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Cattedra Consumer Behavior

Preference Reversals: Hedonic and Utilitarian Considerations for Digital and Physical Products

Prof. Simona Romani

RELATORE

Prof. Deniz Lefkeli

CORRELATORE

Matr.752801

CANDIDATO

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Abstract

Firms producing digital product encounter a lower willingness to pay when seeking to charge equivalent prices of their physical counterpart (Atasoy and Morewedge, 2018). However, research proved that the greater WTP for physical goods reverses when consumers are asked to make a choice between the two product formats (Catapano et. al, 2022). Thus, when consumers are asked to choose, they prefer the digital format. The rationale underlying this preference reversal can be attributed to the convenience of the product format (Catapano et. al, 2022). However, a gap remains to explore: do all consumers value convenience to the same extent? This is where the current research advances with the aim of exploring when and under which circumstances consumers place a greater importance on convenience.

The first premise of this research revolves around the impact of the quantity of products to be purchased on consumers' consideration of convenience. Building upon existing research, it is hypothesized that when consumers are purchasing a larger quantity of products, they tend to value convenience more and thus end up choosing the one product format that is higher on those attributes and that can guarantee a greater convenience (Granger and Billson, 1972; Kelley, 1959). Indeed, digital products fulfill most dimensions of convenience that have been identified in prior literature (Catapano et. al, 2022). This relationship is hypothesized to be moderated by consumers activated consumption goal. Given the definition of hedonic and utilitarian consumption goal it is predicted that the importance of convenience is greater in consumers who prioritize functional and practical objectives such as those with a utilitarian consumption goal. Conversely, for individuals driven by pleasure and enjoyment, namely those with a hedonic consumption goal, convenience is expected to hold comparatively a lower importance. Results show that there is a significant effect of the activated consumption goal, specifically, consumers with a greater quantity to be purchased are more likely to choose a digital product format when their consumption goal is utilitarian. Moreover, as expected the importance that consumers place on convenience is greater when the activated consumption is utilitarian. Given these results, both theoretical and managerial implications are outlined, providing firms within the digital industry with insights on how to leverage their marketing messages and develop promotional strategies.

Key words: digital goods, product formats, preference elicitation, consumption goal

Preface

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1. Introduction

1.1 Problem Background

As the digital economy continues to surge ahead, consumers are experiencing a shift in the way they access services, information, and goods. Digital goods offer a host of benefits that differentiate them from physical goods. The digital version of products and services has brought improvements to the life of consumers and their welfare. They are not subject to wear out from usage, are easily transmutable, allow for personalized consumption experiences, and can be easily manipulated. Moreover, they are just one click away from consumption and are highly accessible, reducing transaction costs for both consumers and firms (Atasoy and Morewedge, 2018).

Despite the many advantages of digital commodities and their increase in consumption, businesses repeatedly discover that consumers value and are willing to pay far more for physical goods than their digital counterparts (Atasoy and Morewedge, 2018). These results identify a source of lost value through digitization which can be recovered if goods are made visually resemble their physical counterparts (Atasoy and Morewedge, 2018). Therefore, companies producing digital products will encounter a lower willingness to pay when seeking to charge equivalent prices for both physical and digital goods. Although willingness to pay (WTP) is frequently used to elicit preferences, in the marketplace consumers typically express their preferences by choosing (Catapano, Shennib, Levav, 2022). Indeed, research proved that the greater WTP for physical goods reverses when consumers are asked to make a choice between the two product formats (Catapano et. al, 2022; Atasoy and Morewedge, 2018).

The rationale underlying this preference reversal can be attributed to the convenience of the product format. The process of making a choice is a qualitative task, which consequently prompts consumers to assign significantly greater importance to the prominent attribute (Catapano et. al, 2022). Indeed, digital products' prominent attribute is convenience. Digital products are convenient because (1) are easy to use and acquire, (2) avoid wasting time and effort, and (3) generally designed to make life simpler. Convenience is defined as anything that adds to one's comfort or saves work and is useful, handy, or helpful (Brown and McEnally, 1986). Moreover, due to their characteristics, digital products can be easily consumed from anywhere at any time, reducing possible transaction costs (Catapano et. al, 2022). Therefore, now firms must face a new challenge and understand when consumers are choosing, namely preferring, convenience.

The concept of convenience is multifaceted and has been extensively studied in the literature. Yet, could the importance of convenience change as a function of quantity? Convenience considerations are closely related to quantity to be purchased considerations (Simonson, 1990). When making a decision about the quantity of items to purchase, the concept of predicted utility plays a greater weight. Consumers consider various factors when predicting utility, including those related to quantity considerations (Simonson, 1990). Kelley's (1958) study cites the example of consumers choosing the size of a piano relative to the dimensions of their home as a case where convenience plays a crucial role. This is an example of how convenience is an important factor to consider when making decisions about quantity. The author suggest that the unit size of a product can significantly affect consumers' choice and convenience considerations. Following a similar reasoning, I propose that also when purchasing a greater quantity of products consumers value convenience more leading them to choose the digital product format. Therefore, in the current research it will be reasonably assumed that different quantities to be purchased (either a small or high quantity) can influence the selected product format when convenience considerations are important to consumers.

The question at hand is whether the relevance of convenience applies to all types of consumers. Despite a growing recognition that consumer choices are driven by utilitarian and hedonic considerations and goals (Batra and Ahtola, 1990; Mano and Oliver 1993), no prior empirical investigation has explored the extent to which convenience perception influences product selection among hedonic and utilitarian-driven consumers. While earlier studies have reported that convenience, particularly in relation to service, is valued in both utilitarian and hedonic settings (Wong, 2021), this current research focuses on convenience as the primary driver of product format selection for utilitarian-oriented consumers.

Hedonism and utilitarianism pertain to both product attributes and consumers' consumption objectives. Hedonic product attributes are more sensory and imagery-evoking (Hirschman and Holbrook, 1982). Thus, hedonic consumption is primarily motivated by a pursuit of affective factors, such as aesthetic or sensual pleasure, fantasy, and enjoyment. Consequently, it is expected that hedonically driven consumers would prioritize the hedonic pleasure of owning a physical format over the convenience of a digital one (Hirschman and Holbrook, 1982; Atasoy and Morewedge, 2018). For instance, being generally interested in psychology and choose to read a book in its paper format because of the hedonic self-fulling desire of reading and the pleasure derived from the tactile experience of physically holding it.

In contrast, utilitarian attributes form an integral part of those products whose consumption is predominantly driven by cognitive, instrumental, and pragmatic considerations (Batra and Ahtola, 1990; Mano and Oliver 1993). Furthermore, utilitarian consumption is primarily functional and oriented toward achieving practical and utilitarian objectives (Hirschman and Holbrook, 1982; Strahilevitz and Loewenstein; 1998). Consequently, products that offer convenience, such as digital product formats, can be framed as highly utilitarian due to their ability to fulfill practical needs and assist consumers in attaining their goals with maximum ease and efficiency (Catapano et. al, 2022).

Recent research has demonstrated that technology is more likely to be viewed as competent when utilized for utilitarian purposes (Longoni and Cian, 2020). Consumers were demonstrated to be more likely to trust technology and digitally reviewed recommendations when their consumption goal was primarily focused on practicality and usefulness, such as when booking a trip for work compared to when booking a trip for their own pleasure. Consequently, technology is perceived to be more reliable in utilitarian context (Longoni and Cian, 2020). Following this reasoning and given that digital products are inherently embedded with technology, this research aims to explore whether also in the context of product formats consumers driven by a utilitarian goal will be choosing technology and opt for the digital counterpart of a physical product. Therefore, building upon the previous example of an individual interested in psychology, it is possible to suppose that a university researcher aiming to write an academic paper, would be more likely to choose a psychology book in e-format. Therefore, in the current research it is argued that also in the context of product formats, utilitarian driven consumers are more likely to perceive technology as a better mean to fulfill their goal. For instance, an academic researcher would value more the autosaving functionality when taking notes or the word-search functionality of digital books because interested in enhancing productivity and efficiency. In this scenario, the researcher is assumed to have a greater emphasis on the functional objectives and aspects necessary to conduct a research, and therefore assumed to be more likely to place a greater importance on those attributes of digital products related to convenience considerations.

All in all, this research advances based on the idea that even though the consumption of a single product can combine both hedonic and utilitarian dimensions (Batra and Ahtola, 1990), consumers will choose the one product format that most fits their consumption goal. Therefore,

the importance of convenience applies to utilitarian-oriented consumers who prioritize practical and functional objects but not hedonically driven one.

