

**TIME IS OF THE ESSENCE: THE EFFECTS OF TIME VERSUS MONEY
AND COGNITIVE DISSONANCE ON POST-PURCHASE CONSUMER
REGRET**

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Dedicated to my wonderful parents, Jada and Elzie Longmire, my loving grandma, Paula London, my dedicated sister, Aniya Longmire, and my supportive boyfriend, Kameron Seabrook

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ABSTRACT

Consumers are negatively impacted by the increasingly high rate of product returns. In 2020, an estimated \$428 billion in merchandise were returned to retailers post-purchase with \$25.3 billion being fraudulent returns (NRF.com). Previous research has stated that consumers undergo various negative emotional and cognitive mechanisms when returning and identified reasons as to why consumers return purchases such as product failure, dissatisfaction, and regret (Lee, 2015). Specifically, regret occurs when an individual second-guesses a chosen product due to the realization that the benefits of the unchosen product outweigh the original choice, which elicits uncomfortable feelings (Zeelenberg et al., 1998). However, how does the process of product acquisition and the outcome of the purchasing decision affect post-purchase consumer regret? The purpose of this study is to investigate how the process of expending consumer resources (e.g., time vs. money) to acquire a product and the outcome of inconsistent product attitudes and behaviors (e.g., cognitive dissonance) can affect post-purchase consumer regret (PPCR). In this mixed factorial design, participants viewed scenarios that presented the ‘time’ and ‘money’ spent in acquiring their chosen product and were asked to read a product review that either elicited low or high dissonant feelings. It was hypothesized that consumers would experience greater PPCR when dissonance is high, and the time spent to acquire the product is primed. The interaction effect was not supported; however, an ad hoc analysis revealed that a consumer experienced less PPCR when dissonance is high, and the time spent to acquire the product is highly convenient. The current findings highlight the importance of understanding the process and outcome of purchase on post-purchase evaluations.

Keywords: time, money, decisional dissonance, regret

CHAPTER 1. INTRODUCTION

1.1. Overview of Research

In 2020, the National Retail Federation reported that consumers returned an estimated 428 billion in products. Because product returns are becoming increasingly popular, it is crucial to understand how returns affect retailers. Even more so, we must strive to understand the impact that returns have on consumers. Prior studies have found that consumers undergo various negative emotional and cognitive mechanisms when returning (Powers & Jack, 2013), and researchers often attribute return purchases to product failure, dissatisfaction, and regret (Lee, 2015). Nevertheless, little is known about what factors contribute to a consumer experiencing post-purchase consumer regret. Thus, the current research investigates what contributes to this negative, aversive consumer emotion through understanding how both the acquisition process (e.g., time and money) and the outcome of post purchase evaluation (e.g., cognitive dissonance) can produce post purchase consumer regret.

To understand the complexities of a consumer's purchase behavior as well as the antecedents and consequences of purchase returns, the foundation of this research is based on the two dimensions that constitutes post-purchase consumer regret and how these two dimensions are experienced in a consumption context. More specifically, this paper examines how the process of acquiring a product and the outcome of post purchase evaluations can influence such a negative consumer feelings, such as post purchase consumer regret. Post-purchase consumer regret (PPCR) is defined as the negative affective and cognitive experience induced by the comparison of a consumer's assessment of what they bought and how they bought it and outlines two dimensions of regret: process regret and outcome regret (Lee & Cotte, 2009). Process regret

is formed when a consumer believes that they lacked the desired quality and/or quality of information needed to make a good purchasing decision while outcome regret is defined as the negative comparison between the outcome between what was bought and what could have been bought (Lee & Cotte, 2009). PPCR is an aversive cognitive emotion that motivates a consumer to avoid, suppress, deny, and regulate this emotional experience. How can this negative emotion be influenced by the acquisition process and post-purchase product evaluation? PPCR is such an aversive state that consumers will follow a very involved decision-making process before their final purchasing decision to avoid feeling those negative post-purchase emotions with future purchases (Karimi et al., 2015). In the current research, we are seeking to better understand what leads a consumer to experience post-purchase consumer regret by more closely studying process regret, as conceptualized by the time vs. money effect and outcome regret, as cognitive dissonance.

Again, we are conceptualizing process regret with the time vs. money effect because the process of acquiring a product may include pre-purchase evaluations about the consumer resources needed to acquire the product. This effect states that a consumer's attitudes and behaviors can be shifted just on the mere mention of time or money (Mogilner & Aaker, 2009). According to the 5WPR 2022 Consumer Culture Report, 58% of consumers reported that purchase timing is the most important purchase decision driver (5wpr.com). Additionally, previous research has looked into the influence of purchase timing on regret (Cooke, 2001). However, the current research seeks to challenge the idea of purchase timing by conceptualizing time in another way, which is the time it takes to acquire a product. Additionally, when in the process of acquiring a product, the exchange of money is an important progression to advance the consumer to fulfill the end-goal of product acquisition. For instance, researchers have

conceptualized money in the acquisition phase as renting or buying (Dhar, 2016). However, we propose that whether or not a consumer is renting or buying, feelings about the product price are seemingly inevitable. Therefore, the current research seeks to challenge this idea by not looking into the financial means to obtain a product (e.g., renting vs. buying); rather, this work will consider the subjective feeling that consumers attach to the product price and the value of money in the acquisition process.

Besides the acquisition process leading to regret, there are consequences that may arise from post-purchase evaluations, specifically when (a) consumers regret their purchases and (b) the post-purchase evaluation is inconsistent with a consumer's original cognitions about their product choice (e.g., cognitive dissonance). We are conceptualizing outcome regret with cognitive dissonance because of the comparative judgements that occur during the decisional outcome. Cognitive dissonance is defined as the mental discomfort that results from holding two conflicting attitudes, beliefs, or behaviors (Festinger, 1957). When a consumer experiences cognitive dissonance in the shopping experience, it is often a result of a discrepancy between cognitive elements. This can include expectations of the product performance, quality, etc. before purchase, as well as the (dis)confirmation of those product expectations after purchase (Park et al., 2015). This can have a large impact on post-purchase evaluation because of the comparative judgements that occur when assessing the discrepancy of the decisional outcome. It is worth noting that cognitive dissonance and PPCR, although they are both related to purchase outcomes, differ due to dissonant feelings often preceding the desire to choose an alternative option (e.g., PPCR).

In the current research, we will seek to uncover what drives consumers to regret their purchases because understanding the acquisition process and post-purchase outcomes is crucial

to consumers having an opportunity to use their current perceptions to make informed decision-making choices in the future.

1.2. Research Objectives

An overarching problem that many retailers face is that consumers are returning purchased products at increasingly higher rates, threatening the overall profitability of retailers (Petersen & Kumar, 2009). Previous research has looked into the reasons for returns and found that consumer expectations and motivations (e.g., self-gift, holiday presents), the product experiences (e.g., defective or failure), and post-purchase feelings (e.g., dissatisfaction) are the main contributing factors for product returns (Lee, 2015; Petersen & Kumar, 2009). These findings suggest that product expectations, satisfaction, and post-purchase evaluations can have a large impact on purchase feelings. However, the current research posits that the product and post-purchase product evaluations are not the only reasons why consumers regret their purchases. Rather, the acquisition process also contributes to feelings of regret, thus increasing return likelihood. To our knowledge, the acquisition process and post-purchase evaluations have not been studied in this manner, which provides a strong justification for the current study. More specifically, the primary research question is: How does the process of product acquisition and the outcome of the purchasing decision affect post-purchase regret in consumers? Thus, we are seeking to address the following goals:

1. Assess how consumers express negative post-purchase product attitudes and feelings through post-purchase consumer regret (e.g., PPCR)
2. Investigate how the expenditure of consumer resources (e.g., time or money) during product acquisition can produce post purchase consumer regret.

3. Identify how the inconsistency between a consumer's attitudes and behaviors (e.g., low vs. high dissonance) created by the purchasing outcome can produce feelings of post-purchase consumer regret.

1.3. Purpose of Study

The purpose of this study is to gain a comprehensive understanding of why consumers develop negative post-purchase feelings such as regret through highlighting two important parts of the buying process: the process and the outcome. As mentioned above, consumers often return products because they simply regret their purchases (Zhang, 2018). Previous studies show that consumer regret is tied to post-purchase evaluations that depend on consumer expectations, motivations (e.g., self-gift or holiday presents), and product experiences (e.g., defects or failures) (Cooke, 2001; Petersen & Kumar, 2009). However, little to no research to our knowledge has looked the acquisition process, which may help explain why consumers regret their purchases. To address this gap, our study examines feelings about the time and money needed to acquire a product and how this may relate to post-purchase consumer regret (Mogliner & Aaker, 2009).

A consumer can regret a purchase for two reasons: they can regret the process and also regret the purchasing outcome (Lee & Cotte, 2009). In order to operationalize this, time and money are viewed as two important consumer resources that are necessities when acquiring a product. Previous research has looked into acquisition as renting vs buying (Dhar et al., 2016), but it is quite rare to acquire a product without expending time or money, outside of receiving a gift, so this is the process we define as acquiring a product. Secondly, a product can be evaluated during the acquisition process and after purchase by comparing its expected and actual performance (Buchanan et al., 2016). These perceptions are not only formed individually but also may include the perceptions of others. A way in which consumers gain knowledge about outside perceptions

of a product is through word of mouth and product reviews (Tanford & Montgomery, 2015). Thus, in the current research, cognitive dissonance will be operationalized through product reviews because previous research has shown that product reviews can increase cognitive dissonance (Li & Choudhury, 2020; Pólya et al., 2021). However, we want to extend this research by seeking to understand how cognitive dissonance, as activated through product reviews can affect negative post-purchase consumer regret.

1.4. Theoretical Significance

Previous research has investigated the time vs. money effect in terms of personal connection (Mogilner & Aaker, 2009), consumer charitable giving and donations (Macdonnell & White, 2015; Namin, 2014), and creativity (Han et al., 2020), which are all positive and prosocial behaviors. However, this effect has yet to be studied with the opposite: negative feelings and behaviors. The way in which the current research extends the time vs. money literature and fills the gap is by examining how this effect may contribute to negative feelings such as regret that when experienced, individuals are motivated to avoid, suppress, and deny (Zeelenberg & Pieters, 2007). Regret is also an emotion that is associated with other undesirable emotions such as guilt, shame, and disappointment (Matarazzo et al., 2021).

As mentioned previously, the purpose of the current research is to understand how the process of acquisition along with the outcome of product evaluation can affect post purchase consumer regret. Within consumer decision making, a consumer will make a purchase and then subsequently have post-purchase evaluations based on their product choice. The current research seeks to discover how these two phases can affect one's post purchase consumer regret. Previous literature has examined how pre- and post-purchase evaluations of timing and price affect a consumer's perceived regret and satisfaction (Cooke, 2001), but the current research

conceptualizes time and money differently by focusing on the acquisition process. Additionally, cognitive dissonance has been studied in terms of regret more broadly (Brehm & Wicklund, 1970; Zhang, 2018); however, we are examining post purchase consumer regret in this paper.

1.5. Managerial Significance

In the retail industry, there are negative consequences of product returns such as decreasing consumer loyalty in future buying decisions, loss of sales revenue and profitability, and an increase of operational costs due to additional inspections checks and sorting processes that are administered from the returned goods (Robertson & Jap, 2020; Petersen & Kumar, 2009). However, why are consumers motivated to return products? The manner by which the current research is applied will tap into a greater understanding of that question.

Time and money are valuable consumer resources that are spent to acquire a product; however, the expenditures of time and money can be valued by consumers in differing ways. Additionally, consumers will often evaluate if an object satisfies their needs based on the resources that it took to acquire the product, inciting varying positive and negative feelings (Mogilner & Aaker, 2009). From the current research, we will better understand how these consumer resources are valued within the acquisition process, and how this can affect post-purchase consumer regret.

Product reviews also have major implications on a consumer's satisfaction with a purchase as previous research has found that product reviews are the medium that contributes to an increase in product certainty, which leads to greater customer satisfaction (Changchit & Klaus, 2020). After deciding between two desirable products, a consumer may search for product reviews to confirm the choice that they made. If a consumer comes across information that states that the chosen product is no longer a good choice and that the alternative product is better than

the chosen, then regret can occur. The inconsistency between the belief that the alternative product is now better and the behavior of purchasing the chosen product, can lead to an uncomfortable inconsistency coined as cognitive dissonance (Buchanan et al., 2016). We seek to analyze how an inconsistency between product attitudes and behaviors created by the purchasing outcome will affect post-purchase consumer regret.

The implications of the current research will make a significant contribution to the retail industry because perceived consumer evaluations are one of the strongest drivers of product satisfaction (Hult et al., 2019). Thus, understanding how powerful a consumer's evaluation of their acquisition process and their product outcome can guide retailers on how mitigate the feelings of regret and drastically reduce those negative consequences. By doing so, retailers will be able to foster greater perceived satisfaction with not only the product and brand but with the specific retailer.

CHAPTER 2. LITERATURE REVIEW

2.1. Time versus Money

Time and money are scarce yet precious resources that are fundamental assets to a consumer. They are a direct path that dictates how a consumer conducts their everyday lives through the acquisition and consumption of goods and/or services. Without these resources, people feel temporally and financially constrained which has a direct impact on subjective well-being (Mogilner et al., 2018). In the literature on time vs. money, the understanding of personal resources is a multifaceted lens, as consumers often view, value, spend time and money in opposing ways.

