please indicate the degree to which you agree with each statement.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I will compare the prices of different online stores. (1)	○	○	○	○	○
I will compare the prices of handbags at two or more online stores. (2)	○	○	○	○	○

Appendix F

Brand Interest

	Strongly Disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I am intrigued by this brand. (1)	○	○	○	○	○	○	○
I am interested in this brand. (2)	○	○	○	○	○	○	○
I am fascinated by this brand. (3)	○	○	○	○	○	○	○
I am curious about this brand. (4)	○	○	○	○	○	○	○
I am not very interested in this brand. (Reversed) (5)	○	○	○	○	○	○	○

Appendix G

Shopping orientation (SO2, SO3)

	Strongly Disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I would rather buy at store than wait for delivery. (6)	○	○	○	○	○	○	○
I like to shop where people know me. (7)	○	○	○	○	○	○	○
While shopping on the Internet, I miss the experience of interacting with people. (8)	○	○	○	○	○	○	○
I like browsing for the social experience. (9)	○	○	○	○	○	○	○
I like to have a great deal of information before I buy. (10)	○	○	○	○	○	○	○
I always compare prices. (11)	○	○	○	○	○	○	○
I carefully plan my purchases. (12)	○	○	○	○	○	○	○
I buy things I had not planned to purchase. (13)	○	○	○	○	○	○	○

Appendix H

Market Knowledge (Price)

Please indicate the degree to which you agree with each statement.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I know a lot about online stores. (1)	○	○	○	○	○
I know which online stores have the best prices. (2)	○	○	○	○	○
I know which online stores have the best price specials. (3)	○	○	○	○	○

Appendix I

Sociodemographic Characteristics of Participants in Pretest 1.

Characteristic			Value
Age			
	Min		23
	Max		70
	Median		40
	Mean		43.82
	SD		13.31
	Skewness		-0.34
	Kurtosis		-1.06
Characteristic	**Criteria**	**n**	**%**
Race			0%
	White	48	84%
	Black or African American	3	5%
	American Indian or Alaska Native	0	0%
	Asian	4	7%
	Native Hawaiian or Pacific Islander	0	0%
	Other	2	4%
Education			
	Less than high school degree	0	0%
	High school graduate (high school diploma or equivalent including GED)	8	14%
	Some college but no degree	11	19%
	Associate degree in college (2-year)	6	11%
	Bachelor's degree in college (4-year)	23	40%
	Master's degree	8	14%
	Doctoral degree	0	0%
	Professional degree (JD, MD)	1	2%
Income			
	Less than $10,000	1	2%
	$10,000 to $19,999	5	9%
	$20,000 to $29,999	7	12%
	$30,000 to $39,999	7	12%
	$40,000 to $49,999	9	16%
	$50,000 to $59,999	3	5%
	$60,000 to $69,999	6	11%
	$70,000 to $79,999	2	4%
	$80,000 to $89,999	4	7%
	$90,000 to $99,999	3	5%
	$100,000 to $149,999	6	11%
	$150,000 or more	4	7%

Appendix J

A complete list of attributes provided in pretest 1

Q. Please rate the importance of each attribute when shopping for a handbag online.

	not at all (1)	2	3	4	5	6	7	8	very important (9)
Color	○	○	○	○	○	○	○	○	○
Material: e.g. leather, polyurethane, suede, tweed, etc.	○	○	○	○	○	○	○	○	○
Made in: e.g. Italy, China	○	○	○	○	○	○	○	○	○
Carry: e.g. cross-body, handle, long-shoulder, short-shoulder	○	○	○	○	○	○	○	○	○
Dimensions: width, length, height	○	○	○	○	○	○	○	○	○
Handle drop: e.g. 4 inch	○	○	○	○	○	○	○	○	○
Shoulder strap drop: e.g. 20 inch	○	○	○	○	○	○	○	○	○
Adjustable shoulder strap	○	○	○	○	○	○	○	○	○
Removable shoulder strap	○	○	○	○	○	○	○	○	○
Hardware: gold-tone, gold brass, antique brass, shiny silver metal, etc.	○	○	○	○	○	○	○	○	○
Closure: e.g. foldover top with magnetic closure	○	○	○	○	○	○	○	○	○
Pocket: e.g. front slip pocket, interior zip pocket	○	○	○	○	○	○	○	○	○
Silhouette	○	○	○	○	○	○	○	○	○
Compartment	○	○	○	○	○	○	○	○	○
Lining: e.g. khaki cotton, black cotton canvas	○	○	○	○	○	○	○	○	○
Care	○	○	○	○	○	○	○	○	○
Dust bag included	○	○	○	○	○	○	○	○	○
Embossed brand lettering	○	○	○	○	○	○	○	○	○

Appendix K

Sociodemographic Characteristics of Participants in Pretest 2.

Characteristic			Value
Age			
	Min		24
	Max		69
	Median		40
	Mean		39.97
	SD		11.42
	Skewness		-0.50
	Kurtosis		-0.77
Characteristic	**Criteria**	**n**	**%**
Gender			
	Male	71	59%
	Female	49	41%
Race			
	White	100	83%
	Black or African American	10	8%
	American Indian or Alaska Native	3	3%
	Asian	2	2%
	Native Hawaiian or Pacific Islander	0	0%
	Other	5	4%
Education			
	Less than high school degree	1	1%
	High school graduate (high school diploma or equivalent including GED)	6	5%
	Some college but no degree	13	11%
	Associate degree in college (2-year)	7	6%
	Bachelor's degree in college (4-year)	60	50%
	Master's degree	32	27%
	Doctoral degree	1	1%
	Professional degree (JD, MD)	0	0%
Income			
	Less than $10,000	6	5%
	$10,000 to $19,999	12	10%
	$20,000 to $29,999	18	15%
	$30,000 to $39,999	14	12%
	$40,000 to $49,999	13	11%
	$50,000 to $59,999	16	13%
	$60,000 to $69,999	11	9%
	$70,000 to $79,999	14	12%
	$80,000 to $89,999	1	1%
	$90,000 to $99,999	3	3%
	$100,000 to $149,999	7	6%
	$150,000 or more	5	4%

Appendix L

Sociodemographic Characteristics of Participants in Pretest 3.

Characteristic		Value	
Age			
	Min		19
	Max		77
	Median		35
	Mean		39.48
	SD		12.60
	Skewness		-0.80
	Kurtosis		-0.30
Characteristic	**Criteria**	**n**	**%**
Gender			
	Male	268	59%
	Female	189	41%
Race			
	White	359	79%
	Black or African American	42	9%
	American Indian or Alaska Native	8	2%
	Asian	30	7%
	Native Hawaiian or Pacific Islander	1	0%
	Other	17	4%
Education			
	Less than high school degree	1	0%
	High school graduate (high school diploma or equivalent including GED)	33	7%
	Some college but no degree	52	11%
	Associate degree in college (2-year)	27	6%
	Bachelor's degree in college (4-year)	214	47%
	Master's degree	111	24%
	Doctoral degree	10	2%
	Professional degree (JD, MD)	9	2%
Income			
	Less than $10,000	28	6%
	$10,000 to $19,999	34	7%
	$20,000 to $29,999	57	12%
	$30,000 to $39,999	59	13%
	$40,000 to $49,999	53	12%
	$50,000 to $59,999	53	12%
	$60,000 to $69,999	36	8%
	$70,000 to $79,999	30	7%
	$80,000 to $89,999	20	4%
	$90,000 to $99,999	17	4%
	$100,000 to $149,999	50	11%
	$150,000 or more	20	4%