1.2 Problem statement

That being said, the problem statement can be defined as:

What is the effect of an increase in the quantity to be purchased on the choice between a digital and physical product format? How is this relationship mediated by a consumer's perception of convenience and what is the moderating effect of different consumption goals (hedonic vs. utilitarian)?

1.2.1 Research Questions

The central problem statement will be answered by building on the following research questions:

1. *Does an increase in the quantity to be purchased affect individuals' choice between the digital vs. physical format of a good?*

2. *What is convenience? And how does it mediate the relationship between quantity to be purchased and the product format choice?*

3. *To what extent is the relationship between quantity to be purchased and consumers' choice between physical and digital goods moderated by consumers' consumption goals (hedonic vs utilitarian)?*

1.3 Research Approach and Data

First, to answer the problem statement and its research questions a comprehensive examination of existing literature was conducted. Previous literature on the topics was used to establish connections between the constructs and formulate the empirical research hypotheses. Second, experimental research was performed based on a Qualtrics questionnaire. This study consists of 2 (quantity to be purchased: 1 vs. 4) x a 2 (consumption goal: hedonic vs. utilitarian) between-subject design. The levels of *consumption goals (utilitarian vs hedonic)* were manipulated and respondents were randomly assigned to one of those combinations. For instance, part of the participants was randomly assigned to a scenario where they had to read a psychology book with either a utilitarian goal (study for a university class) or a hedonic goal (for their own interest). Moreover, for both consumption goals, the quantity to be purchased

was defined as either equal to 1 or 4, resulting in 4 experimental conditions. Afterward, given one of the abovementioned settings, each participant was asked to choose one format (physical vs. digital) and to fill in a questionnaire to determine their judgment regarding the convenience of the chosen format. Finally, once the data were gathered, they were analyzed by the means of an ANOVA.

1.4 Relevance

1.4.1 Academic Relevance

Answering the afore-mentioned research questions contributes to different literature streams. First, considering that convenience is one attribute that explains why consumers preferred digital goods more often in a direct choice (Catapano et. al, 2021), the proposed study would contextualize such results and demonstrate that a reversal in preferences for digital formats depends on consumers' considerations and activated consumption goals. As such proving that convenience, even when prominent, does impact utilitarian-oriented consumers but does not reverse the preferences of those who are hedonically driven. Therefore, it further develops the framework considering consumers' preferences regarding digital product formats and provides more insights into when convenience plays a relevant role in consumers' decision-making.

Second, the proposed study would contribute to the existing body of literature on consumer behavior and the notion of compatibility (Tversky, Sattath, & Slovic, 1988) by showing the relationship between consumers' goals and the compatibility of different product formats. Previous research has primarily focused on the notion of compatibility applied to the relationship of (1) attributes and tasks (Nowlis & Simonson, 1997), (2) consumption goals and tasks (Fischer et. al, 1999), and (3) consumption goals-attribute and psychological traits (Chernev, 2004). Given that product attributes serve as the means that consumers use to accomplish their goals (Levav, Kivetz, and Cho, 2010) and that different product formats are substitutes because they satisfy a similar need (e.g., reading a book) the current study explores the compatibility between consumers' consumption goals and different product formats. Therefore, the current research shows that the tendency to prefer physical (digital) formats depends on consumers' hedonic (utilitarian) consumption goals.

Finally, previous research suggests that the quantity to be purchased during a single shopping occasion can serve as a significant determinant of consumers' purchasing behavior (Kelley, 1958). However, no research has ever explored whether the choice of a product formats can be

influenced by a higher quantity to be purchased and how it interacts with consumers' consumption goals. In this research it is hypothesized that when consumers are purchasing a greater quantity of products and they need to predict their future utility greater importance on convenience considerations is put in place (Simonson, 1990; Granger and Billson, 1972; Kelley, 1959). With convenience being of greater importance, consumers with a utilitarian consumption goal will be more likely to choose a digital product format as it is the one that offers greater convenience.

1.4.2 Managerial Relevance

Considering that an entire class of information product formats is emerging, these research findings are significant not only from a theoretical standpoint but also from a strategic and tactical perspective. In a broader sense, the findings of this study contribute to the efficient usage of the marketing mix, more specifically regarding promotions. Results suggest that marketers should consider the specific attributes of their products and target consumers with a complementary consumption goal when developing promotional strategies. Promotions are one of the major marketing mix variables and have been studied broadly. Thus, literature on the topic reports a different impact of promotions on hedonic and utilitarian purchases (Chandon, Wansink and Laurent, 2000; Kivetz and Zheng, 2017). More specifically, quantity promotions are generally more effective in justifying purchases of utilitarian products (Kivetz et. al, 2017). Therefore, given that consumers' complementary product format with a utilitarian consumption goal is digital, and that an increase in the quantity to be purchased further increases such preference, marketers should favor selling digital information goods, such as textbooks, using quantity promotions. For example, marketers could offer a "buy 5 and get a 10% discount" promotion for digital textbooks.

Catapano et. al (2022) argued that when consumers are faced with the choice between digital and physical goods, the primary consideration is convenience, which tends to favor the selection of the digital version of a product. As a result, the authors argue that marketers should place greater emphasis on convenience in promoting digital products. However, based on the current findings, convenience is significant only for consumers that are driven by a utilitarian consumption goal, and in the case of hedonic usage, convenience will no longer be able to reverse choices. Thus, because these forces push in opposite directions, we expect managers to horizontally differentiate the products emphasizing convenience for digital products greater in utilitarian attributes. For example, the digital format of a textbook could be advertised for its quick access, ease of portability, and cost-effectiveness.

2. Literature Review

In this chapter, we establish the theoretical framework for the current study. The objective of this chapter is to review the existing literature and formulate research hypotheses that can be tested empirically. Initially, we define the relationship between product convenience and the chosen format. Subsequently, we explore the role of the quantity to be purchased and its impact on product format preferences. Finally, we examine all the relationships within the context of consumers' consumption goals. The chapter concludes by presenting the conceptual model and expected outcomes.

2.1 Product Convenience and Digital Products

In the domain of consumer behavior research, it is crucial to recognize the heightened significance that convenience holds for modern-day shoppers (Brown and McEnally, 1992; Kelley, 1958). Most broadly, convenience refers to attributes that decreases the time and effort required by consumers during both the acquisition and usage phases (Brown and McEnally, 1992; Anderson and Shugan, 1991; Kelley, 1958). The convenience construct involves product characteristics, such as size, preservability, packaging, and design, that mitigate the time and energy consumers spend during the purchasing, storing, and utilization phase (Anderson and Shugan, 1991; Kelley, 1958).

Convenience is a multifaced construct that can include various dimensions (Brown, 1989). However, more important for our theorizing are four key dimensions of convenience: temporal, spatial, acquisition, and usage convenience (Brown, 1989; Brown and McEnally, 1992; Roy, Shekhar, Lassar, and Chen, 2018). Temporal convenience refers to the extent to which a product or service saves time or reduces effort (Brown and McEnally, 1992). For example, a product that can be easily and quickly accessed, used, or consumed without requiring significant time would be considered temporally convenient. Spatial convenience refers to the time and effort involved in traveling to a retail center (Roy et. al, 2018). For instance, a retail center that is easily accessible and located in proximity to the consumer would be considered spatially convenient. Acquisition convenience refers to the general ease of acquiring the product. It focuses on transactional aspects of acquiring the product such as the availability of multiple purchase channels (Singh and Swait, 2017) or flexibility in payment options (Roy et. al, 2018). Whereas the usage dimension refers to products that are more convenient for consumers during the consumption journey (Brown, 1989).

Remarkably, digital product formats not only align with but fulfill most dimensions of convenience that have been identified in prior literature on the topic (Brown et al., 1992; Anderson et al., 1991; Kelley, 1958; Catapano et. al, 2022). By offering consumers a unique level of accessibility and flexibility, digital product formats have emerged as an attractive option for shoppers seeking convenience in both their consumption and purchasing experiences (Catapano et. al, 2022). This is due to the fact that digital products often have fewer restrictions on their access and consumption compared to physical products, both in terms of time and location (Catapano et. al, 2022). Thus, convenience regarding technology-oriented products, such as digital product formats, has been defined as the extent to which individuals can perform a task at any time or place with ease (Chang, Yan & Tseng, 2012). Here, there is a clear link on how much are valued the temporal and spatial dimensions of convenience when it comes to technology-oriented products. For example, digital products like e-books, offer temporal and spatial convenience by allowing consumers to access content immediately in time by just clicking to the content and without the need to physically visit a library or bookstore. Consequentially, digital product formats satisfy both the abovementioned temporal and spatial dimensions of convenience. Therefore, this research will examine the importance placed on convenience attributes and dimensions, namely the importance on convenience considerations.