2.1.1. Time

Time as a resource may be seen as a linear duration, or as a malleable yet complex paradigm; however, there are distinct conceptualizations that allow us to better understand this construct. Duration can be defined as the temporal length of a phenomenon or the amount of time that unfolds between the start and finish of such an event. Often, a longer duration will allow an individual to find more complexities within the current situation and are measured in units like minutes, hours, days, weeks, and years (Aguinis & Baker, 2021). Another conceptualization of time is sequence. This is defined as the temporal ordering of phenomena (Aguinis & Baker, 2021).

In the retail industry, time and its' distinct characteristics are found to play a large role in shaping the consumer decision-making process, as well as a consumer's purchasing attitudes and behaviors. This phenomenon is known as shopping convenience and is defined as the consumer's

perceived degree of avoidance of time and effort needed to acquire a product throughout the duration of the shopping experience (Moeller et al., 2009). It is evaluated alongside each step of the buying process and defines convenience in several dimensions: decision, access, search, transaction, and after sales convenience. Instead of operationalizing time as time being spent with a product, this research will specifically focus on the time being spent to acquire a product. Thus, time will be conceptualized through access convenience, the time and effort in reaching a retailer's location, accessing the product in-store, and transaction convenience, the time and effort in the process of purchasing the product (Moeller et al., 2009). Both of the above conceptualizations of time are important because when a shopper is experiencing the time and effort needed to acquire a product, they are also experiencing the duration and sequence of time. They experience the amount of time it takes to procure the product as well as the order in which acquiring a product requires in the marketplace (e.g., information search, comparison of alternatives). Therefore, time as a construct is important to study because, whether short or long, time has the ability to influence the thoughts and feelings of the observed event.

Nevertheless, the notion of time is not always a tangible concept, making it an illusion for some people. The ambiguity lies in the value that time brings. Understanding this ambiguity of value is important because an individual can learn how to avoid misguided decisions with their limited time to obtain the most benefits. Opportunity costs play a large role in consumer decision making because it allows an individual to weigh the foregone benefits that would have been derived from an unchosen option. Regarding time, opportunity costs is defined as understanding what is the next best thing a consumer can do with their time if they choose not to spend time to acquire the product at hand. Because time is not readily exchangeable, it is perishable, and

cannot be saved for later, and it can be difficult to place value on the opportunity costs of time (Okada & Hoch, 2004).

Budgeting is another important aspect of consumer behavior and another aspect where time is deemed ambiguous. When temporal budgets are needed to divide and allocate time, these constraints can be seen as pliable, as we are continuously granted 24 hours. This notion assumes that time can be replaceable as these temporal budgets may not be seen as stringent, unlike other personal resources. For this reason, research has shown that people find it easier to waste time due to their devaluation of temporal budgets (Okada & Hoch, 2004). On the other side of temporal budgets, time can be seen as unreplaceable because when time is limited, it feels more valuable and when time is viewed as more valuable, it is perceived as scarcer (Aaker, Rudd & Mogilner, 2011).

Along with the operationalization and ambiguity of time, the saliency of time can determine the way that people think about this personal resource, which dictates their attitudes and behaviors. When a consumer is primed with time, they view their temporal expenditures as more reflective of who they are since the way a person spends their time is seen as the summation of the life they live. Additionally, when time is made salient, consumers become motivated to build social and personal connections, socialize more, and work less, which encourages them towards greater happiness and more positive behaviors (Mogilner et al., 2018).

Not only can the salience of time determine how people think about this resource but also how it is being made salient can have a large impact as well. Overall, the saliency of the value of time stands on two main questions: 1) Is time more valuable due to its scarcity? or 2) is time less valuable due to its abundance? Previous research has found that priming time scarcity, rather than abundance, can draw an individual's attention to the perceived value of time. This perceived

scarcity can be construed more concretely or abstractly (Mogilner et al., 2018). When time is primed in a concrete way such as in their day-to-day lives, this “time famine” brings about stress, and other behaviors that undermine subjective well-being. When time is primed in terms of an individual’s overall life span, it leads them to feel a greater sense of calmness, and increase their willingness to pursue emotionally relevant goals, behave more generously, and prioritize close relationships (Mogilner et al., 2018).

2.1.2. Money

Satisfying consumers’ needs through the exchange of value is the primary way of acquiring goods within the marketplace and the most dominant means of assessing this value is through exchanging money. Money has symbolic meanings that differ per individual based on the value that they assign it, and these meanings can motivate consumers to conduct a variety of behaviors. Although money itself has no inherent value, the symbolic and motivational meanings of money such as status, achievement, worry, and security are four distinct dimensions that researchers have delved deeper into to understand how consumers place value on money. The construct, status, is externally driven such that money can be a sign of prestige or an apparatus for impressing people. Achievement is the tendency to value money as a symbol of one’s accomplishments and is a sign of success. Worry is defined as the tendency to be excessively concerned about money or the lack thereof and is a source of anxiety. Lastly, security is the tendency to save and value money for its ability to provide a sense of safety or well-being (Rose & Orr, 2007).

An important determinant of an individual’s buying behavior is the influence of others, and these symbolic meanings were tested for their relationship to interpersonal influence. These social dimensions are known as normative or informative influences. Normative influence is the

idea that others will conform to the expectations of others, while informational influence is the tendency to accept information from others as evidence about reality. In this research, we will be looking at the informational influence of money. Previous research has shown that status is positively related to normative and informational influence, whereas security is positively related to the information dimension and negatively to the normative dimension (Rose & Orr, 2007). The reasoning is such that people who value money for status should not only care about the practical information from others but will also conform to what others think to simply impress them, whereas people who value money for security should place more emphasis on the practical information from others when making product decisions. In this research, although we recognize that all consumers attach different symbolic meanings to money, we will operationalize money as security due to its informational influence, which we will study through the use of product reviews.

Although, the value of money is in part influenced by the symbolic meaning an individual places on it, thus influencing buying behaviors, there are also concrete and generalizable conceptualizations of money. One is the transparency that the monetary currency provides. Due to the readily exchangeable market, money is highly liquid and fungible. A dollar is consistently equivalent to 100 cents, no matter the transaction type but may differ in the impact that that same dollar provides. However, because of the relative simplicity in assessing the fundamental worth of money when exchanging money for a product or service in the marketplace, it is easier to weigh the opportunity costs of money. If a consumer does not spend their money on a given product/service, they can more easily assess what the next best thing is that their money will buy (Okada & Hoch, 2004).

Priming an individual with mere mentions of money influences both their attitudes and behavior in seemingly negative ways. The mere mention of money leads individuals to be less likely to help others, donate to charity, and socialize with friends, which are behaviors associated with personal happiness. Money also motivates people to work more, thus, impairing one's ability to savor everyday experiences (Mogilner et al., 2018). This can be explained by the lack of interpersonal connections that one feels when money is made salient because the exchange medium of money is simply focused on the mere acquisition of something, rather than on time spent with others.

When prompted to think about money, the level at which this resource is made prominent in the mind can be facilitated by its' scarcity and abundance. Previous research has found that when Americans were primed with money, low-income individuals were more likely to choose money as a resource that they would want over any other resources compared to middle- or high-income individuals. This proves that the scarcity of money makes money itself more salient, thus impacting one's decision making. In addition to scarcity increasing the salience of money, abundance does as well. Similar to the previous study, individuals who are classified as very wealthy and primed with money, were more likely to act in ways that promoted less pleasure, and act in less altruistic ways, which is consistent with the findings that are due to merely mentioning money (Mogilner et al., 2018).

2.1.3. Time * Money

Understanding the differing roles and values that time and money have individually helped give meaning to the implications of these resources when evaluated together. As mentioned above, time and money are both consumer resources that individuals must decide how to spend, save, and allocate. They are both mediums that are to be spent to obtain a product

and/or service; however, the expenditures of money do not constitute people's lives in the same way that expenditures on time do, and this can be seen through the influence that time vs. money has on one's personal connection, social connection, and happiness.

The meaning of time vs. money when activated can vary depending on how personally meaningful it becomes to one's self-concept. Research by Mogilner & Aaker (2009) demonstrated that when time (vs. money) was made salient, it stimulated the consumer to think more about the experiences that they had with a product which incited a personal connection with the product. This personal connection, as elicited through time, has been found to accrue more positive/favorable attitudes to the product. There are opposite effects when money is made salient. It prompts the consumer to think more about the mere acquisition of the product and not the connection that it can provide, which can incite feelings of disconnection from the product itself.

The subtle activation of time vs. money can also influence in what ways an individual perceives that they are the happiest in their everyday lives as governed by behavior. As stated above, time is connected to emotional fulfillment while money is connected to the utility that it brings so research by Mogilner (2010) posits that when time (vs. money) is made salient, it would lead people to spend more time connecting with those they love thus bringing them more joy to their life. It was found that when time was indirectly activated through the use of a scrambled word search, it increased the participants' intentions to spend time with others, (rather than working or commuting) and increased scores of happiness. Conversely, money as an activator increased one's intention to work and decreased scores of happiness.

2.1.4. Time vs. Money Effect

The time vs money effect dives into the idea that consumers' attitudes and behaviors can be shifted just on the mere mention of time or money. This effect explains that people tend to react more positively to references of time, as time affords us the experience that we have with products we love. If an individual feels as though a product is worthwhile of their time, the time permits the individual to form a personal relationship with the product over time (Mogilner & Aaker, 2009). Because these resources elicit feelings that impact the attitude formation of the product at hand, this current research posits that these resources may also influence the feelings that consumers may have after product purchase, such as regret. A gap within the literature on the time vs. money effect that we will address in the current paper is that previously time has been conceptualized as time spent *with* a product and money spent *on* a product (Mogilner & Aaker, 2009). We seek to apply consistency with our conceptualizations of these resources by understanding them both as spending time and money to *acquire* a product.

2.2. Cognitive Dissonance

Humans have a natural desire to maximize the internal psychological consistency of our cognitions. This includes ensuring that the relationship among two or more cognitive elements (e.g., belief, opinion, attitude, knowledge, or behavior) are in balance with each other. However, when there is an inconsistency between those cognitive elements, feelings of discomfort arise and subsequently prompt an individual to seek out the balance that was originally lost. The enduring and successful theory coined by Festinger (1957) as Cognitive Dissonance is described as an aversive motivational state such that an individual will actively seek to avoid experiencing dissonant feelings. Most decisions that an individual makes will produce cognitive dissonance at varying magnitudes. There are two factors that influence the magnitude of cognitive dissonance

and that is the relative proportions of cognitive elements, which states that if the dissonant elements are increasingly greater than the consonant elements, more dissonance will be experienced. Secondly, magnitude is dependent upon the degree of importance that the dissonant element has. The greater the importance that an individual places on the dissonant elements, the more dissonance that will be experienced (O’Keefe, 2015). For the sake of this research, varying magnitudes of cognitive dissonance will be manipulated (see Chapter 3).

Additionally, due to cognitive dissonance being an aversive motivational state, individuals seek to reduce this highly uncomfortable feeling and re-align psychological consistency. Two ways in which this is accomplished is through changing the relative proportions of consonant and dissonant elements: either adding new consonant elements or altering/deleting the dissonant ones. Another way is to alter the importance of the elements: either by decreasing the importance of the dissonant or increasing the importance of the consonant (O’Keefe, 2015). Thus, information supportive of one’s decision will naturally be seen as a source of dissonance-reducing material.

Cognitive dissonance has been widely studied in various fields and has also been studied in reference to consumer decision making behavior in the retail industry. Consumer Cognitive Dissonance is conceptualized as an immediate post-decisional comparison of what was purchased compared to the other alternatives that were available. If the alternatives are deemed as more attractive than the chosen product, then this will result in an emotionally uncomfortable state and is manifested as doubts as to whether the correct purchase decision has been made (Powers & Jack, 2013). The greater in similarity and desirability that the chosen and alternative products are, the greater cognitive dissonance that the consumer will experience (Mattia et al., 2021). Previous literature has stated that there are three main conditions for cognitive dissonance

to be true for consumers in the marketplace. The first is that the purchase must be crucial for the consumer, meaning that the purchase must be of importance and holds personal value to the purchaser. Secondly, the consumer must be free to choose among the various alternatives. And lastly, the purchase decision is hardly reversible, and the consumer feel like a victim of the circumstances (Mattia et al., 2021). To ensure that cognitive dissonance is properly induced in the manipulation, these conditions are met in the current study (see Chapter 3). Because cognitive dissonance occurs after the initial purchasing decision, it is important to study the effect that this has on consumers because post purchase dissonance prompts an individual to undo their regretted effects which in turn, increases return frequency (Powers & Jack, 2013).

Consumers are expected to make a considerable number of choices every day; however, every decision that a consumer makes is likely to involve some magnitude of cognitive dissonance. This occurs due to choosing between two or more nearly equally attractive options. This choice turns into conflict because selecting one will most likely come with trade-offs. However, after the choice is made, some dissonance is likely to occur due to the undesirable aspects of the chosen product and the desirable aspects of the unchosen alternative being highlighted (O’Keefe, 2015). The belief that the unchosen product is a better option, while the behavior of purchasing the chosen product creates a dissonant feeling that a consumer is tempted to resolve. For this reason, this research will look into varying magnitudes of cognitive dissonance and how these magnitudes affect consumers.

2.2.1. Low Dissonance

Although coined as “cognitive,” there is a large emotional dimension in the post purchase phases that produces cognitive dissonance in consumers. Consumer satisfaction in the pre-purchase phase tends to focus on product expectations. A consumer has a set of ideas that they

hold about the product in their mind, including expectations of the product's performance. However, in the post-purchase phase, the focus is now on the confirmation or disconfirmation of those expectations (Graff et al., 2012). This can create dissonance and it has been found that individuals who have low levels of dissonance will have higher levels of product satisfaction (Graff et al., 2012; Sharifi & Esfiani, 2014). In research that looked to uncover varying magnitudes of post purchase dissonance with mobile phones, it was found that consumers in the low cognitive dissonance condition were more satisfied with their mobile phones after purchase (Graff et al., 2012).

Additionally, when purchasing online, it is easy for a consumer to base their product attitudes and behaviors on product reviews as they have not had direct experience with the product. Opinions from others who have experienced the product can almost serve as an indicator of if this product will meet their pre-existing expectations. This occurs even more so in the electronic industry as these products are technical with many features and functions that can be difficult to perceive without use (Graff et al., 2012). Previous research has found that those who experience low cognitive dissonance, are less likely to allow other people's opinions to influence their post-purchase attitudes (Graff et al., 2012). In other words, low dissonance consumers have greater product certainty, and it has also been found that when consumers are certain about their product choice, they have greater levels of satisfaction (Changchit & Klaus, 2020). This is explained due to a low dissonant consumer not being in doubt about their purchasing decision, so they do not have the need to rely on others' opinions nor let others sway their post-purchase product attitudes, thus, being more satisfied with their decision outcome. When a consumer is satisfied, they also exhibit greater behavioral and attitudinal product loyalty (Sharifi & Esfandi, 2014).

In addition to consumer satisfaction, cognitive dissonance may also have an effect on the perceived relationship that consumers have with their branded products. It was found that consumers who experience low dissonant feelings between their product attitudes and behavior, feel more personally connected to their product due to the trust formed in the perceived marketing (Sharifi & Esfiani, 2014).

2.2.2. High Dissonance

When consumers are faced with discordant cognitions, they ultimately are unhappy due to the discomfort that they feel. In the same research study that looked into post purchase cognitive dissonance in the mobile phone market, the researchers found that consumers who felt high cognitive dissonance were less satisfied with their mobile phones (Graff et al., 2012). Additionally, consumers who experienced high cognitive dissonance were more influenced by others' opinions on their chosen product (Graff et al., 2012). This is explained due to the doubt that they had about their product, so seemingly, others' opinions can derive important considerations to their attitudes as well. While having low dissonance encourages consumers to feel more personally connected to their product, consumers who experience high dissonance feel less personally connected to their product (Sharifi & Esfiani, 2014). Overall, it has been found that high cognitive dissonance experienced by consumers results in negative satisfaction, and less personal connection. This is important to study because this can cause negative re-purchase intention, and positive complaint intention (Powers & Jack, 2013).

2.2.3. Cognitive Dissonance and Regret

Cognitive dissonance as a post-decisional phenomenon starts with a decision between two desirable options by which the decision consequently highlights the undesirable aspects of

the chosen and the desirable aspects of the alternative. This prompts feelings of regret, which are formed after the decision but before dissonance has been reduced. During regret, the initial evaluation of both products becomes reversed such that unchosen alternative becomes more attractive and the chosen product becomes less attractive (O’Keefe, 2015). Consequently, this leads a consumer to wish that they bought the other alternative product and oftentimes, they will back out of their original decision. The effect of cognitive dissonance on regret is important to study because it can prompt an individual to undo their regretted effects which increases product return frequency (Powers & Jack, 2013).

Regret is often seen with online purchases as there is a lapse of time between the original purchasing decision and the delivery of the product. This lapse called the “Gamma” stage can reinforce the reversal of the initial product evaluations as the consumer has ample time to dwell on the unfavorable aspects of the chosen and the favorable aspects of the alternative. This stage is important to study because it connects the psychological state of the consumers to the communication messages that they may receive between purchase and delivery of the product (Oliver, 1997). While experiencing regret, consumers are also more susceptible to information and sources that can either confirm or disconfirm their pre-existing product attitudes and beliefs. Information that is supportive of one’s decision is naturally seen as a source of dissonance-reducing material (O’Keefe, 2015; Liang, 2016) and is actively sought out by consumers. Previous research looked into the effect of post-purchase information and found that consumers who purchased but had not received their car sought out and had increasingly high readership for favorable (vs. unfavorable) car advertisements (Donnelly & Ivancevich, 1970). Product reviews had a similar effect where consumers who sought out reviews that were congenial with their pre-existing attitudes experienced less dissonance (Liang, 2016). Additionally, consumers who were

presented with favorable aspects of their chosen car from the salesman as a follow-up communication post-purchase but before they received their car were significantly less likely to back out of and return the purchase (Donnelly & Ivancevich, 1970).

2.3. Regret

Regret is an aversive cognitive emotion that individuals are motivated to avoid and is known to result by a result of comparing ‘what is’ with ‘what might have been’ (Gilovich & Medvec, 1995; Lee & Cotte, 2009). As an emotion, regret is categorized in two components: affect and cognition. The realization that the unchosen option is more favorable than the chosen captured in the decision experience creates negative affect and expending cognitive efforts to process how the situation could have turned out better if they had chosen differently makes regret a considerable consequence of decision making (Buchanan et al., 2016). For any given experience of regret, these two components must be present, yet the strength and salience of the components on the outcome of regret may vary (Buchanan et al., 2016). It is important to differentiate regret from similar emotional experiences such as disappointment as they both are associated with comparisons of options during post-purchase valuation that leads to negative affect. Regret is a concern about making a different choice that could have led to a better outcome and is based on a sense of self-responsibility for the decision outcome. The greater control over their decision outcome, the greater the feelings of regret (Lee & Cotte, 2009). Disappointment is focused on how an external event that is outside of one’s control could have produced a better outcome and one will tend to blame others for the decision outcome (Buchanan et al., 2016; Lee & Cotte, 2009; Zeelenberg et al., 1998). The current research investigates regret because it is associated more with switching behavior than disappointment and switching

behaviors play a large role in consumer behavior with product return likelihood (Powers & Jack, 2013).

The cognitive aspect of regret is conceptualized as upward counterfactual thinking. This is a thought process where an individual compares the current decisional outcome with hypothetical scenarios about how the alternatives could have landed them a more desirable outcome (Ratner & Herbst, 2003). Upward counterfactual thinking becomes increasingly apparent when there are a large number of alternatives and for an alternative that was almost chosen compared to one that was barely considered (Sagi & Friedland, 2007). The greater the upward CFT, the greater an individual will experience regret (Lee & Cotte, 2009). In the current research, participants who feel regret due to the cognitive dissonance in the reviews may experience upward CFT, which will prompt their feelings of regret.

2.3.1. Post Purchase Consumer Regret

How does the feeling of regret permeate consumer decision making? Literature expounds on this experience as Post Purchase Consumer Regret (PPCR) and describes it as a negative affective and cognitive experience induced by the comparison of a consumer's assessment of what they bought and how they bought it (Tsiros & Mittal, 2000). What differentiates PPCR from regret is its focus on determining the outcome and the process of why consumers regret their purchase. Due to the specific determinants that this measure uncovers in the post-purchase phase of consumer decision making, the current research seeks to study Post Purchase Consumer Regret over regret for a deeper and more concentrated understanding of consumers. PPCR is divided into two independent components: outcome regret and process regret. Process regret is formed when an individual compares their inferior decision process to a better alternative decision process and can be evoked when they feel as though they didn't have the desired quality

or quantity of information during the decision process needed to make an informed purchase (Lee & Cotte, 2009). Outcome regret is the negative comparison between the purchase and what could have been bought. Process regret occurs when a consumer compares their inferior decision process to a better alternative decision process (Lee & Cotte, 2009). When the reality of these two components is unfavorable compared to the alternative outcome or process, the consumer will experience PPCR.

For the purpose of this study, we will focus on both process and outcome regret within the PPCR construct due to its overall specialized approach to understanding how a consumer's decisional purchase process and the outcome can be evaluated based on consumer choice and product evaluation. Process regret has two components that better explain this unique dimension of PPCR. An individual can regret due to the under and over consideration of the decisional process. When a consumer feels that they failed in accessing the needed information to make the best decision amongst alternatives, they regret their under-consideration, whereas when a consumer feels that they put too much time and effort into the buying process, they regret due to over-consideration. (Lee & Cotte, 2009).

When a consumer experiences outcome regret, they can experience this due to believing that the chosen is inferior to the alternatives, as well as perceiving the product as not fulfilling the consumer's needs, desires, and expectations (Lee & Cotte, 2009). The former is known as regret due to foregone alternatives and the latter is regret due to change in significance. The main difference between both subscales within outcome regret is that regret due to foregone alternatives is comparing the chosen versus the rejected, whereas with regret due to change of significance, the chosen is being compared to itself but in two different time dimensions (e.g., during time of purchase, and when the perceived product utility was diminished) (Lee & Cotte,

209). Studying both components within PPCR is important because regret is related to choice (Zeelenberg & Pieters, 2006), thus, providing a deeper understanding of how a consumer's product choice can affect their overall purchase evaluations.

2.4. Hypothesis Development

The current research investigates how both the process to acquire, and the outcome of the product can produce a negative, aversive consumer emotion. More specifically, how the time and money spent to acquire a product and the cognitive dissonance that is induced from the inconsistency between product attitudes and behaviors may influence post purchase consumer regret. The study was operationalized through scenarios that presented the time and/or money spent to acquire the chosen product and also through product reviews with attitudes that are designed to elicit low and high cognitive dissonance in consumers.

To understand the novelty of this interaction, we will first study the individual main effects. Previous research found that priming time (vs. money) encourages consumers to give positive product evaluations due to the personal connection that time affords a consumer to have with a product (Mogilner & Aaker, 2009) and that personal connection with a product decreases feelings of regret (Davvetas & Diamantopoulos, 2017).

Conversely, priming money (vs. time) encourages negative product evaluations due to money being an exchange medium that focuses simply on the mere acquisition that it affords (Mogilner & Aaker, 2009). Thus, not fostering personal connection. Due to the lack of personal connection that money provides, we can conclude from research by Davvetas and Diamantopoulos (2017) that a consumer will be more likely to experience regret. Although previous research on the time vs. money effect has looked into spending time and money *with* a product, we infer that the effects will be similar for the time and money spent *to acquire* a

product because in order to spend these consumer resources with a product, one must acquire it first. Therefore, we will extend the research by operationalizing the time vs. money effect with the time and money spent to acquire a product, with more emphasis on the convenience of time (Moeller et al., 2009) and perceived value of money (Suri & Monroe, 2003) during product acquisition. Therefore,

H1. If the time spent to acquire a product is primed, a consumer will experience less post purchase consumer regret than when money spent to acquire is primed.

Previous research on cognitive dissonance and its effects on consumer behavior has stated that overall, consumers who experience high cognitive dissonance after product purchase experience greater feelings of regret (Chen & Chen, 2021). More specifically, this relationship can be better explained by satisfaction. Consumers who experienced low (vs. high) cognitive dissonance had greater product certainty, thus, having greater levels of satisfaction and lower regret (Changchit & Klaus, 2020). Conversely, consumers who experienced high (vs. low) cognitive dissonance were less satisfied with their purchases, experienced greater regret, and were more influenced by others' opinions about their chosen product (Graff et al., 2012). Research on cognitive dissonance on PPCR has not been studied before. Due to the novelty of the relationship, we posit that:

H2. If a consumer experiences high cognitive dissonance, they will feel greater post purchase consumer regret than when cognitive dissonance is low.

To test the combined effect, we will look into the effects of priming time versus money and cognitive dissonance on post purchase consumer regret. As previously mentioned, personal

connection is the mechanism that drives the effect on favorable product attitudes (Mogilner & Aaker, 2009); however, when a consumer with a high self-product connection, experiences counter-attitudinal information about their chosen product, they respond to that information as they do personal failures because of the association of the product on their self-concept (Cheng et al., 2012). We conclude that despite a consumer feeling a high personal connection that once elicited positive product evaluations, the presence of counterattitudinal information to a product that is close to one's personal connection will prompt feelings of regret.

H3a. If the inconsistency between product attitudes and behaviors is low, consumers will experience less purchase consumer regret when the time spent to acquire the product is primed than when money spent to acquire it is primed.

H3b. If the inconsistency between product attitudes and behaviors is high, consumers will experience greater purchase consumer regret when the time spent to acquire the product is primed than when money spent to acquire it is primed.

CHAPTER 3. METHODOLOGY

In Chapter 3, the product selection, research design, procedure, and survey instruments for Study 1, 2, and 3 are discussed. The purpose of Study 1 is to assess how the time versus money effect can affect post purchase consumer regret. Previous research has not looked into the proposed relationship; therefore, this research will be the first to do so.

3.1. Study 1

3.1.1 Participants

To collect data, the researchers recruited 100 participants through Amazon Mechanical Turk and asked them to participate in the paid research study because as everyday consumers, they may have assessed the process of acquiring a product. Their participation can help us understand what influences those assessments.