Therefore,
H1: The reason why consumers choose digital product format is because of the importance they place on convenience considerations.

2.2 Quantity to be purchased and Convenience Considerations

When choosing, consumers often face the dilemma of predicting their future preferences (Tversky and Kahneman, 1981). In fact, the consumption of products often occurs at a time that is distant from the purchasing moment. As a result, consumers need to rely on their prediction of future experience utility (Tversky et. al, 1981). This is where the concept of predicted utility comes into play. Essentially, it is an estimate of the future satisfaction or happiness a decision-maker expects because of a previously taken decision (Kahneman and Snell, in press; March 1978). Nevertheless, the decision is further complicated when the quantity to be purchased in a product category increases (Simonson, 1990). This research builds on the notion that when consumers predict the utility of purchasing a higher quantity of products, they tend to value convenience more, therefore they tend to place a greater importance on those attributes related to convenience considerations. This argument is

developed based on two distinct studies that examine quantity and convenience considerations from different perspectives but converge on the same rationale: convenience is highly valued and prominently considered across various facets of quantities, such as products' packaging and physical dimensions.

First, while it may seem logical from an economic perspective to always purchase the largest package size to maximize value and minimize costs, research has shown that people also consider convenience when making purchasing decisions (Granger and Billson, 1972). Convenience is particularly relevant when considering package size, as larger quantities are often associated by consumers with increased difficulty in handling, requiring more shelf space, and frequency of purchase. As a result, consumers may not choose the largest package size unless it is clear that it provides the best value (Granger and Billson, 1972). Building on the inconvenience of big package size it is expected that also an increase in the quantity to be purchased leads consumers to similar convenience considerations such as difficulties in handling. For instance, consider a scenario in which a book enthusiast intends to purchase multiple books. He will face the inconvenience of carrying a stack of heavy books during travel or daily commutes. In contrast, opting for books in digital format allows the individual to effortlessly carry an extensive library on a single device. Therefore, it is expected that when considering the purchase of multiple items, consumers are likely to prioritize convenience, which leads them to choose the product format that is most prominent on that attribute, namely the digital.

Second, convenience is an intricate construct that encompasses various dimensions such as the product size (Kelley, 1959). To investigate the dimension of convenience and quantity Kelley (1959) presents an example of how convenience influences consumers' decisions when it comes to purchasing products of a specific size. More specifically, he considers the size of a piano relative to the dimension of one's own home size. Here, he underlines how considerations about the inconvenience of having an unproportionally big piano compared to a small house are made by consumers. This example highlights how also quantity considerations relative to size can significantly impact choice decisions. Similarly, when purchasing a larger quantity of a physical product, such as a book or CD, consumers may need to consider its physical size and storage requirements. Conversely, opting for the digital format eliminates these concerns, making it more convenient for consumers to purchase and store larger quantities of a product. Consequently, it is predicted that when purchasing in larger quantities consumers that can

choose between two different product formats will prefer the digital one as it mostly fits quantity-convenience considerations. All in all, it is crucial to consider that a greater importance on convenience drives consumers with a large quantity to be purchased in choosing the digital product format. Nonetheless, when decision-makers are faced with the need to choose and compare two equally valued alternatives, such as one that satisfies the same need (e.g., reading), they tend to prefer the one that is superior in their perceived most important attribute (Koukova et. al, 2012). Therefore, it is reasonable to expect that the convenience offered by the digital format is further accentuated when the quantity to be purchased increases and that consumer will place a greater importance on it. This will consequentially lead to its preference and choice.

Thus,
H2a: Consumers that are purchasing a higher (lower) quantity of products are more likely to choose the digital (physical) format.

H2b: A greater importance on convenience considerations leads consumers that are purchasing a higher (lower) quantity of products to be more likely to choose the digital (physical) format.

2.3 Consumption goal: hedonic and utilitarian

Hedonic and utilitarian product attributes refer to two types of product features that consumers consider when making purchasing decisions. On the one hand, hedonic product attributes are related to the sensory and affective experiences that a product can provide (Hirschman and Holbrook, 1982). These attributes are typically associated with products that are used for pleasure or enjoyment, such as luxury goods, entertainment products, or indulgent foods (Hagtvedt and Patrick, 2009; Botti and McGill, 2011). Examples of hedonic product attributes include color, scent, taste, texture, design, and packaging (Lageat, Czellar, and Laurent, 2003). On the other hand, utilitarian attributes are associated with products that can fulfill practical and functional objectives. Examples of utilitarian product attributes include durability, efficiency, and reliability (Hirschman and Holbrook, 1982; Strahilevitz and Myers; 1998). Yet, it is significant to note that products can have both hedonic and utilitarian attributes to varying degrees (Batra and Ahtola, 1990).

More important for our theorizing, however, are the considerations regarding different hedonic and utilitarian consumption goals. Even when consuming the same products or services, consumers may have different goals, such as pursuing pleasure (hedonic goal) or

accomplishing a practical purpose (utilitarian goal, Bridges and Florsheim, 2008; Chernev, 2004). Hedonic consumption is typified by affective gratification and sensory pleasure and is assessed based on the intrinsic enjoyment derived from the product (Botti and McGill, 2011; Crowley, Spangenberg, and Hughes, 1991). Conversely, utilitarian consumption is motivated by functional goals and instrumental benefits and is assessed based on the extent to which the product serves as a means to an end (Botti and McGill, 2010). Batra and Ahtola (1990) proposed that consumers purchase and consume for two reasons: consummatory (hedonic) gratification, which is mostly derived from innate emotional and sensory attributes, and instrumental (utilitarian) reasons, which are concerned with the expected outcomes.

Considering the established definition of hedonic and utilitarian consumption goals it is comprehensible that convenience in the relation of different quantities to be purchased and choice of digital (physical) products may not be salient to all consumers. Utilitarian-oriented consumers are primarily seeking products or services that fulfill functional and practical needs (Batra and Ahtola, 1990;). Building on both the definition of utilitarian-oriented consumption and convenience, it is reasonable to associate both within the same framework. Indeed, the importance of convenience is predicted to be greater in consumers who prioritize functional objectives over hedonic and emotional ones. Convenience plays a significant role in utilitarian consumption as it enables consumers to accomplish their goals more efficiently. Nonetheless, in past research when measuring the utilitarian aspects of consumers' attitudes, dimensions such as usefulness, handiness, productivity, and efficiency are considered (Voss, Spangenberg, and Grohmann, 2003). Thus, the present study aims to contribute to the existing literature on convenience by establishing a definitive correlation between convenience and utilitarian consumption in the digital realm. This research endeavors to enhance our understanding of how a utilitarian consumption goal influences the importance that consumers place on convenience considerations in digital environments and, thereby, provide significant insights into consumer behavior in the ever-evolving digital landscape.

In retail, prior research proved that convenience plays a significant role in perceived value and loyalty in both hedonic and utilitarian retail settings (Wong, 2021). Specifically, the research has primarily focused on examining the impact of the five service convenience dimensions (i.e., decision convenience, access convenience, transaction convenience, benefit convenience, and post-benefit convenience) on the outcome variable retail store loyalty considering two different retail settings: hedonic and utilitarian (Wong, 2021). Results indicate that store loyalty

in department stores (hedonic) was predicted by post-benefit convenience, suggesting that hedonic shoppers prioritize pleasure and engagement in their shopping experience. In contrast, in supermarkets (utilitarian stores) store loyalty was predicted by decision and access convenience. Indicating that utilitarian shoppers prioritize efficiency and effectiveness (Wong, 2021). However, the present research adopts a broader approach by investigating whether utilitarian and hedonic consumption goals influence the importance that consumers place on convenience when purchasing different product formats. Given the already mentioned characteristics of digital product formats, this study suggest that it is unlikely to observe comparable convenience considerations when consumers choose between the two. Therefore, it is anticipated that it would be unlikely for convenience to be a prominent attribute in both digital and physical product formats with an activated utilitarian consumption goal. The reasons for the unlikeliness of a similar outcome to occur in the context of the current thesis are twofold.

Firstly, based on the notion of compatibility, which suggests that consumers choose products based on their activated consumption goal and their alignment with the product attribute, it is expected that a utilitarian consumption goal would lead consumers to focus on the most relevant attribute of the digital alternative, namely convenience (Chernev, 2004). Additionally, previous studies have demonstrated that individuals, when presented with two equivalent options that fulfill the same need, have a propensity to opt for the alternative that exhibits superiority in the most significant attribute (Koukova et. al, 2022). Based on this, it is expected that consumers with a utilitarian consumption goal will place a greater importance on those attributes related to convenience, therefore their convenience considerations will be greater.

Second, digital products represent a technological advancement that has contributed significantly to the enhancement of consumers' lives (Catapano et. al, 2022). Past research demonstrated that utilitarian-oriented consumers tend to place greater trust in technology. Specifically, individuals perceive that technology recommendation systems are more competent than humans to assess utilitarian attribute value and generate utilitarian-focused recommendations (Longoni and Cian, 2020). Consequently, technology is perceived to be more competent in facilitating utilitarian-focused consumption. This perception is due to consumers' inclination to place greater trust in technology when it comes to utilitarian consumption (Longoni and Cian, 2020). Building on this knowledge it is expected that consumers that are driven by a utilitarian consumption goal will also perceive the digital product format as more convenient due to its embedded technological characteristics. For instance, individuals with a

utilitarian consumption goal would prefer taking notes for an exam on a e-book since it allows them to store them on the cloud and mitigate the risk of losing them. Based on these insights, it is reasonable to anticipate that digital product formats would also be regarded as better mean to achieve utilitarian consumption objectives when compared to traditional paper formats.

Given the previous considerations about the perception of convenience for consumers with a utilitarian consumption goal, it remains to explore why would the digital product format not be appealing to hedonic-oriented consumers. The answer relies on the following argument. Atasoy et. al (2018) debated that consumers are willing to pay more for the physical counterpart of a product due to the sense of ownership it provides. This is supported by prior research, which has shown that psychological ownership can increase the perceived value of a product (Bonaventure and Chebat, 2015). However, our current research goes further in exploring the relationship between psychological ownership and consumer preferences. I argue that the consumption goal plays a crucial role in this relationship, meaning that the physicality of the product that provides the most psychological ownership is mainly valued by a hedonically driven consumer. This I also demonstrated by previous studies that have shown that the hedonic versus nonhedonic nature of a product can moderate the effect of psychological ownership (Shu and Peck, 2011). Specifically, this study demonstrates that psychological ownership is greater for hedonic products. This has been proved via a forfeiture experiment, where consumers were asked to choose which product (one hedonic and one utilitarian) to give up (Shu and Peck, 2011; Dhar and Wertenbroch, 2000). Results proved that in a forfeiture setting consumers value most hedonic products as they can further advance a sense of psychological ownership. However, the current research would consider a different elicitation setting, specifically a choice task, and have as an enabler of the psychological ownership the physical product.

Therefore, linking and advancing both the findings of Atasoy et al. (2018) and Shu et. al (2011) it is expected that consumers driven by a hedonic consumption goal will posit greater importance on the one product format that is able to garnish more psychological ownership, namely the physical one. Thus, it is argued that a hedonic consumption goal plays a crucial role when choosing the physical product format due to the greater feeling of ownership it provides. As such, this thesis would further advance Atasoy and Morewdge's (2019) research contextualizing in which situations the sense of ownership given by the physical product matter the most to consumers, namely with an activated hedonic consumption goal.

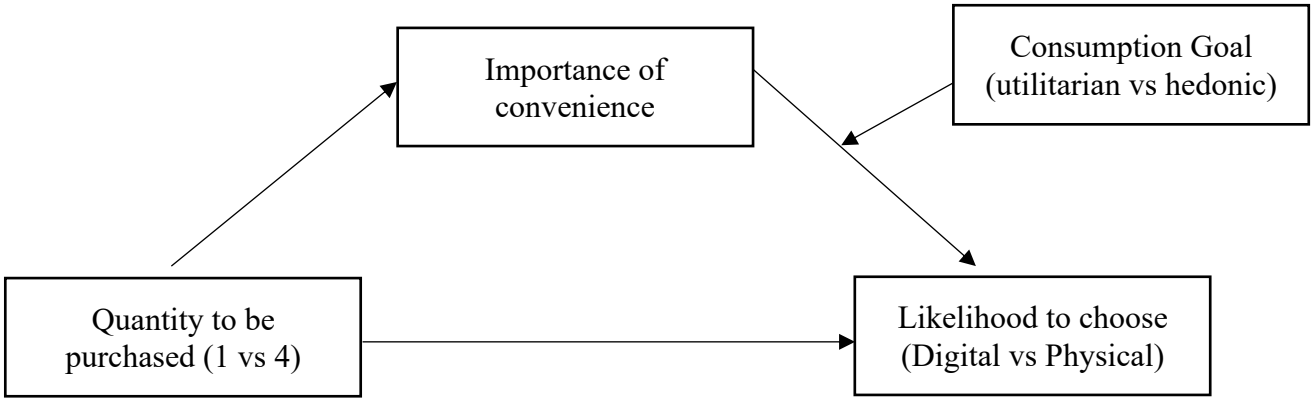
Given the previous considerations the following hypothesis were outlined:

H3a: Consumers with a Utilitarian goal (Hedonic goal) are more likely to choose Digital (Physical) product formats

H3b: Consumers with a Utilitarian goal (Hedonic goal) are more likely to choose Digital (Physical) product formats when selecting a larger quantity is being purchased, but not when they are purchasing a small one.

2.4 Conceptual Model

Based on the relationships described above, the following conceptual model has been developed:



3. Research Methodology

3.1 Study Overview

The aim of the present study is to measure the effect of an increase in the quantity to be purchased on the chosen product format (digital vs. physical) and assess the mediating role of convenience. The relationship will be moderated by the consumption goal that was identified as either utilitarian or hedonic. The most appropriate methodology for this research is an experimental design. Consequently, this study consists of a 2 (quantity to be purchased: 1 vs. 4) x 2 (goal: hedonic vs. utilitarian) between-subject experimental design. Experiments enable researchers to establish a causal relationship between the independent and dependent variables, as well as measure, manipulate, and control variables within the model (Stevens, Loudon, Ruddick, Wrenn, & Sherwood, 2005). Thus, in this study, the experimental design allowed the manipulation of the quantity to be purchased and the established consumption goal. This approach enabled the opportunity to examine the impact of different combinations among these variables on consumers' choice between the digital or physical counterpart of the same product.

Reips (2000) classified experiments into three types: laboratory, field, and online experiments. Online experiments are low on their external validity, meaning that they may not be as effective in predicting behavior in external settings as field experiments. However, in the current research is important to prioritize internal validity as it helps establish a clear cause-and-effect relationship between variables (Sekaran & Bougie, 2016). Moreover, two notable advantages of online experiments are the ability to reach a large number of participants quickly and at a lower cost compared to laboratory or field experiments (Reips, 2000). Therefore, the study will be conducted through the means of an online investigation.

3.2 Pre-test

To ensure that an effective stimulus is used in the experiment a pilot study is conducted prior to the online experiment. A pre-test was conducted for a total number of 50 respondents with two goals. First, I aimed to determine a realistic manipulation of quantity by understanding the maximum number of books that respondents typically purchase in a single occasion. Thus, respondents were asked to indicate the maximum number of books that they ever bought on one purchase occasion. The average number indicated by all respondents was used to develop the stimuli. Second, I aimed to assess that convenience is something that consumers place a greater importance on when the quantity to be purchased increases. Respondents were asked

to compare their likelihood to value convenience when buying a single item to when purchasing multiple items. In order to clearly define convenience four statements were built based on the previously discussed dimensions (see paragraph 2.1) , namely, acquisition, temporal, spatial, and usage convenience (Brown, 1989; Brown and McEnally, 1992; Roy et. al, 2018). The full pre-test can be found in Appendix 1.

Dimension	**Operationalization**
Acquisition	I value how easy it would be for me to complete my purchase
Temporal	I value how much time it would require me to reach the point of purchase
Spatial	I value how distant is the store from where I am located
Usage	I value how easy it would be for me to consume the product

Figure 1 Operationalization of the convenience dimensions in the pre-test

3.2.1 Pretest Results

The number of respondents collected for the pretest was equal to 57 (18 males, 39 females, $M_{age} = 23.82,\ \mathrm{SD} = 2.53$). The pretest was conducted with two goals. First, it was conducted to accurately select realistic stimuli for the experimental study. Therefore, respondents were asked to indicate their maximum quantity of books purchased within a single occasion. Results indicate that on average respondents purchased four books within a single purchase occasion ($M_{q_books} = 3.59,\ \mathrm{SD} = 2.03$). Given this result in the main study, the quantity to be purchased manipulation was either equal to 1 or 4. Where 4 indicated the highest and most reasonable quantity possible for a single purchase occasion considering information goods such as books.