3.1.2 Product Selection

Rather than allowing the participants to write about any product that they desired to purchase, this research design called for participants to choose among three pre-selected brands of the same product. Using different brands/features within the same product category was done because previous research has understood that consumers aim to reduce comparability between alternatives, especially when the product categories are vastly different. This leads to a justification of one's choice being simply due to one product belonging to a completely different product category than the other and that unchosen product category just does not meet the needs of the consumer (Mattia et al., 2021). The aim of the study is to compare the varying brands and

features of similar products (e.g., noise-cancelling headphones) and allow the participant to undergo a selection process that includes recognizing which product attributes are important to them (Li et al., 2020)

Wearable technology and electronics have made remarkable growth in the consumer products industry over the last decade by helping consumers achieve a state of self-connection (Ferreira et al., 2021). For this reason, headphones in the consumer electronics product category were selected as the product tested in this study. Previous research has tested the level of involvement of multiple products and found that smartphones and computers are the most highly involved product categories (Lio, 2017). Highly involved products tend to elicit stronger attitudes and greater attitude accessibility in consumers (Kokkinaki & Lunt, 1997). Nevertheless, because of that, they tend to prompt consumers to have strong emotions and attachments to these products prior to the study, which can influence their responses. So, although, not as highly involved, headphones are products that participants may have neutral feelings on coming into the study. Additionally, headphones consist of brands that are not as polarized such as Apple and Android, which can also influence participant responses. Prior research on perceptions of consumer electronics such as headphones indicates that brand and price have no particular influence on purchasing attitudes and behaviors (Ferreira et al., 2021), proving that brand name should not play a large role in this study, rather the features will be what influences consumers' purchase choice. Lastly, headphones are considered gender-neutral products and gender has been proven to not affect the acceptance and adoption of these products (Ferreira et al., 2021) so that all participants can effectively envision themselves consuming the selected products.

3.1.3. Research Design

Previous research has stated specific criteria for selecting and evaluating products to compare the effects of consumer experiences. The first criterion is to engage the participants by allowing them to actively evaluate the test product (Lio, 2017). This was done in the current research design, by allowing the participants to read through the product features of the three brands listed and based on those features, evaluate which product seems of most interest to purchase. The second criterion is to select a product with balanced experience and search attributes. Search attributes are ones that can be verified prior to purchase and experience attributes are those that can be verified only after use of the product (Srinivasan & Till, 2002). To ensure balanced search and experience attributes, we clearly demonstrated relevant attributes for each pair of headphones that gave the participants the information they needed to make a sound decision, as well as had the participants think and write about using their chosen product and how consuming that product would make them feel.

In this research design, we did not test for participants' actual post-purchase experience as they did not truly make the purchase. They were asked instead to imagine a hypothetical scenario where they purchased a product from pre-selected options and to write about their perceived purchase experience with their hypothetical chosen product. The current research design sought to employ perceived (vs. actual) purchasing experience in two ways: through a hypothetical scenario and a hypothetical product choice.

A hypothetical scenario of acquiring a product within an airport setting was done to see how various modalities of purchase, such as in-person (Studies 1 and 3) vs. online (Study 2) could affect PPCR. This allows the current research to have increasingly higher external validity, as the results can be generalized to various shopping contexts. More specifically, the airport scenario was operationalized for the in-person context due to the importance that environment

have on product selection, product evaluation, and shopping experience. Consumers respond to more than just the product itself when making decisions, but they also consider their purchasing environment (Prasad & Madhavi, 2014). By giving realism to their purchasing environment in the hypothetical scenario (e.g., having participant imagine they are on their way to vacation, therefore, needing noise-cancelling headphones and visits the airport to purchase), it allows the participants to evaluate their product choice in terms of what qualities are deemed most important to them for the intended purpose of the product in their environment (e.g., needing noise cancelling headphones to cancel out loud sounds on an airplane).

Next, the hypothetical pre-selected product choice was done to ensure the clarity and precision of the time vs. money effect as this would instill consistency within the research design that would have not otherwise been possible if participants listed any purchase they recently made. Pre-selected products and a perceived purchase experience allowed for little to no variance in the product categories listed, and a more consistent way to operationalize the time and money needed to acquire their product.

Additionally, due to the novelty of the time and money manipulation, we wanted to ensure within the research design that this manipulation was capable of working successfully. Therefore, we employed the Shopping Convenience scale (Moeller et al., 2009) to test if time was effectively manipulated in the study. This is because of how time as a resource is operationalized in the current study. Instead of spending time with a product, we are looking at spending time to acquire a product and the Shopping Convenience scale is most closely aligned with the time spent to access a product (access convenience) and the time spent during the transaction to purchase (transaction convenience), as seen in the measure items. To test if money was effectively manipulated in the study, we employed the Perceptions of Price Value scale (Suri

& Monroe, 2003) because money as a resource during product acquisition is far more than just the dollar amount but can serve as a comparative judgement of value against the alternatives (Rose & Orr, 2007).

3.1.4. Research Procedure

At the start of the experiment, informed consent was recorded digitally through Qualtrics after respondents reviewed the research statement. The research statement included a general description of the research study's goals, pre-screening criteria, and validity checks. The research study was administered through Qualtrics, an online survey software and promoted on Amazon Mechanical Turk, an online crowdsourcing marketplace. Qualtrics was chosen as a platform for this research study because of the reputable distribution of online surveys. Amazon Mechanical Turk was chosen to recruit participants due to its reliability of data collection as evident by high test-retest reliability rates (Buhrmester et al., 2011).

Participants were asked to imagine that they are in the market to purchase a new pair of noise-cancelling headphones for a long flight for their summer vacation and to imagine that they are browsing at a store in the airport to search for varying headphone options. The participants were provided with three different brands of noise-cancelling headphones (e.g., Beats, Bose, Bang & Olufsen) and for each, there was a list of three key product features that are unique to each brand. Participants were presented with the product brand, product picture, and key features, with a button that says, 'buy now' (See Appendix B.1). Participants were then asked to select the pair of headphones that are the most desirable to them based on the product features and to justify their answers. They were then asked to rate their interest in using their chosen headphones, their purchase intentions, and their willingness to buy their headphones.

In this between subject's design, the participants were randomly assigned to either the time or money condition of the brand they chose. This was manipulated through a fictitious scenario focusing on the acquisition of their chosen product before and after purchase. The scenario in the time condition primed the participants to think about the breakdown of how they spent six hours acquiring their headphones such as "spending 1 hour to find a shop with headphones in the large airport and spending another hour testing the sound quality" (See Appendix B.2). For the money condition, participants were primed to think about spending 350 dollars to acquire their headphones and "that the headphones were an excellent investment of their money" (See Appendix B.3). To account for balance within conditions, one hour was equated to 60 dollars. Therefore, \$350 is equivalent to approximately 6 hours. After each condition, a manipulation check was administered to determine the effectiveness of the time versus money manipulation. The participants were asked how much time and money they spent acquiring their headphones on a scale of (1 = Not very much to 7 = A lot). Next, the participants were asked to imagine that they used their headphones during their long flight. However, after deplaning they came across the same store and saw the alternatives they did not choose. They were then asked if they would keep their original purchase or exchange for the alternatives (See Appendix B.7).

Lastly, the participants were asked to complete the Post-Purchase Consumer Regret Scale (Lee & Cotte, 2009) to measure the extent to which their product choice induced feelings of regret after purchase. They were asked again to rate their interest in using their chosen headphones, their purchase intentions, willingness to buy, and their likelihood of return. To further test the viability of time versus money manipulation on PPCR, the participants were asked to complete a Shopping Convenience Scale (Moeller et al., 2009) and a Perceptions of

Price Value Scale (Suri & Monroe, 2003). To test if the product's brand was a control variable, the participants were asked to complete a single brand loyalty question about their chosen brand (as derived from the Consumer-Based Equity Inventory) (Schivinski & Dabrowski, 2014). The participants were then informed that the product descriptions, features, and reviews were fictitious, thus, not affiliated with the brands mentioned in the study. The participant's demographic information was collected to conclude the study.

3.1.5. Survey Instruments

Post-Purchase Consumer Regret Scale (Lee & Cotte, 2009). The PPCR is a sixteen-item, seven-point scale questionnaire that measures the extent to which a product choice can produce feelings of regret in consumers (1 = strongly disagree, 7 = strongly agree). Post-purchase consumer regret is conceptualized as a two-dimensional model consisting of outcome regret and process regret. For this study, we are interested in measuring both dimensions and their related dimensions, which are regret due to foregone alternatives (e.g., I now realize how much better my other choices were), regret due to change in significance (e.g., I regret choosing my product because it is not as important to me as I thought it would be), regret due to under-consideration (e.g., I regret not putting enough thought into my decision) and regret due to over-consideration (e.g., I feel that too much time was invested in getting this product) (See Appendix A.1).

The Shopping Convenience Scale (Moeller et al., 2009). The Shopping Convenience Scale is a thirty-one item, seven-point questionnaire that measures the consumer's perceived degree of the barriers of time and effort associated with the entire shopping process (1 = strongly disagree, 7 = strongly agree). The Shopping Convenience Scale is conceptualized as a five-dimensional model consisting of decision, access, search, transaction, and after sales convenience. For this study, we are interested in measuring access and transaction convenience

and is adapted for in-store purchase for headphones (e.g., It is easy to reach the store to buy my headphones, it did not take much time to buy my headphones) to represent the time and effort used to acquire the product in the fictitious scenario (See Appendix A.3).

The Perceptions of Price Value Scale (Suri & Monroe, 2003). The Perceptions of Price Value Scale is a three-item, seven-point scale questionnaire that measures the extent to which a consumer perceives the price of their purchased product as having met their expectations of worth, value, and quality (1 = strongly disagree, 7 = strongly agree). This scale was adapted for product type (e.g., I think that given the headphones' attributes, it is a good value for money) (See Appendix A.4).

The Consumer-Based Brand Equity Inventory (Schivinski & Dabrowski, 2014). The CBBE is a twenty-three item, five-point scale questionnaire that measures the distinct relationship that a brand has with its consumers that promotes positive buying behaviors (1 = Not at all, 7 = Very much). The Consumer-Based Brand Equity Inventory is conceptualized as a four-dimensional model consisting of brand awareness, brand associations, perceived quality, and brand loyalty. For this study, we were interested in measuring a single brand loyalty item (e.g., rate the extent to which you consider yourself loyal to your chosen brand) to test if the product's brand presented in this study, was a confounding variable. Due to the brands listed in this study, the CBBE will be used to control for brand loyalty (See Appendix A.2).

3.2. Study 2

The purpose of Study 2 is to examine how cognitive dissonance experienced by conflicting product attitudes can affect post purchase consumer regret. Previous research has looked into the relationship between cognitive dissonance and regret (Zhang, 2018), but more

specifically, PPCR has not been studied in this relationship. Therefore, this research will further develop the relationship.

3.2.1 Participants

Similar to Study 1, 100 participants were recruited through Amazon Mechanical Turk and were asked to participate in a paid research study about the product outcome after purchasing as an everyday consumer.

3.2.2 Research Design

To ensure that the cognitive dissonance manipulation in the study design was successful, there are three main conditions for cognitive dissonance to be true (Mattia et al., 2021). First, the purchase must be crucial to the consumer. This was done in the research design by stating the importance of the product purchase and how that product can improve their everyday lives. Previous research has stated that a good way to raise interest in a product to a consumer is to relate the purchase to other involvement-related constructs (Matti et al., 2021). Thus, in addition to the importance of the purchase, participants were highly involved in the purchase journey through narrowing down the products choices. The second condition is that the consumer is free to choose among various alternatives. In the research design, the participants were given three options to choose from and it was stated that they have the freedom to choose amongst the options. Lastly, the purchase decision is hardly reversible, and the consumer feels like a victim of the circumstances. The participants will be told that the return policy on the product is very strict.

As a consumer, it is easier to fall victim to post-purchase cognitive dissonance if a selected product is similar to the other alternatives on the market (Matti et al., 2021). Instead of giving participants the option to choose from three different products (e.g., smartphone,

computer, headphones), the participants were given a choice to choose between three different brands (e.g., Beats, Bose, Sony) within the same product (e.g., headphones) with varying features.

3.2.3 Research Procedure

Participants were asked to imagine that they are in the market to purchase a new pair of headphones and to imagine that they are browsing an online website to search for varying headphone options. The participants were provided with three different brands of headphones (e.g., Beats, Bose, Sony) and for each, there was a list of key product features that are unique to each brand, and a detailed product description. Participants were presented with the product brand, product picture, and key features, with a button that says, 'buy now' (See Appendix B.1). This was designed to mimic online information search as 63% of consumers research product information before purchasing to make better decisions (Santos & Goncalves, 2021). Participants were then asked to narrow their search by choosing two out of three headphones that are the most desirable to them.

Next, the participants were instructed to write a detailed description of themselves consuming each of their chosen headphone brands including their anticipated experience using the product, how they anticipate feeling while consuming, what qualities they like the most, and why is this headphone choice a better choice compared to the one they eliminated. This was done to induce the comparison of alternatives. After writing the detailed description of the two different products, which are both equally desirable to the participant, they were then asked to choose one product to purchase that is the most desirable to them. They were then asked to rate their purchase intentions, and willingness to buy their chosen product.

In this between-subject's design, the participants were randomly assigned to either the high or low dissonance condition of the brand they chose. This was manipulated through a fictitious product review for their chosen brand. In the high dissonance condition, the product had predominately low ratings with an overall 1-star rating on the website. The written product review stated that the chosen product is a horrible choice, and that the key features listed previously do not work. This negative product review was intended to induce high cognitive dissonance among participants due to the inconsistency between their positive product behaviors (e.g., purchasing their chosen product because they liked it) and the negative reviews (e.g., product attitudes) presented about their chosen product. In the low dissonance condition, the product had predominately high ratings with an overall 5-star rating on the website. The written product review stated that the chosen product is a great choice, and that the key features work well. This positive product review was intended to induce low cognitive dissonance because there wasn't an inconsistency between their positive product behaviors and the positive product attitudes as presented in the reviews about their chosen product (See Appendix B.6).