The second goal was to investigate whether convenience considerations are important to consumers when the quantity to be purchased increases. Respondents indicated a 7-point Likert scale questionnaire the importance that they place on convenience, that is, convenience consideration, when purchasing one item compared to multiple ones (see Appendix 1 for the full questionnaire). Descriptive statistics and inferential statistics were used to analyze the data (see Appendix 2 for the full results).

The mean score for the overall convenience considerations for an increase in the quantity to be purchased was $M_{conv} = 5.58,\ \mathrm{SD} = .81$. A one-sample t-test was conducted to determine whether the mean score for convenience considerations was significantly different from the midpoint of the scale (4). Results showed a significant difference between the mean score and the hypothesized population mean ($t(56) = 14.74$, $p < .001$), suggesting that respondents had a significantly higher preference for convenience considerations when the quantity to be purchased is higher. This result suggests that consumers have a strong preference for convenience when purchasing larger quantities of products.

3.3 Manipulation Design

In the online experiment, a 2x2 factorial, between-subjects design is used. The treatment variables were Quantity to Be Purchased (1 vs 4) and Consumption Goal (Hedonic vs Utilitarian). Subjects were randomly assigned to one of the four experimental conditions. The employment of a factorial design in the present study facilitated the assessment of the impact of the independent variable on the dependent variable, both in isolation (main effect) and in conjunction (interaction effect; Sekeran & Bougie, 2016).

The chosen stimuli for this study is a book, which falls under the category of information goods. This decision is grounded on the emergence of an entire class of information product in digital format (Koukova et. al, 2012), and the consequentially managerial need to discern the conditions that drive consumers towards the preference for the convenience offered by digital formats.

The moderation effect of the hedonic (utilitarian) consumption goal was framed by asking participants to consider one of two different situations. Participants in the hedonic condition were asked to consider consider reading a book for their own pleasure and interest. Indeed, hedonic consumption motivation suggests that purchases are inspired by the desire for pleasure, joy, and fun offered by the ownership and use of products, and therefore the primary goal of this motivation is to satisfy the hedonically motivate appetite (Hirschman and Holbrook, 1982). In contrast, participants in the utilitarian condition were asked to consider reading a book for university. Therefore, utilitarian consumption was framed as task-oriented and driven by consumers' efforts to solve problems and address needs and wants through the cognitive processing of an information product (Hirschman and Holbrook, 1982; O'Curry and Strahilevitz 2001).

The dependent variable, namely the choice task was presented to participants through the means of their choice likelihood (CL). CL is elicited on a scale from “not at all likely” to “extremely likely” and thus is not expressed on a scale compatible with market valuations (Catapano et. al, 2022). As a result, the CL is similar to a discrete choice task that would have considered three different options for the respondent to select: “Digital format” on one end, “Indifferent” in the middle, and “Physical format” on the other end. Therefore, following Catapano et. al (2022) previous research, in order to evaluate consumers' format choice their purchase intentions were evaluated on a slider scale that went from 0 to 70. A rating of 0 indicated an extremely high likelihood of choosing the physical format, while a rating of 70 indicated an extremely high likelihood to choose the digital format.

A between-subjects design, which exposes participants to a single treatment condition, gave the possibility to minimize the possibility for participants to detect the study’s objective and subsequently alter their response pattern, namely the demand effect (Rosenthal, 1976). Moreover, it reduced the possibility of undermining the validity of study findings with carryover effects, whereby participants’ previous responses in one condition influence their subsequent behavior in the following one (Christensen, 2007). Finally, considering that information goods such as books are part of a product class that does not belong to an everyday purchase category, it was deemed more logical and realistic to have respondents exposed only to a single purchase need.

First, consumers were exposed to either 1 or 4 books to be purchased combined with either a hedonic and utilitarian consumption goal and asked to select their likelihood to choose the digital and physical format. Second, as already done in previous literature to indicate the characteristics of both physical and digital goods, respondents were asked to assess their importance on convenience and sense of ownership when choosing a digital (physical) product format (Catapano et. al, 2022). However, differently from Catapano et. al (2022) research, the current study asked respondents to assess their convenience importance when choosing across the already mentioned four key dimensions on a 7-point Likert scale. Following our theorizing, results were expected to indicate a greater importance on convenience for consumers in the utilitarian condition with more than one item to be purchased.

3.4 Covariates

Alongside the focal variables, two control variables have been included in the questionnaire, providing the opportunity to employ them as covariates. As the covariates can also be a predictive or explanatory variable of the dependent variable, the first covariate aimed to assess the general likelihood of respondents to purchase and consume information goods, specifically books. To capture this, respondents were asked to indicate their average number of books read within a year. Since digital formats are less familiar (Koukova et. al, 2018), individuals who are not avid readers may also be less likely to choose an e-book. The second control variable's aim was to understand whether the respondents had ever read a book in its digital format. Moreover, they were asked to assess their knowledge of the available functionalities that an e-book provides on a 5-point Likert scale. This was done in order to assess whether the judgments were made having general knowledge about e-books and their functionalities.

3.5 Sampling

To determine the appropriate sample size for an experiment it is necessary to consider a number of factors. In order to do so the software program G*Power was used. An effect size of $f = 0.2$ was assumed following Cohen's (1992) considerations with regard to a medium effect size. The probability of a type I error, namely the alpha level, was set at $\alpha = 0.05$, as is often the case for research. The beta level is the probability of concluding that there is no effect when in fact there is one. Recommendations about the beta level indicate one as equal to 0.2 or higher (Cohen, 1992). However, in this study, a beta of 0.9 is required to achieve the desired power of 80%. Given the above the aspired sample size was 70 participants for each condition, resulting in a total of 280. This also satisfied Sawyer and Ball's (1981) rule of thumb, which indicates that at least 30 participants are needed per experimental condition. Subjects for both the pretest and the main experiment were approached by means of convenience sampling from the personal network of the researcher. The disadvantages of such a method mainly refer to the impossibility of a fully representative sample of the population being studied. However, it provided relatively easy and efficient access to the required data (Sekeran & Bougie, 2016). Therefore, invitations to take part in the experiment were sent to the participants via Facebook, LinkedIn, and email.

3.6 Analysis

In order to test the hypotheses, an ANOVA will be used. ANOVA is widely used to test for significant differences in the means of multiple groups or conditions. It is useful when there are multiple levels of an independent variable, as in our case two different quantity to be purchased conditions equal to either 1 or 4 books, and a continuous dependent variable. As aforementioned the dependent variable is continuous as it was asked to respondents to indicate their likelihood to purchase one of the two formats. Overall, ANOVA provides a useful framework for partitioning the variance in the dependent variable into different sources of variation, such as the quantity to be purchased, the consumption goal, and their interaction.

3.7 Experiment Set-up

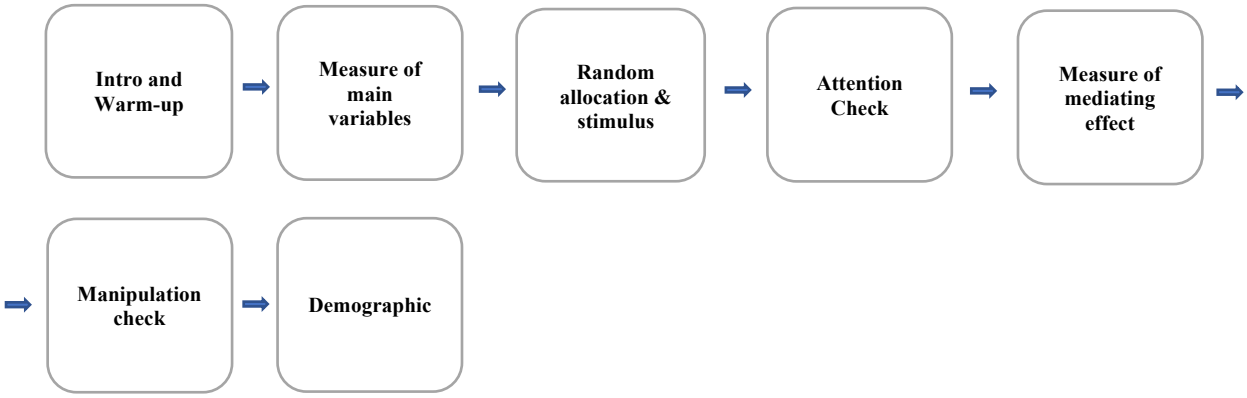
The set-up of the main experiment was equal across all groups and comprised of 7 stages. The questionnaire (See Appendix 1), constructed in the online software Qualtrics, started with an overall introduction to the study and asked participants to carefully read the scenario for which they would have been asked questions about. After, subjects were randomly allocated to one of the four experimental conditions and exposed to the stimulus (i.e. quantity to be purchased and consumption goal manipulation). Then, they were asked to assess their likelihood to choose the product in either its digital or physical format on a slider scale from 0 to 70. Where 0 indicated they were most likely to choose the product in its physical format and 70 in its digital format.

On the next page, attention checks were included in the survey and respondents were asked to indicate the quantity they were asked to imagine being purchased and the reason why they were purchasing the product – their consumption goal. Moreover, to assess the importance on both convenience and ownership considerations and measure their mediating effect, respondents were asked to assess the importance they placed on both constructs. After, the controlled variables were included. As such, respondents were as asked the average of books they usually within a year and whether they had a general knowledge on the possible functionalities of an eBook.

Going further, questions including the manipulation checks were asked. First it was explained to participants the difference between an hedonic and a utilitarian consumption goal and then they were asked to indicate whether they perceived reading a book for university (and for their own pleasure) as either an hedonic or a utilitarian consumption goal. In this way, the accuracy of the chosen stimuli was assessed.

Before ending the questionnaire, participants answered demographic questions and were asked to indicate gender, age, education level and country of residence. On the final page, participants were informed that they had reached the end of the questionnaire and were thanked for taking part of it.

The sequence of the experiment can thus be summarized in the following overview:



4. Results

This chapter outlines the results of the data analysis. First, the results of the pretest are closely examined. Second, we focus on the process of preliminary data analysis, during which I looked at the sample structure and measurement scales, assessed the success of the manipulation, and checked the assumption for ANOVA and mediation analysis. Thirdly, the key findings of the study are presented by focusing on the main effects between the variables in the conceptual model, alongside the hypothesized moderating and mediating effects. Thirdly, conclude this chapter by summarizing the findings and by providing an overview of the hypothesis tests and their respective results.

4.1 Preliminary Data Analysis

4.1.1 Data inspection and sample structure

A total of 222 respondents completed the online questionnaire. However, 8 respondents were removed from the sample because they did not correctly fill out the attention check. Inspection of a boxplot of the mean scores for likelihood to choose between the digital and physical format revealed no significant outliers. Therefore, the sample size for the analyses was n = 214. Each experimental conditional had been assigned to a minimum of 49 and a maximum of 63 participants, therefore the treatment groups were fairly equal in size.

As for the sample structure, 71.5% were female (n = 153), 27.6% were male (n = 59) and 1% preferred not to declare their gender (n = 2). The mean age of participants was 27.01 (SD = 10.68), with the youngest respondent being 19, and the oldest being 71 years old. In total, 71.5% (n = 153) of all participants were between 20 and 26 years old. The subjects were from 12 different countries; the two nations in which respondents mostly reside were Italy (66,5%, n = 137) and the Netherlands (19.16%, n = 41), resulting in 85.66% of all participants living in either of these two nations. Regarding the level of education, with 67.76% (n = 145) of the participants having completed either a Bachelor's or a Master's degree, the sample consisted of fairly highly educated subjects. In sum, a possible explanation for these demographic factors might be the fact that mainly people from the personal network of the researcher were invited to participate in the experiment.

4.1.2 Attention and Manipulation check

The experiment included four different conditions, which consisted of two levels of quantity to be purchased (1 vs. 4) and two levels of consumption goal (hedonic vs utilitarian). First, since that for the quantity to be purchased there is not a measured scale, an attention check was used to filter out inattentive participants. This ensured that only participants who noticed the independent variable as intended were included in the study. A total of 8 respondents were excluded, resulting in a total of 214 participants. Second, to assess the accuracy of the chosen consumption goals, participants were asked to evaluate the degree to which they perceived reading a book for university (for their own pleasure) as a hedonic (utilitarian) consumption goal using a slider. Results indicated a significant negative correlation between the two measurement variables ($r = -.218$, $p < .001$). Therefore, it was possible to build a single scale averaging results for both stimuli. In order to do so, the slider assessing the hedonic stimuli was reverse-coded. This approach enabled the use of an independent sample t-test to compare the mean scores on the consumption goals between respondents in the hedonic ($M = 60.02$; $SD = 8.15$) and the utilitarian consumption goal ($M = 62.41$; $SD = 5.54$). There was a significant average difference between the two groups ($t(212) = -2.537$, $p < .012$). Given these results, it was possible to continue with the analysis of the main study.

4.1.3 Randomization check

A randomization check was conducted to assess the effectiveness of the random assignment procedure in ensuring that the participants in each group were comparable at baseline.

Specifically, a one-way ANOVA with age as the dependent variable was conducted. The results of the ANOVA revealed no significant differences in age between the groups ($F(3, 210) = .202$, $p = .895$). In addition to age, randomization checks were also conducted for gender and education to ensure that these variables were qually distributed between the treatment and control groups. For gender, there were no significant differences between the groups (χ^2 (6, N = 214) = 2.96, p = .81). In terms of education, the groups were also found to be similar (χ^2 (9, N = 214) = 4.43, p = .88). These findings suggest that the randomization procedure was successful in creating comparable groups on key demographic characteristics.

4.1.4 Reliability of Convenience Measurement Scale

Since the study was conducted without the use of a pre validated scale a Confirmatory Factor Analysis (CFA) was required to validate the convenience scale (Lance and Vandenberg, 2022). The KMO measure of sampling adequacy was .76 (i.e., $\alpha \geq 0.6$), which indicated that the data were suitable for factor analysis. Bartlett's test of sphericity was significant ($\chi^2 = 332.99$, df = 6, $p < .05$), further supporting the suitability of the scale. One factor was found (Eigenvalue = 2.7) which is larger than one, also the scree plot (see Appendix 2) showed a clear elbow at 2, indicating that a 2-factor model was the most appropriate. The cumulative percentage variance explained was acceptable because equal to 65.09 %. The results of the Confirmatory Factor Analysis (CFA) provide evidence for the construct validity and reliability of the convenience scale used in this study. Moreover, before conducting the data analysis the reliability of the multi-item measurement scale for convenience was assessed to check whether it would be appropriate to summarize the different scale items into one variable with a mean score. To this end, Cronbach's alpha of the four multi-item scale used in the questionnaire was evaluated ($\alpha = 0.81$). When looking at the score, it is evident that the scale provides at least acceptable internal consistency (i.e., $\alpha \geq 0.7$) (George and Mallery, 2003). This result enabled the opportunity to continue the analyses with the mean score of the scale item (See Appendix 2).

4.1.5 Checking Assumption for ANOVA

In order to be eligible for ANOVA, four assumptions need to be met with regards to the data: independence of observations, equality of error variance between treatment groups, the normality assumption, and the homogeneity of regression slopes (Hair, Black, Babin, & Anderson, 2014).

First, given the between-subjects design of the experiment, the observations were assumed to be independent. Second, it was of interest check the equality of the error variances across different treatment groups (i.e., homoscedasticity). Levene's Test of Equality of Error variances revealed heteroscedasticity ($F(3, 210)) = 7.182$, $p < 0.001$); in other words, we observed different error variances across the treatment groups. However, according to Hair et al. (2014) "a violation of this assumption has minimal impact if the groups are of approximately equal size" (p. 685), which was the case in this dataset.

Third, it was verified if the observations followed a normal distribution. The significant levels of the Kolmogorov-Smirnov and Shapiro-Wilk test were assessed for the *importance of convenience*. These tests results revealed a violation of the normality assumption (both $p < 0.001$). Also, a normality test was conducted to ensure the dependent variable *likelihood to choose* was normally distributed. Responses were split into two groups based on the likelihood of choosing either the physical or digital version of the product. For the physical group, the Shapiro-Wilk test revealed a non-normal distribution ($W = 0.85$, $p < .001$). Similarly, for the digital group, it showed a non-normal distribution ($W = 0.85$, $p < .001$). However, according to Norman (2010) and following the central limit theorem for samples with more than five observations per sub-group, the analysis is likely to yield accurate results even if the normality assumption is violated. Overall, given these results the use of ANOVA was possible.