Lastly, the participants were asked to complete the Post-Purchase Consumer Regret Scale (Lee & Cotte, 2009) to measure the extent to which their product choice induces feelings of regret after purchase. They were asked to rate their interest in using their chosen headphones, their purchase intentions, willingness to buy, and their likelihood of return. A manipulation check was administered to determine the effectiveness of the time versus money and cognitive dissonance manipulation. Unlike Study 1, to test if the product's brand was a confounding variable, the participants were asked to complete all brand loyalty items within the Consumer-Based Equity Inventory (Schivinski & Dabrowski, 2014). This was because the length of the survey was not as long as Study 1, giving our participants less survey fatigue. Lastly, the

participants were informed that the product descriptions, features, advertisements, and reviews were fictitious, thus, not affiliated with the brands mentioned in the study. The participant's demographic information was collected to conclude the study.

3.2.4 Survey Instruments

Post-Purchase Consumer Regret Scale (Lee & Cotte, 2009). The PPCR is a sixteen-item, five-point scale questionnaire that measures the extent to which a product choice can produce feelings of regret in consumers (1=strongly disagree, 7=strongly agree). Post-purchase consumer regret is conceptualized as a two-dimensional model consisting of outcome regret and process regret. For this study, we are interested in measuring both dimensions and their related dimensions, which are regret due to foregone alternatives (e.g., I now realize how much better my other choices were), regret due to change in significance (e.g., I regret choosing my product because it is not as important to me as I thought it would be), regret due to under-consideration (e.g., I regret not putting enough thought into my decision) and regret due to over-consideration (e.g., I feel that too much time was invested in getting this product) (See Appendix A.1).

The Consumer-Based Brand Equity Inventory (Schivinski & Dabrowski, 2014). The CBBE is a twenty-three item, five-point scale questionnaire that measures the distinct relationship that a brand has with its consumers that promotes positive buying behaviors (1=strongly disagree, 7=strongly agree). The Consumer-Based Brand Equity Inventory is conceptualized as a four-dimensional model consisting of brand awareness, brand associations, perceived quality, and brand loyalty. For this study, we were interested in measuring a three-item brand loyalty dimension (e.g., If I need to buy this product, I usually will buy brand X, If someone offers me a competitor's brand, I will still buy brand X) to test if the product's brand presented in this study, was a confounding variable (See Appendix A.2).

3.3. Study 3

The purpose of Study 3 is to examine the interaction effect between the time vs. money effect (now operationalized with the shopping convenience scale and price judgements scale) and cognitive dissonance on PPCR. To our knowledge, this is the first study to conceptualize the two dimensions of PPCR: process regret and outcome regret with the time vs. money effect and the cognitive dissonance that occurs after purchase.

3.3.1 Participants

Similar to Study 1 and 2, 100 participants were recruited through Amazon Mechanical Turk and were asked to participate in a paid research study about the process of acquiring a product and the product outcome as an everyday consumer.

3.3.2. Research Procedure

At the start of the experiment, informed consent was recorded digitally through Qualtrics after respondents reviewed the research statement. The research statement included a general description of the research study's goals, pre-screening criteria, and validity checks. The research study was administered through Qualtrics, an online survey software and promoted on Amazon Mechanical Turk.

Similar to Study 1, participants were asked to imagine that they are in the market to purchase a new pair of noise-cancelling headphones during a long flight for their summer vacation and to imagine that they are browsing at an airport store to search for varying headphone options. The participants were provided with three different brands of noise-cancelling headphones (e.g., Beats, Bose, Bang & Olufsen) and for each, there was a list of key product features that are unique to each brand. Participants were presented with the product

brand, product picture, and key features, with a button that says, ‘buy now’ (See Appendix B.1). Participants were then asked to select the pair of headphones that are the most desirable to them based on the product features and to justify their answer. They were then asked to rate their interest in using their chosen headphones, their purchase intentions, and willingness to buy their headphones.

In this quasi-experimental design, the participants were presented with both the ‘time’ and ‘money’ scenarios of the brand they chose. Due to the findings of Study 1, the time and money conditions were no longer primed or manipulated because of their insignificance, rather, we assessed the relationship through the Shopping Convenience and Price Judgements scales on Post Purchase Consumer Regret. All participants were informed that they spent two hours acquiring their headphones such as “spending 1 hour speaking to the salesperson about the specific features and testing the sound quality to boarding the plane” (See Appendix B.4). Following this scenario, the participants were immediately provided with the Shopping Convenience Scale (Moeller et al., 2009) to measure the perceived degree of time and effort convenience of the acquisition process. Then all participants were simply informed of the price of their chosen headphones. Each pair of headphones were listed at 350 dollars (See Appendix B.5). Following this scenario, the participants were immediately provided with the Perceptions of Price Value Scale (Suri & Monroe, 2003) to measure the perceived degree of monetary value during the acquisition process. Because we are no longer manipulating time and money like in Study 1, the balance effects (e.g., \$350 equating to 6 hours) between conditions were no longer imperative, as well as the images (e.g., clock and dollar sign), and acquisition barriers that were used to enforce the primed constructs in Study 1. It is important to note that we kept the operationalization of time and money consistent among studies (e.g., time/money to acquire).

Then participants were asked how much time and money they spent acquiring their headphones on a scale of (1 = Not very much to 7 = A lot).

In true experimental design fashion, a between subject's design was employed and the participants were randomly assigned to either the low or high dissonance condition of the brand they chose. This was manipulated through a fictitious product review for their chosen brand and were the same reviews as seen in Study 2 (See Appendix B.6).

Lastly, the participants were asked to complete the Post-Purchase Consumer Regret Scale (Lee & Cotte, 2009) to measure the extent to which their product choice induced feelings of regret after purchase. They were asked again to rate their interest in using their chosen headphones, their purchase intentions, and willingness to buy their headphones. Similar to Study 1, the participants were asked to complete a single brand loyalty question about their chosen brand (as derived from the Consumer-Based Equity Inventory) (Schivinski & Dabrowski, 2014). The participants were informed that the product descriptions, features, advertisements, and reviews were fictitious, thus, not affiliated with the brands mentioned in the study. The participant's demographic information was collected to conclude the study.

3.3.3. Survey Instruments

Post-Purchase Consumer Regret Scale (Lee & Cotte, 2009). The PPCR is a sixteen-item, seven-point scale questionnaire that measures the extent to which a product choice can produce feelings of regret in consumers (1 = strongly disagree, 7 = strongly agree). Post-purchase consumer regret is conceptualized as a two- dimensional model consisting of outcome regret and process regret. For this study, we are interested in measuring both dimensions and their related dimensions (See Appendix A.1).

The Shopping Convenience Scale (Moeller et al., 2009). The Shopping Convenience Scale is a thirty-one item, seven-point questionnaire that measures the consumer's perceived degree of avoidance of time and effort associated with the entire shopping process (1 = strongly disagree, 7 = strongly agree). For this study, we are interested in measuring access and transaction convenience, which is adapted for in-store purchase for headphones to represent the time and effort used to acquire the product in the fictitious scenario (See Appendix A.3).

The Perceptions of Price Value Scale (Suri & Monroe, 2003). The Perceptions of Price Value Scale is a three-item, seven-point scale questionnaire that measures the extent in which a consumer perceives the price of their purchased product as having met their expectations of worth, value, and quality (1 = strongly disagree, 7 = strongly agree). This scale was adapted for product type (See Appendix A.4).

The Consumer-Based Brand Equity Inventory (Schivinski & Dabrowski, 2014). The CBBE is a twenty-three item, five-point scale questionnaire that measures the distinct relationship that a brand has with its consumers that promotes positive buying behaviors (1 = strongly disagree, 7 = strongly agree). For this study we are interested in measuring a single brand loyalty item (e.g., rate the extent to which you consider yourself loyal to your chosen brand) to test if the product's brand presented in this study, was a confounding variable. Due to the brands listed in this study, the CBBE will be used to control for brand loyalty (See Appendix A.2).

CHAPTER 4. RESULTS

In chapter 4, the results of the research were reported by analyzing the collected data and testing the proposed relationship between the priming of consumer resources and cognitive dissonance on PPCR. The first section of this chapter will focus on the findings from studying the main effect of time versus money on PPCR. The subsequent section will describe the research sample and data analyzes and summarize the findings of cognitive dissonance on PPCR. Lastly, the interaction effects between consumer resources and cognitive dissonance will be tested.

4.1. Study 1

Study 1 investigated the relationship between the time versus money effect on PPCR due to the novelty of the proposed relationship. The effectiveness of the manipulations was tested, and the plausibility of the proposed hypotheses was checked. Overall, these results aided in the development of subsequent studies.

4.1.1. Demographic Characteristics of Sample

Participants (N=100) were recruited from Amazon Mechanical Turk for pre-testing. However, due to providing inadequate responses on the validity checks, 3 responses were omitted, resulting in 97 participants. The majority of the participants were male (60%), ages 25-34 (54%), White/Caucasian (85%), have a bachelor's degree (51%) are employed full-time (95%) and have an annual household income of \$50,001-100,000 (39%).

4.1.2. Scale Reliability

The Post Purchase Consumer Regret scale was developed by Lee and Cotte (2009) conceptualized PPCR into four main subscales. This scale was adapted to include two non-regret items (e.g., The product I chose was the right decision). For this reason, the reliability of this scale was tested. The Cronbach's coefficient alpha was computed for the items in the scale as a measure of internal consistency reliability (Table 1). The results show that the overall alpha coefficient is .752. The resulting reliability estimates are considered reliable due to the high values between 0.6 to 0.8 (Nunnally, 1978). Additionally, the item statistics show that the item with the highest PPCR average was item 3 (e.g., "I now realize how much better my other choices were"). A detailed dissection of the item statistics can be seen in Table 1.

The relationship between the two non-regret items that express being satisfied with their perceived purchase should have a negative weak/moderate linear relationship for regret items yet a positive strong/moderate linear relationship to the other non-regret item. The inter-item correlation matrix on the PPCR items shows a correlation of -.152 with a regret item and a correlation of .603 with another non-regret item. Thus, proving the relationship among PPCR items.

Table 1. The Final Measurement Model Properties.

Construct/Items	M	SD	α
Post Purchase Consumer Regret Scale			.752
PPCR1	5.69	1.236	
PPCR2	5.76	1.281	
PPCR3	5.88	1.192	
PPCR4	5.70	1.308	
PPCR6*	1.91	.867	
PPCR7	5.65	1.225	
PPCR8*	1.99	1.046	
PPCR9	5.70	1.251	
Shopping Convenience Scale			.825
SC1	5.43	1.464	
SC2	5.48	1.634	
SC3*	1.19	1.734	
SC4	5.37	1.563	
SC5	5.46	1.451	
Price Judgments Scale			.854
PJ1	5.57	1.241	
PJ2	5.49	1.393	
PJ3	5.49	1.363	

*Reverse-coded item

4.1.3. Manipulation Check

For the manipulation check, two subscales were used to conceptualize and test the value of time versus money as consumer resources. The Shopping Convenience Scale developed by Moeller et al. (2009) contains five main subscales but for the purposes of this research, we selected the access and transaction subscales to further measure the time spent acquiring a product. The Cronbach's coefficient alpha was computed, and the results show that it has an overall alpha coefficient of .825 (Table 1). The Price Judgements Scale developed by Suri and Monroe (2003) was utilized in this study to further measure the money spent acquiring a product

and Cronbach's Alpha proved that the scale is reliable with an alpha of .854. The time condition ($M = 5.57$, $SD = .99$) did not produce a significantly higher value for access convenience compared with the money condition ($M = 5.47$, $SD = 1.33$), $t(95) = .393$, $p = .695$. Also, the money condition ($M = 5.50$, $SD = .98$) did not produce a significantly higher value for price judgments than the time condition ($M = 5.22$, $SD = 1.45$), $t(95) = -1.11$, $p = .269$.

4.1.4. Main Effect

Not surprisingly, it was found that in the priming condition, time ($M = 47$, $SD = 3.234$) and money ($M = 50$, $SD = 3.333$) did not have significant effects on PPCR $F(1, 97) = .412$, $p = .522$. Due to the weak main effect of time vs. money on PPCR, we combined the groups and ran an ad hoc test on PPCR, conceptualizing time with the Shopping Convenience scale and money with the Price Judgements scale.

A multiple linear regression analysis shows that shopping convenience ($\beta = .579$, $p < .001$), price judgements ($\beta = -.339$, $p < .001$), and brand loyalty ($\beta = .503$, $p < .001$) were significantly related to PPCR ($R^2 = .607$, $F(1, 96) = 47.829$, $p < .001$). While brand loyalty, which served as our control variable, was positively related to PPCR, the results show that the main effects were still significant in this relationship. Due to these ad hoc findings, we planned to use a quasi-experimental design to test the hypothesized interaction effect in Study 3.

4.1.5. Study 1 Discussion

The purpose of hypothesis 1, which stated that if the time spent to acquire a product is primed, a consumer will experience less post purchase consumer regret than the money spent to acquire a product, was to find significance of an otherwise novel relationship between time vs. money and PPCR. This was hypothesized due to time being an activated construct that

encourages positive product evaluations (Mogilner & Aaker, 2009) because the consumer will have the opportunity to personally connect and spend time with the product and that personal connection with a product decreases feelings of regret (Davvetas & Diamantopoulos, 2017). The current study found that there is not a statistically significant effect of time and money on PPCR, thus not supporting hypothesis 1. However, results from ad hoc testing suggests that when the time spent to acquire a product is highly convenient, it is positively related to PPCR, which contradicts the direction of the original hypothesis. Additionally, the ad hoc testing suggest that when the money spent to acquire a product is deemed as having high monetary value and quality, it is negatively related to PPCR.