4.1.6 Checking Assumption for Mediation Analysis

In addition, an evaluation of homogeneity of regression was conducted. Therefore, it was assessed if there was an interaction between the independent variable and the mediator, which is deemed undesirable for conducting mediation analysis. To this end, a regression analysis was conducted with the *importance of convenience* as the dependent variable and the *quantity to be purchased* as the predictor. Results revealed non-significant interaction effect ($F (1, 212) = .777$, $p = .379$). These results indicate that the effect of the quantity to be purchased did not predict the importance of convenience. Therefore, the homogeneity of regression assumption was met, and the main effects of the independent variable and mediator on the dependent variable, *likelihood to choose*, can be interpreted without concern for their potential interaction.

4.2 Main Study

4.2.1 Examination of the Relationships

Quantity to be purchased* & *Likelihood to choose* moderated by *Consumption Goal

A two-way ANOVA was conducted to first examine if the independent variable, *quantity to be purchased,* has a significant effect on the dependent variable *likelihood to choose between a digital and physical format*. Likewise, the study also intends to test the moderating role of *consumption goal* in such relationship. It was hypothesized that a hedonic and utilitarian consumption goal will significantly moderate such relationship, leading respondents with a utilitarian consumption goal and a higher quantity to be purchase (i.e., 4 books) to be more likely to choose the digital product format.

First, as postulated in the hypothesis 2a, it was explored whether respondents with a higher quantity to be purchased would be more likely to choose the digital product format. Results reveal that the difference between means was not significant ($M_{quantity_1}$ = 22.82, SD = 24.42; $M_{quantity_4}$ = 29.29, SD = 25.72, (F (1, 210) = .611, p = .577). This points out that there is not a significant difference in their likelihood to choose between a digital and physical product format for groups that were exposed to different quantity to be purchased. As a result, the second hypothesis (H2a) cannot be accepted. Second, the main effect of consumption goal was explored. Participants in the utilitarian and hedonic condition reported their likelihood to choose a digital product format ($M_{utilitarian} = 34.14$, SD = 26.89; $M_{hedonic} = 17.30$, SD = 19.90). However, results were not significant (F (1, 210) = 5.57, p = .255). Therefore, the null H3a hypothesis must be accepted.

Third, inspection of the mean scores for the interaction effect was statistically significant (F (1, 210) = 4.47, p = .036, η^2 = .021). On the one hand, inspection of the mean scores revealed that there were statistically significant differences in the preference for digital products when selecting four items in the level of the utilitarian consumption goal (M_{Q4_U}= 39.60, SD = 26.33; M_{Q1_U}= 27.39, SD = 26.28; t (112) = 2.46, p = .015). Therefore, consumers with a utilitarian consumption goal are more likely to select a digital product format when their quantity to be purchased is higher. On the other hand, mean score difference for the hedonic group was not significant (M_{Q4}= 16.56, SD = 18.33; M_{Q1}= 18.06, SD = 21.58; t (98) = 2.46, p = .710). Given these results the H3b can be partially accepted. This finding still underscores the importance of considering the interaction between the quantity to be purchased and the activated utilitarian

consumption goal as a key factor in shaping consumer preferences when choosing between a digital and physical counterpart.

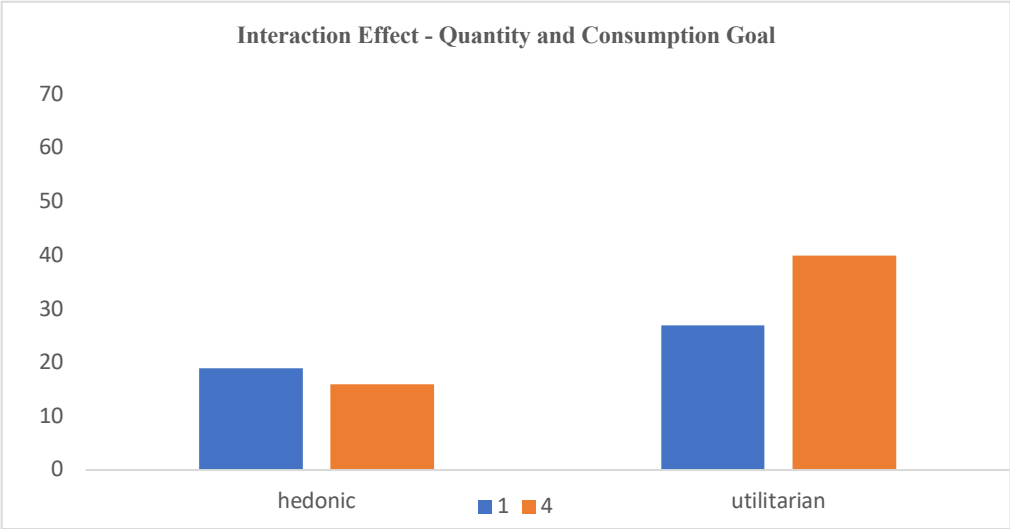


Figure 2 Main Study ANOVA Results including quantity to be purchased and consumption goal on likelihood to choose.

Importance of Convenience

A multiple linear regression was conducted with the *importance of convenience* and *sense of ownership* as the independent variables and the *likelihood to choose* as the dependent variable while controlling for the *quantity to be purchased*. The model was statistically significant ($F(3,211) = 20.37$, $p < .001$). The overall model explained the 22,5% of the variance in likelihood to choose ($R^2 = .225$). Specifically, the results indicated a significant positive correlation between the importance of convenience and likelihood to choose ($r = .239$, $p < .001$), suggesting that individuals who place a higher importance on convenience are more likely to choose a digital format. Therefore, the H1 can be accepted. On the contrary, there was a significant negative correlation between sense of ownership and likelihood to choose ($r = -.366$, $p < .001$), indicating that consumers who put a greater importance on the sense of ownership towards the product are more likely to choose the physical format. However, it was concluded that *importance on convenience* and *sense of ownership* just partially mediate the relationship between *quantity to be purchased* and *likelihood to choose* as also the quantity presents a significant result (estimate = - 8.023, $p = .010$). Given these results, it was decided to conduct a moderated mediation with both *importance of convenience* and *sense of ownership* as parallel mediators.

Moderated Mediation – Parallel Mediator: Convenience & Ownership

The present study employed moderated mediation analysis using the PROCESS model 14 developed by Hayes to examine the potential influence of purchase quantity (i.e., 1 or 4 books) on consumer preferences for digital versus physical products, mediated by both importance of convenience and sense of ownership.

The indirect effect of purchase quantity on the likelihood of choosing a digital product format through convenience considerations was also not significant for the hedonic and utilitarian consumption goal, being respectively b = .321, SE = .557, CI [-.364, 1.830] and b = .946, SE = 1.10, CI [-1.164, 3.289]. This finding does not support the hypotheses H2b, which suggested that a greater importance on convenience considerations would lead consumers that are purchasing a higher (lower) quantity to products to be more likely to choose the digital (physical format).

The interaction between importance of convenience and exposed consumption goal in the relationship between the quantity to be purchased and likelihood to choose was partially significant (b = 4.58, SE = 2.75, t(1,212) = 1.66, p = .0975). To further explore the nature of the interaction, a simple slope analysis was conducted. The results showed that the indirect effect of importance of convenience on likelihood to choose was significant when the consumption goal was utilitarian (b = 6.94 SE = 1.76, t(1,212) = -1.11, p < .001), but not significant when the consumption goal was hedonic (b = 2.36, SE = 2.12, t(1,212) = -1.11, p = .26). These results suggest that the strength and direction of the indirect effect of the importance of convenience on likelihood to choose depends on the level of the consumption goal. Specifically, the mediating effect is stronger when the consumption goal is utilitarian, but weaker or nonexistent when is hedonic. These results suggest that when consumers have a utilitarian consumption goal, convenience is more important factor, and it is likely to influence their preference for digital product formats. Given these findings, results for the moderated mediation were analyzed. However, this relationship was not significant (B = .1959, SE = .61, CI = [-1.0999,1.5160].

The interaction between sense of ownership and exposed consumption goal in the relationship between the quantity to be purchased and likelihood to choose was not significant (b = -1.52, SE = 1.82, t(1,212) = -.834, p = .405). Following it was explored the moderated mediation which revealed that the indirect effect of the purchase quantity on likelihood to choose through

sense of ownership was not significantly different for utilitarian versus hedonic consumption goals (b = .1959, SE = .6092, 95% [-1.0893, 1.6062]).