The results of time convenience on PPCR may be explained by the importance of process regret, as coined by Lee & Cotte (2009). More specifically, regret due to under-consideration is a component of process regret and is formed when a consumer believes that they lacked the desired quality/quantity of information needed to make a good decision (Lee & Cotte, 2009). In the current research, we can suggest from the findings that when the time spent acquiring the product is convenient (e.g., I was able to quickly gain access to my headphones), they might have felt that due to the quickness or convenience of acquiring their product that they did not give themselves adequate time to truly assess the quality of their product choice. Thus, when given an opportunity to choose an alternative, they regretted their original purchase. The results of monetary value on PPCR suggest that when a consumer views their chosen product as having great value for their money based on the available attributes, is a reasonable price based on the quality, and feel that they are getting their money's worth, they will experience less PPCR.

4.2. Study 2

Study 2 was designed to investigate the relationship between cognitive dissonance on PPCR. The effectiveness of the manipulation was tested, and the plausibility of the proposed hypotheses was checked. In addition to Study 1, this study built upon the validity and reliability of the survey instruments, specifically the Consumer Based Brand Equity. Overall, these results will aid in the development of Study 3.

4.2.1. Demographic Characteristics of Sample

Participants (N=100) were recruited from Amazon Mechanical Turk. However, due to providing inadequate responses on the validity checks, 14 responses were omitted, resulting in 86 participants. The majority of the participants were male (49%), ages 30-35 (39%), White/Caucasian (64%), have a bachelor's degree (51.3%), are employed full-time (73%), and earn a household income of \$50,001-\$100,000 a year (33%).

4.2.2. Scale Reliability

The Consumer Based Brand Equity was developed by Schivinsky and Dabrowski (2014) and operationalized the distinct attitudes and relationships that that consumer has about a brand in four main subscales. For this research, we specifically utilized the brand loyalty subscale. This is because it was used to control for brand loyalty, as the depicted products used well-known brands for the product category. The Cronbach's alpha for this dimension was .909, which is considered reliable.

4.2.3. Manipulation Check

To test the effectiveness of the manipulation, a one-way ANOVA was conducted, and it was found that the low dissonance condition ($M = .47$, $SD = .502$) had significant effects on the manipulation $F(1,84) = 554.140$, $p < .001$. Additionally, it was found that the high condition ($M = .53$, $SD = .502$) had significant effects on the manipulation $F(1,84) = 55.520$, $p < .001$.

4.2.4. Main Effect

To test the significance of the main effects for cognitive dissonance on PPCR, it was found that low dissonance ($M = 4.3$, $SD = .97$) and high dissonance ($M = 5.1$, $SD = .84$) had significant effects on PPCR $F(1,84) = 14.104$, $p < .001$ (Figure 1). Additionally, it was found that when controlling for brand loyalty ($M = 7.16$, $SD = 1.15$), there were significant effects on PPCR $F(1,84) = 7.167$, $p = .019$. While brand loyalty was significant ($p = .019$), the results show that the main effects of dissonance on PPCR were still significant. Additionally, low dissonance ($M = .38$, $SD = .494$) and high dissonance ($M = .62$, $SD = .494$) also had significant effects on return likelihood $F(2,84) = 4.031$, $p = .021$.

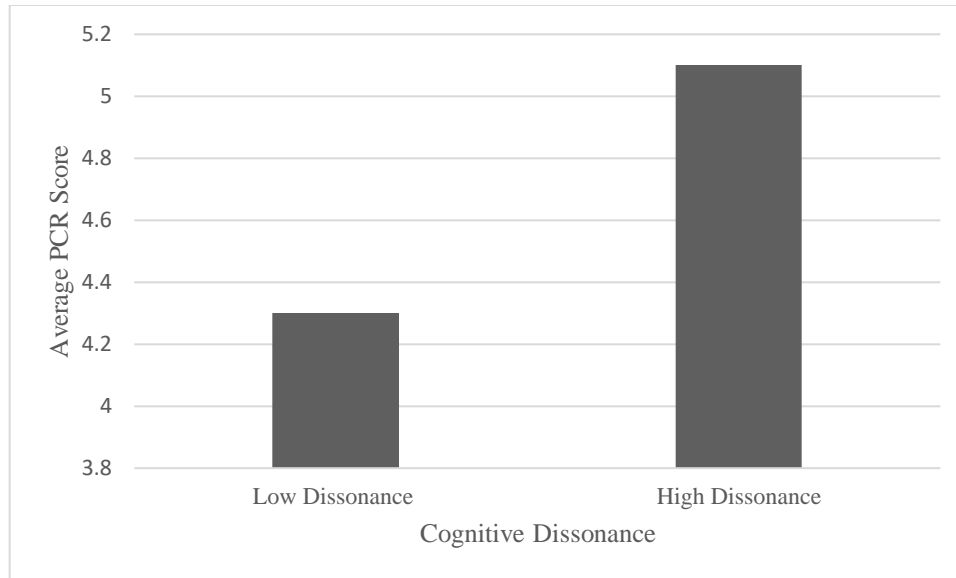


Figure 1. The Magnitudes of Cognitive Dissonance on Post Purchase Consumer Regret.

4.2.5. Study 2 Discussion

Hypothesis 2 was tested to determine the relationship between cognitive dissonance and post purchase consumer regret. More specifically, it was hypothesized that if a consumer experiences high cognitive dissonance, they will feel greater post purchase consumer regret than when cognitive dissonance is low. This was hypothesized because previous research has found that high dissonant consumers were less satisfied with their purchases, experienced greater regret, and were more influenced by others' opinions about their chosen product (Graff et al., 2012). Similar to previous research, we investigated the relationship between dissonance and regret but it differs, as we confirmed the proposed relationship with more specificity (PPCR). Based on the above results, hypothesis 2 is accepted not only because the relationship between cognitive dissonance and PPCR is significant but because participants in the high dissonance condition scored greater scores in PPCR than participants in the low dissonance condition and high

dissonant participants resulted in greater product return likelihood. This can be explained by the participant's positive perception of their chosen product being inconsistent with the perceived negative perception of others' opinions of the product, which produces product uncertainty thus, prompting regret and subsequently, higher product return rates.

4.3. Study 3

In this mixed factorial design, the purpose of Study 3 was to test the interaction effects between the time vs. money effect (as now operationalized with the shopping convenience scale and price judgements scale) and cognitive dissonance on PPCR. This interaction is important to study because a consumer's post-purchase feelings are a summation of not only the derivative of their post-purchase evaluations, but also the process it took to acquire their product and the interaction effect will give us better insights on how these two work together to contribute to PPCR.

4.3.1. Demographic Characteristics of Sample

Participants (N=102) were recruited from Amazon Mechanical Turk (Table 2). The majority of the participants were male (79%), ages 25-34 (57%), White/Caucasian (85%), have a bachelor's degree (62%), and are employed full-time (84%) making an annual household income of \$25,001- \$50,000 (55%) (Table 2).

Table 2. Demographics of Final Respondents

	Frequency	Percentage (%)
Gender		
Male	81	79.4
Female	21	20.6
Age		
18-24 years	8	7.8
25 to 34 years	58	56.9
35 to 44 years	20	19.6
45 to 54 years	9	8.8
55 to 64 years	4	2.9
65 to 74 years	3	
Ethnicity		
White/Caucasian	87	85.3
Black/African American	7	6.9
Hispanic/Latino/Latina	3	2.9
Asian/Pacific Islander	2	2.0
Native American	2	2.0
Not listed	1	1.0
Employment		
Full-time employment	86	84.3
Part-time employment	6	5.9
Self-Employed	7	6.9
Retired	1	1.0
Seeking opportunities	1	1.0
Prefer not to disclose	1	1.0
Highest Level of Education		
High school or less	10	9.8
2-year degree	6	5.9
4-year degree	63	61.8
Master's Degree or equivalent	21	20.6
Doctoral Degree or equivalent	1	1.0
Annual Household Income		
Under \$25,000	3	2.9
\$25,001- \$50,000	56	54.9
\$50,001- \$100,000	33	32.4
\$100,001- \$150,000	5	4.9
\$150,001- \$200,000	2	2.0
More than \$200,001	3	2.9
Total	102	100

4.3.2. Manipulation Check

To test the effectiveness of the dissonance manipulation, analyses were performed. A one-way ANOVA found that in the dissonance condition, low dissonance ($M = 1.04$, $SD = .192$) and high condition ($M = 1.33$, $SD = .474$) did have significant effects on the manipulation $F(1, 100) = 16.720$, $p < .001$. Due to time and money no longer being manipulated in Study 3, there were no manipulation checks performed.

4.3.3. Main Effect and Interaction Effect

A one-way ANOVA was conducted to break down the main effects of dissonance on PPCR. It was found that in the dissonance condition, low dissonance ($M = 4.130$, $SD = 1.268$) and high dissonance ($M = 4.638$, $SD = .912$) had significant effects on PPCR $F(1, 100) = 5.318$, $p = .023$. However, low dissonance ($M = 1.53$, $SD = .504$) and high dissonance ($M = 1.45$, $SD = .503$) did not have significant effects on return likelihood $t(1,100) = .795$, $p = .428$. Overall return likelihood ($M = 4.80$, $SD = .721$) had significant effects on PPCR $t(1,100) = 4.175$, $p < .001$.

Due to the insignificance of time and money in Study 1, a Quasi-experimental design was employed to test the relationship between the Shopping Convenience scale, which again served as a scale to conceptualize the time needed to acquire a product, on PPCR. A simple linear regression analysis showed that shopping convenience was significantly related to PPCR ($\beta = .486$, $R^2 = .236$, $F(1, 100) = 30.963$, $p < .001$).

Additionally, we looked into the relationship between the Price Judgements scale, which served as a scale to conceptualize the money needed to acquire a product, on PPCR and a simple linear regression analysis showed that price judgement was significantly related to PPCR ($\beta = .395$, $R^2 = .156$, $F(1, 100) = 18.465$, $p < .001$).

A multiple linear regression analysis was conducted to further test the relationship of all three variables in the model and its effects on PPCR when controlling for brand loyalty. It was found that shopping convenience ($\beta = .459, p < .001$), price judgement ($\beta = .046, p = .725$), and dissonance ($\beta = .259, p < .003$) were significantly related to PPCR ($R^2 = .304, F(1, 101) = 14.299, p < .001$). Additionally, it was found that our control, which was brand loyalty ($\beta = .270, p < .015$) did have significant effects on the results. While brand loyalty was positively related to PPCR ($p < .015$), the results show that the main effects were still significant.

To test the hypothesis that post purchase consumer regret is a function of time (aka shopping convenience) vs. money (aka price judgements) and more specifically whether cognitive dissonance moderates the relationship between time vs. money on PPCR, a hierarchical multiple regression analysis was conducted. In the first step, two variables were included: shopping convenience ($\beta = .045, p = .002$) and price judgements ($\beta = .054, p = .694$). These variables accounted for a significant amount of variance in PPCR ($R^2 = .238, F(1, 99) = 15.428, p < .001$). To avoid high multicollinearity with the interaction term, the variables were centered and an interaction term between shopping convenience and dissonance was created due to the lack of significance of price judgement (Aiken & West, 1991). Next, the interaction term between shopping convenience and dissonance ($\beta = .225, p = .026$) was added to the regression model, which accounted for a significant proportion of the variance in PPCR, $\Delta R^2 = .038, F(1, 98) = 12.411, p < .001$.

Due to the potentially significant moderation effect, we tested the interaction between shopping convenience and dissonance using the process macro (Igartua & Hayes, 2021) and found there was a significant effect on PPCR $F(3, 98) = 20.387, p = .000$ (Figure 2).

Additionally, there was a significant interaction effect of shopping convenience*dissonance $F(1, 98) = 12.843, p = .0005$.

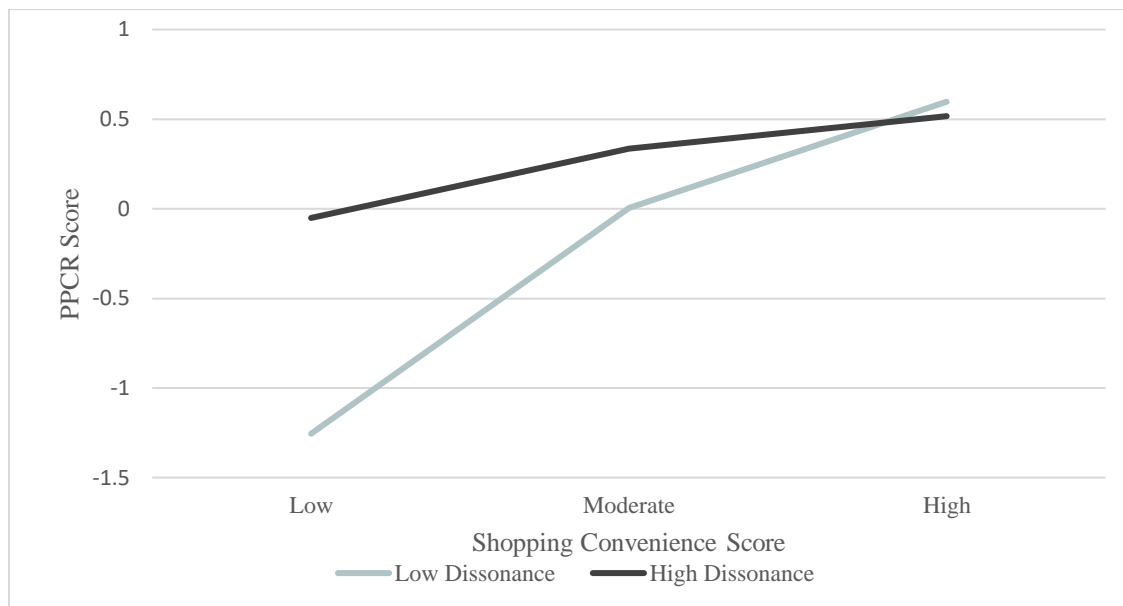


Figure 2. The Moderating Role of Cognitive Dissonance in Shopping Convenience on PPCR.

4.3.4. Study 3 Discussion

Hypothesis 3a and 3b were tested to determine the interaction effect between time vs. money and cognitive dissonance on PPCR. More specifically, it was hypothesized that when high cognitive dissonance is experienced, consumers will experience greater post purchase consumer regret when the time spent to acquire a product is primed. This hypothesized effect was speculated to be a reversal of Study 1's hypothesis when high cognitive dissonance is in the model, as it was in prior research that consumers responded to inconsistent product information as they do personal failures (Cheng et al., 2012) and this was predicted to have a greater effect over the convenience of time spent to acquire a product.

The results from the current study found that the interaction effect between shopping convenience and dissonance is significant. However, based on the direction of the results from Figure 1, Hypothesis 3a and 3b are not supported. Contrary to the hypotheses, the findings suggest that when high cognitive dissonance is experienced, consumers will experience *less* PPCR when the time spent to acquire a product is highly convenient. Unlike Study 1, which suggests that the highly quick and convenient nature of acquiring a product increases PPCR due to not having enough time to assess the quality of their product choice compared with other choices, Study 3 captured the importance of product reviews on a consumers' assessment of their time and its' findings emphasize another aspect related to time besides process regret, which is the value of time. Previous research has found that people find it easy to waste time as time is more pliable due to one consistently being granted 24 hours (Okada & Hoch, 2004). In the current research, when a consumer quickly and conveniently acquires their product and then receives negative feedback via product reviews that their chosen product is not the best choice, they may feel as though they "wasted" their time in the process of acquiring a seemingly 'bad' product choice. However, because the amount of time that was "wasted" was not at an abundance, they may find it easier to dismiss the feelings about their lackluster product choice and when presented with alternatives, they experience less PPCR. This could potentially serve as a mechanism to increase accuracy for future decision making.

CHAPTER 5. CONCLUSION

The results of the present study indicate the relationship between the antecedents and consequences that form post purchase consumer regret. More specifically, how the process of spending time and money to acquire a product and the outcome of cognitive dissonance that may create inconsistent product attitudes and behaviors can produce post purchase consumer regret. The present research employed a mixed factorial design which consisted of both a quasi-experimental and true experimental design and utilized One-Way ANOVAs and regression analyses as the major statistical instruments in the study. Chapter 5 presents a summary of the findings, discussion, managerial implications, future directions, limitations, and conclusion.

5.1. Summary of Findings

The purpose of the current study was to understand why consumers develop negative post-purchase feelings through highlighting two important parts of the buying process: the process of acquiring and the outcome of the purchasing decision. The objective was to examine the process of the time and money used to acquire the product during the buying process, in addition to the cognitive dissonance that may form after purchase when there are dissonant attitudes and behaviors about the chosen product. Overall, one hypothesis was accepted (H2) and three were not supported (H1, H2a, H2b), which led to sufficient insights. In general, consumers who experienced high cognitive dissonance, which was operationalized through negative product reviews that were inconsistent with the consumer's positive purchasing behavior, experienced greater post-purchase consumer regret than those who experienced low cognitive dissonance (e.g., positive review) (Study 2).

Additionally, we can suggest from the findings that if cognitive dissonance is high, consumers will experience less post purchase regret when the time spent to acquire is highly convenient while when cognitive dissonance is low, consumers will experience greater post purchase consumer regret when time is highly convenient (Study 3). Lastly, contrary to the proposed hypothesized effects, it was found that when time is spent to acquire a product is highly convenient, it is positively related to PPCR, while when money is spent to acquire a product deemed as having high monetary value and quality, it is negatively related to PPCR (Study 1).

5.2. General Discussion

The current research sought to understand negative post-purchase feelings by studying the antecedents and consequences that lead to such aversive emotions. We did this by examining a consumer's purchasing journey across all stages: information search, evaluation of alternatives, purchase decision, and post-purchase evaluation with emphasis on the process of acquiring a product while making a purchasing decision and the outcome of the purchase formed by post-purchase evaluations. Additionally, this effect was studied throughout two purchasing modalities: in-person (Studies 1 and 3) and online (Study 2). From our findings in Study 3, we can suggest that when a consumer experiences high cognitive dissonance, they will feel less post purchase consumer regret when the time spent acquiring is highly convenient. Although the original objective of the current study did not seek to operationalize the time vs. money effect as time convenience and monetary value, we did obtain interesting insights based on the ad hoc testing. We found from our findings in Study 1 and Study 3 that the time spent acquiring a product can be understood by consumers in multiple ways. The first way is how one utilizes time during product acquisition to ensure that they fully assess all of the prospective product's qualities, features, and information (Study 1). This is important to understand because consumers are

motivated to make good purchasing decisions. The more convenient, thus not having adequate time to mull over alternatives, the greater post purchase consumer regret a consumer will experience.

The second way, as also discovered by the current research, is that time is understood by consumers through the value of time. Previous research that looks into how time affects consumer behavior poses two questions: is time more valuable due to its' scarcity, or is time is less valuable due to its' abundance? (Mogilner et al., 2018). According to the findings in Study 3, we can conclude that consumers view time as less valuable due to its' abundance. Imagine a consumer who experiences a quick and convenient process of acquiring a product, then views a negative product review that is inconsistent with their original positive purchasing behavior. They may feel as though despite purchasing a seemingly 'bad' product, there was not an abundance of time spent on acquiring that product; therefore, their time was not 'wasted'. This suggests that when a consumer's time is not 'wasted,' they experience lower rates of regret, due to having an abundance of time to 're-do' their purchasing decision when given the opportunity to choose an alternative product. This conceptualization of time is equally important to understand because consumers are motivated to make good purchasing decisions while in the acquisition process. However, their post-purchase evaluations may be highly dependent on the extent to which they perceive their time as being wasted, no matter how 'good' or 'bad' a product is made out to be.

Additionally, this effect places an interesting lens on the importance that cognitive dissonance has on overall product feelings. Previous research has found that consumers who experienced high cognitive dissonance were more influenced by others' opinions about their chosen product (Graff et al., 2012), and our research found similar conclusions. In Study 2, we

found that when a consumer experiences high cognitive dissonance via a negative product review, the product review, which is derived from the opinion of other's influence the degree to which a consumer regrets their purchase. However, the role of cognitive dissonance shifts in its influence when the consideration of the acquisition process is made available. As mentioned above, the findings of Study 3 suggest that when a shopping experience is deemed as highly convenient, consumers are no longer concerned with how 'good' or 'bad' others view the product, as long as a great of time was not 'wasted' in acquiring the product, they count their losses, and experience less regret. This change of significance that cognitive dissonance has on subsequent product evaluations and feelings is especially important for retail managers to understand, which will be outlined in the following section.

5.3. Managerial Implications

From a managerial perspective, we offer fresh insights. Feelings of post-purchase regret affect consumers' future decision making as they use those feelings as cues to avoid the process, product, or evaluations that made them initially feel regret (Lee & Cotte, 2009). Because of the aversive effects that regret produces, it is in a retailer's best judgement to put into place strategies and practices to ensure that their consumers do not regret their purchases as this can negatively impact word of mouth, future purchasing decisions, profit (Robertson & Jap, 2020; Petersen & Kumar, 2009). Our research identifies important implications that retailers can implement in both online and in-person settings.

The current research has found that when the time spent to acquire a product was highly convenient, it was positively related to post purchase consumer regret. Retail managers should recognize that although limiting the amount of time barriers it takes to acquire a product has become increasingly popular with new technology integrations, this level of convenience can

backfire and can lead to increasingly high rates of regret, greater switching behaviors, and greater return likelihood. Retail literature has found that when customers assign importance to shopping convenience, it prompts retailers to re-design the store operating systems with faster checkout processes (e.g., shorter lines and/or register-less stores) and less barriers that increase the time it takes to check out (Duarte et al., 2018). To effectively implement this, a retail manager may seek to balance self-service with innovative machine learning applications such as Amazon's "Just Walk Out Technology" or Sam's Club's "Scan As You Go" (Wankhede et al., 2018). This adoption of a consumer's in-store experience is seen to enhance their post-product evaluations by limiting time barriers associated with product acquisition. However, it is important to note that the quickness and convenient nature of these systems can backfire and encourage consumers to feel as though they did not have time to assess the quality of their product against the other available alternatives. As seen from the current research, this encourages higher rates of post purchase consumer regret. Therefore, we suggest that retailers who have implemented these innovative operating systems should balance this strategy with various customer touchpoints to help guide the consumer through the acquisition process. This could involve implementing QR codes around the store that direct a customer to information that compares and contrasts the product features, quality, and information of their choice and the available alternatives to mitigate any feelings of regret due to under-consideration.

It is also equally as important for retailers to note that when the money spent to acquire a product is considered to have high monetary value, it is negatively related to PPCR. We suggest to retailers that instead of simply having the product's dollar amount as the only point of reference about the monetary progression used to acquire products, consider using copy that

emphasizes that the money spent will be a valuable investment of one's money for the quality and attributes that the product has.

Additionally, we found that when cognitive dissonance is high, consumers experience greater post-purchase regret, thus, raising the importance of decreasing the cognitive dissonance felt by consumers. The varying magnitudes of cognitive dissonance were operationalized in the current research with positive and negative product reviews. Previous research has found that post-purchase communication reduces the cognitive dissonance felt by consumers (Milliman & Decker, 1990), so due to the findings of the current research, we recommend retailers to not only send post-purchase communication such as brochures, coupons, and information about their recent purchases to reduce dissonance, thus reducing PPCR, but to intentionally present positive product reviews within their post-purchase communication. Most retailers send a confirmation email with the customer's order number and product details (Milliman & Decker, 1990); however, we urge that after purchase, retailers send out a follow-up email to all customers, both from in-store and online purchases, with positive reviews and commentary about the product that was recently bought. This will be done to confirm the consumer's purchase behavior with consistent product attitudes via positive product reviews and allows the retailer to manage what reviews will be seen by customers. Post-purchase communication that contains positive reviews about the purchased item will not only reduce dissonance, thus, decreasing the post-purchase consumer regret felt by consumers but subsequently will foster loyalty through the development of post-purchase touchpoints and encourage shopper retention (Villanova et al., 2021).

The interaction effect from the current research poses different yet interesting insights. We found that when cognitive dissonance is high, consumers will experience less PPCR when the time spent to acquire a product is highly convenient. A retail manager ought to understand

that although high convenience while acquiring a product increases post-purchase consumer regret (Study 1), when negative product information is presented, a consumer experiences less post-purchase consumer regret when the process of acquiring is quick and convenient. Again, this can be explained by not ‘wasting’ much time acquiring a seemingly ‘bad’ product and places emphasizes on the varying ways that time is understood by consumers. Therefore, we suggest that retailers pair convenience systems such as Amazon’s “Just Walk Out Technology” or Sam’s Club’s “Scan As You Go” that encourage convenience while acquiring a product with a lenient return policy (Rokonuzzaman & Harun, 2021). This is recommended due to the possibility that a consumer comes across a negative product review. If they do, they may not experience as much regret because they did not ‘waste’ much time acquiring a seemingly ‘bad’ choice and may experience less PPCR due to having an abundance of time to ‘re-do’ their purchasing decision, thus being more satisfied with a retailer who has a lenient return when given the opportunity to choose an alternative product.

5.4. Future Directions

Throughout the formation of the current study’s research design, there were several iterations to the operationalization of the time vs. money effect in hopes of finding an initial significant relationship between time vs. money and PPCR. As mentioned before, previous research that looked into the time vs. money effect was tested on positive prosocial behavior (Han et al., 2020; Macdonnell & White, 2015; Mogilner & Aaker, 2009; Namin, 2014), but this is the first research of our knowledge to test this effect with negative feelings and behaviors. Due to this novel approach, time was conceptualized in two different ways- the time spent with a product and the time spent acquiring the product. Both did not yield significant results, thus leading to the use of the shopping convenience and price judgements scales to serve as a proxy

for the time vs. money effect. Future research that seeks to look into this effect on negative feelings and behaviors may look into conceptualizing time in a different way, such as purchase timing or attitudes over a duration of time (Cooke, 2001; Johnston, 1981).

The way in which the current research studied the relationship between time vs. money and cognitive dissonance on PPCR was through the acquisition of over-ear headphones as the purchasing product. Again, the reason why headphones were chosen for the current research is because of the involvement that electronics hold in purchasing attitudes and behaviors (Ferreira et al., 2021). However, future research could look into various product categories such as luxury products to predict that if studying this effect with other product categories would yield different results. We predict that products must be highly important when cognitive dissonance is high (Mattia et al., 2021), so that luxury products could strengthen the current effects as they are often seen as part of a consumer's extended self (Wu et al., 2015), are known for its' high quality, value, and worth (Ko et al., 2017), and luxury clothing has been studied with the time vs. money effect in prior research (Mogilner & Aaker, 2009).

5.5. Limitations

The present study had some limitations which should be addressed to ensure more effective research in the future. First, in regard to external validity, this research study had participants imagine themselves narrowing down, choosing, purchasing, and consuming a pair of headphones out of 3 options that were pre-selected by the researchers. Although the manipulation checks proved to be successful, this research tested PPCR on perceived purchasing behavior rather than actual purchasing behavior. By testing the effects on actual purchasing behavior, we could have perhaps found significance with the time vs. money effect by having participants recall a time in which they actually expended time and/or money in the process of

acquiring a product and assess with better confidence the extent, if any, that this effect produces actual post purchase consumer regret.

In addition to actual purchasing behavior, the lack of a sufficiently large sample size is a limitation to the results of the current study. Each study comprised about 100 participants, but with a larger sample size, specifically with Study 3, as it would have allowed a more precise estimate of the power. Adequate power reduces the chances of Type II errors and increase the likelihood of discovering more meaningful findings (Levine et al., 2011). Another limitation to the current study is that we cannot state causation nor the generalizability of the results, rather just the relationship and association between variables because of the regression analyses in Study 1 and 3. Therefore, our findings suggest interesting insights, but we cannot definitively state that shopping convenience causes PPCR, rather than shopping convenience predicts PPCR. Additionally, Study 3 resulted in a low coefficient of determination for the shopping convenience, price judgements, and brand loyalty model ($R^2 = .304$). This represents that the independent variables are not explaining much variation of the dependent variable in the model, despite being significant. With further research, researchers can potentially examine what other variables predict PPCR in greater variation.

Time and money, while differentiated on many facets such as their ability to produce personal connection and favorable attitudes, are both consumer resources that are needed to acquire a product (Mogilner & Aaker, 2009). Although they vary in how they are conceptualized, it is important that the amount of time and money expended within conditions are operationalized in an equal manner. To account for balance effects among conditions, the researchers equated 1 hour to 60 dollars; however, this conversion was not backed by pre-testing, thus not having validity in the way time and money were operationalized. For the current

research to be replicated in the future, we suggest researchers to discover, through the use of pre-testing, the appropriate conversion of time and money and implement that into the research design.

Each consumer enters a purchasing decision with their own unique product experiences and evaluations that can play a large role in one's overall satisfaction. The Expectancy Disconfirmation Model highlights this idea by proposing that a consumer has pre-purchase evaluations about the product category and product performance before it is even bought. These baseline evaluations are often compared to the post-purchase product performance to then create product satisfaction (Chen-Yu & Lin, 2017). A limitation of the current research was that we did not measure the participants' baseline product expectations of over-ear headphones as a whole, nor their expectations of how the available headphone choices would perform based on their previous experience. Prior experiences such that the consumer was let down by headphones in general or had baseline expectations that the headphones were going to fail from the beginning could impact the extent to which a consumer experienced post-purchase consumer regret, outside of the variables tested in this study.

Additionally, it is important to note that we did not consider the effects that dissonance reduction could have on individuals. Due to cognitive dissonance being such an aversive state, one is motivated to reduce the uncomfortable psychological state that results from the inconsistency among cognitive elements (O'Keefe, 2015; Simon et al., 1995). One way that an individual can reduce dissonance is by decreasing the importance of cognitions in the dissonant situation, also known as trivialization (Simon et al., 1995). In the current research design, consumers who were in the high dissonance condition may have attempted to reduce their dissonance by decreasing the importance of the negative product reviews. By doing so, it could

have influenced the results, such that in Study 3, when a consumer experienced high cognitive dissonance when time was highly convenient, they may have experienced less PPCR due to trivializing the importance of that product reviews hold on their overall product evaluations.

The current research sought to understand what contributes to a consumer experiencing post-purchase consumer regret. To mimic a true purchasing experience from browsing to purchasing to increase external validity, in the hypothetical situation, participants were asked to choose one pair of headphones out of the three options, that had varying product features to choose which pair is most desirable to them based on the product features of each one. Along with the product features was the brand of each one. The brands that were used were Beats, Bose, Sony (in Study 2) and Bang & Olufsen (in Study 1, and 3). Due to these brands being well-known in this product category, we sought to control brand loyalty. Although we found that brand loyalty has significant effects in all three studies, the main effects were still significant with brand loyalty in the model. This is not as much of a limitation as it is an interesting finding and can signal to future researchers and retail managers to pay close attention to the consumer-brand relationship quality and how that relationship impacts one's overall product evaluation and feelings (Huang et al., 2016).

5.6. Conclusion

Post-purchase consumer regret is a unique paradigm that sets itself apart in the consumer behavior literature due to its focus on process regret and outcome regret. To our knowledge, this research is the first to examine the process of acquiring a product using the time vs. money effect, while also understanding how cognitive dissonance can influence the outcome of post purchase products evaluations. Although opposite of hypothesized effects, we can suggest from the interaction effect that a consumer who experiences high dissonant feelings about their purchased

product will experience less post purchase consumer regret when the time spent to acquire a product is highly convenient. With more research on this topic of understanding what antecedents and consequences affect post-purchase consumer regret, we can reduce the 428 billion in returned merchandise significantly to better the outcomes for both consumers and retailers alike.

APPENDIX A. QUESTIONNAIRES

Table A.1. Post Purchase Consumer Regret

Construct	Items	Source
PPCR	PPCR1 I should have chosen one of the other products and not the one I chose.	Lee & Cotte (2009)
	PPCR2 I regret the product choice I made.	
	PPCR3 I now realize how much better my other choices were.	
	PPCR4 I regret choosing my product because it does not seem as important to me as I thought it would.	
	PPCR5 Please select 'Agree'.	
	PPCR6 The product I chose was the right decision.	
	PPCR7 I feel that too much time was invested into my decision.	
	PPCR8 I would choose the same product if I were given the opportunity to choose again.	
	PPCR9 I regret not putting enough thought into my decision.	

The instrument was measured with a seven-point Likert scale.

Table A.2. The Consumer-Based Brand Equity Inventory

Construct	Items	Source
CBBE	CCBE1 I am loyal to this brand.	Schivinski & Dabrowski (2014)
	CBBE2 If I need to buy this product, I will buy this brand.	
	CBBE3 If similar products cost the same, I will still choose this brand.	
	CBBE4 If someone offers me a competitive brand, I will still buy products from this brand.	

The instrument was measured with a seven-point Likert scale.

Table A.3. The Shopping Convenience Scale

Construct	Items	Source
SC	SC1 It was easy to reach the store to buy my headphones.	Moeller et al. 2009
	SC2 I was able to quickly gain access to my headphones.	
	SC3 The atmosphere in the store was stressful.	
	SC4 It did not take much time to buy my headphones	
	SC5 I was able to complete my purchase quickly	

The instrument was measured with a seven-point Likert scale.

Table A.4. The Perceptions of Price Value

Construct	Items	Source
PJ	PJ1 I think that given the headphone's attributes, it is a good value for the money.	Suri & Monroe (2003)
	PJ2 At the advertised price, I feel that I am getting good quality headphones for a reasonable price.	
	PJ3 If I bought these headphones at the advertised price, I feel I would be getting my money's worth.	

The instrument was measured with a seven-point Likert scale.

APPENDIX B. STUDY MATERIALS

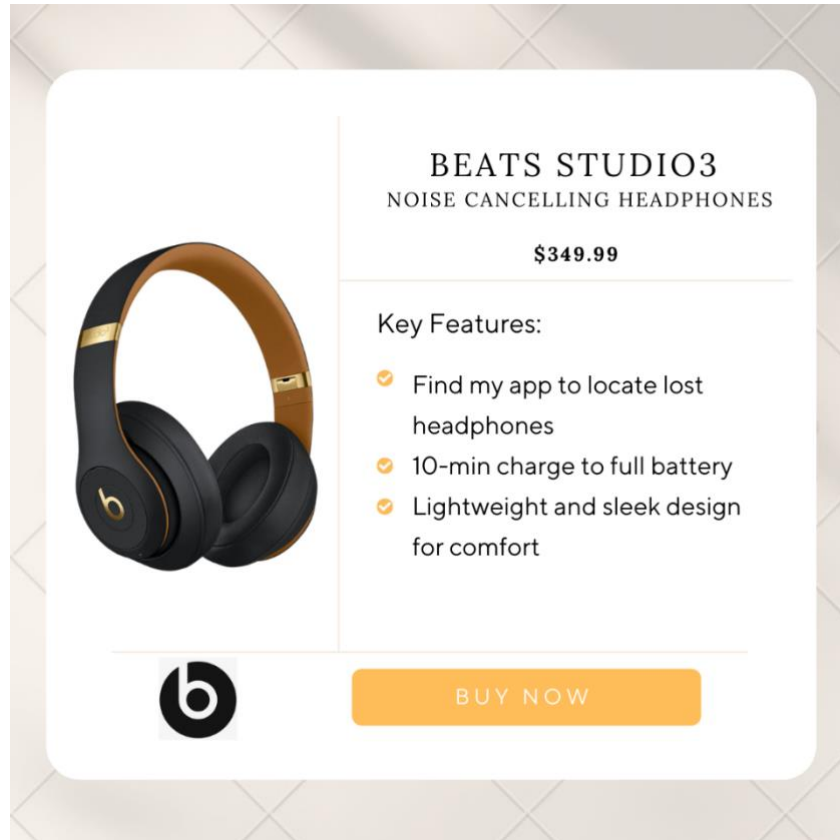


Figure B.1. Product Key Features

Beats Time

It takes you **approximately 6 hours** to acquire your desired Beats Headphones.

- You wait for **2 hours** in a long airport security line
- During the x-ray scan, your belongings sound the alarm, and they spend **another hour** screening you
- Then, it takes you **1 hour** to find a shop with noise-cancelling headphones in the large airport. While shopping, you spend **another hour** hour speaking to the salesperson about the specific features and testing out the incredible sound experience
- Lastly, it takes an **additional hour** to board the plane before you can finally enjoy your headphones



Figure B.2. Time Manipulation

Beats Money

The process of acquiring your desired Beats Headphones costed **approximately \$350 dollars**

- You review the price tag on the headphones before purchasing and see that it costs **\$350**.
- The salesperson at the airport store explains to you that your chosen headphones will be a **great investment of your money**
- You agree that the headphones are worth the money and purchase them, charging **\$350** to your credit card
- As you board the plane and take your seat, you review the receipt and confirm that the total charge is **\$350** before opening the box and putting on your new headphones



Figure B.3. Money Manipulation

Q200	
It takes you <i>approximately 2 hours</i> to acquire your desired Beats Headphones. While shopping in-store, you spend an <i>hour</i> speaking to the salesperson about the specific features and testing out the incredible sound experience. Then, it takes an <i>additional hour</i> to board the plane before you can finally enjoy your headphones.	
Beats Time Des. 1	★
Please describe how you feel about the <u>time spent</u> acquiring your chosen headphones? How does this experience make you feel?	
<input type="text"/>	

Figure B.4. Shopping Convenience

Beats Money Des. 1	
As a reminder, your desired Beats Headphones cost \$350 to acquire.	
Please describe how you feel about the <u>money spent</u> to acquire your chosen headphones? How does paying this price make you feel?	
<input type="text"/>	

Figure B.5. Price Judgements

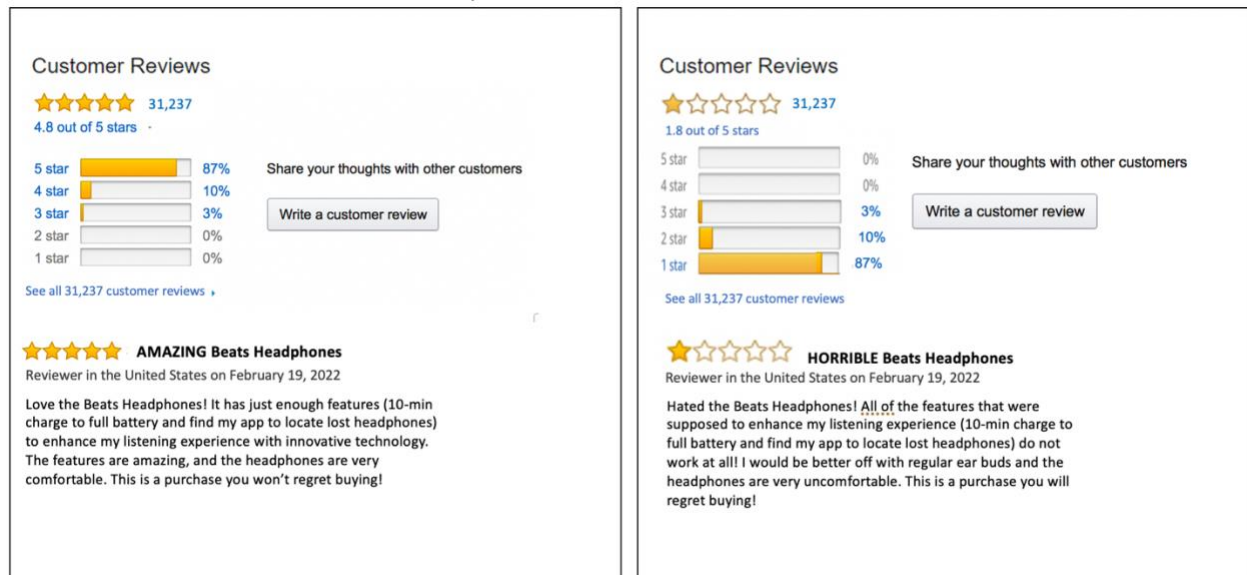


Figure B.6. Product Reviews

Beats Regret

After using your Beats Headphones during the long flight, you reach your tropical destination and deboard the plane. At the new airport, you walk past the same store you originally purchased your headphones and see the other choices again: **Bose and Bang & Olufsen.**

Are you committed to keep your Beats headphones, or will you consider exchanging them for another pair?

☐ Keep Beats

☐ Exchange for other choice

Figure B.7. Regret

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