4.2.2 Additional Findings: Levels of convenience

Given the significant result of convenience on likelihood to choose product formats, it was decided to conduct a multiple regression to understand which of the explored dimensions plays the most important role in shaping consumers preferences. However, only three of the four convenience dimensions were included in the analysis. The decision was made to exclude the usage dimension because as it was formulated it was found to be more general compared to the others and it may have captured a broader concept of convenience that was not specific to any dimension (See Appendix 2). Therefore, including it would have introduced unnecessary noise. The mean score for ease in the acquisition process and in the temporal convenience were found to be $M_{acquisition} = 5.27$ (SD $= 1.40$) and $M_{temporal} = 5.27$ (SD $= 1.41$). The lowest mean score was for spatial convenience ($M_{spatial} = 5.25,$ SD $= 1.42$). Yet, it is essential to note that while the score was the lowest, it was still above the midpoint of the scale, indicating that it is still an important factor for consumers (t(213) = 12.85, p = <.001). Moreover, the different dimensions of convenience were regressed on the likelihood to choose. As expected, the overall model was significant (F(3,210) = 4.40, p =.005). However, none of the three dimensions had a statistically impact on the likelihood to choose the product format. These results align with prior research that captures convenience as a multifaced concept that includes all temporal, spatial and acquisition dimensions (Brown et. al, 1992). This suggests that in the case of product formats there is not a dominant dimension driving the decision-making process.

4.3 Summary of findings

First, the study found that the quantity of items and consumption goal interact to influence consumers' preferences for product formats. Consumers with a utilitarian goal were more likely to choose digital products when selecting four items. Meanwhile differences in the quantity to be purchase for respondents in the hedonic conditions were not significant. These results, even if are not as expected, still highlight the importance of considering the interaction between quantity and consumption goal in shaping consumer preferences. Second, results indicate that placing greater importance on convenience is positively associated with and significantly influences the likelihood of choosing the digital format, whereas the importance of sense of ownership is negatively correlated with it. Third, the study found that the interaction between

the importance of convenience and the consumption goal was partially significant in influencing the relationship between the quantity of items to be purchased and the likelihood to choose a digital format. The mediating effect of the importance of convenience on the likelihood to choose was stronger for utilitarian consumption goals and weaker for hedonic consumption goals. Therefore, when consumers have a utilitarian consumption goal, convenience becomes a more important factor in influencing their preference for digital products.

Hypothesis	**Result**
H1: The reason why consumers choose digital product format is because of their convenience	Accepted
H2a: Consumers that are purchasing a higher (lower) quantity of products to be more likely to choose the digital (physical) format.	Rejected
H2b: A greater importance on convenience considerations leads consumers that are purchasing a higher (lower) quantity of products to be more likely to choose the digital (physical) format.	Rejected
H3a: Consumers with a Utilitarian goal (Hedonic goal) are more likely to choose Digital (Physical) product formats	Rejected
H3b: Consumers with a Utilitarian goal (Hedonic goal) are more likely to choose Digital (Physical) product formats when selecting 4 items, but not when they are selecting 1 item.	Accepted

Table 1 Summary of Results

5. Conclusion, Discussion and Outlook

In this last chapter, the most important findings are presented and discussed on the basis of existing literature. In addition, their theoretical and managerial implications are elaborated. Lastly, it touches upon limitations of the study and recommendations for future research.

5.1 Conclusion

The central question of this study was: *What is the effect of different quantities to be purchased on the choice between a digital and physical product format? How is this relationship mediated by a consumer's perception of convenience and what is the moderating effect of different consumption goals (hedonic vs. utilitarian)?*

First, it was tested whether different quantities to be purchased within a single purchase occasion would influence consumers' choice of the product format. Respondents were asked to imagine themselves having to purchase either one or four books, with the latter representing a considerably large amount for a single purchase occasion. Surprisingly, the results showed that the different quantities did not have a significant effect on the likelihood of choosing between different product formats. These insignificant findings could be attributed to two reasons. First, it is possible that the hypothesized construct was not valid, suggesting that quantities do not have an impact on product format choice through convenience considerations. This implies that digital products are not perceived as drivers of convenience when it comes to purchase a greater quantity of products. Finally, it is worth considering that the selected product may not have been the most appropriate to demonstrate the relationship between quantity and format choice.

Second, it was assessed whether convenience considerations would drive the relationship between the quantity to be purchased and the choice of a product format. Again, the results revealed that convenience considerations do not play a crucial role in influencing consumer choices with a greater quantity to be purchased when it comes to choosing products in digital formats. However, the interaction effect between quantity to be purchased and the activated consumption goal was partially significant. Specifically, when consumers had a utilitarian consumption goal, they were more likely to choose the digital format when the quantity to be purchased was higher compared to when it was smaller. Results for the hedonic consumption goal did not reveal a significant interaction. However, this may be because the chosen quantity to be purchased was not correctly selected. Instead, it may have been better to not consider

simply the mean value of the pretest but go above it considering the standard deviation. This approach would have better highlighted the high quantity being purchased, therefore better underscoring the importance of convenience.

Yet, both importance of convenience and sense of ownership were found to have a significant impact on the chosen product format by respondents. The results showed that consumers who prefer digital products value convenience more, while those who prefer physical products prioritize their sense of ownership. This finding prompted further exploration of whether convenience considerations were more prominent for a utilitarian consumption goal. Results reported a significant interaction effect between convenience considerations and the activated consumption goal. It was demonstrated that convenience considerations are stronger when the consumption goal is utilitarian, and that consumers purchasing a greater quantity of items are more likely to choose digital product formats when they have a functional consumption goal.

5.2 Theoretical Implications

Three are the theoretical contribution that the findings have on the current body of literature. First, the proposed study contributes on the existing body of literature on the notion of compatibility (Tversky et. al, 1988). Prior studies have predominantly examined the concept of compatibility in relation to various factors, including the relationship between (1) attributes and tasks (Nowlis and Simonson, 1997), (2) consumption goals and tasks (Fischer et. al, 1999), and (3) consumption goals-attribute and psychological traits (Chernev, 2004). The current study's findings provide nuances to the literature demonstrating that consumers' importance for convenience varies depending on the compatibility with their activated consumption goals. Specifically, when the consumption goal is utilitarian, the mediating effect of convenience is significant and leads consumers to be more likely to choose the digital product format. As a result, this finding leads to the second theoretical contribution, it advances the study conducted by Catapano et. al (2022) demonstrating that the reversal in consumers' preferences towards the digital product does not solely depend on the elicitation mode and considerations of convenience, but that it also differs based on the activated consumption goal, namely utilitarian.

Furthermore, this study extends the work of Catapano et. al (2022) by providing insights into the underlying reasons that influence consumers' preference for digital product formats. This study builds upon the concept of convenience as the most prominent attribute in digital products presented in Catapano et. al (2022) work. However, these results further advance

research by Catapano et. al (2022) contextualizing why and for which consumers the prominence of convenience attributes becomes relevant. On the one hand, the results of the regression analysis are consistent with Catapano et. al (2022) research demonstrating that the convenience attributes are more important for consumers when choosing a digital product format. On the other hand, the results of the moderated mediation delineate the circumstances in which consumers prefer the digital product format via a greater importance on convenience, namely with a utilitarian consumption goal. By contextualizing the relevance of convenience attributes, our study advances the understanding of consumers preferences for digital formats.

Finally, considering that previous studies were mainly focusing on quantity in the framework of convenience and predicting utilities (Simonson, 1990) the current results advance the literature by creating a causal link between quantity to be purchased and consumption goal consideration in the framework of product format. Results proved that the influence of quantity on consumers' preference for different product format is significantly dependent on the activated consumption goal. More specifically, consumers with a utilitarian consumption goal are more likely to choose a digital product format when purchasing a larger quantity of items compared to when purchasing a single one.

5.3 Managerial Implications

The current findings indicate consumers' consumption goal is a key factor in determining their importance on convenience considerations when selecting different product formats. Consumer with a utilitarian consumption goal, are more likely to value convenience considerations and choose a digital product format. It can be challenging for companies to differentiate their products based on consumers' consumption goal. However, knowing that products have hedonic and utilitarian attribute to varying degrees, it can also be that certain products have a greater likelihood to be consumed for a utilitarian (hedonic) consumption goal (Batra and Ahtola, 1990). Therefore, businesses can leverage these findings by offering personalized messages based on consumers' consumption goal to enhance their product's appeal. For example, if a company offers learning courses for coding languages, they can switch and provide their learning tools, such as books and classes, in a digital format to cater to consumers with a utilitarian consumption goal. When doing so they should really leverage their messages on how convenient it would to consume the classes from anywhere at any time (e.g., "Access our coding classes from the comfort of your own home, your favorite coffee shop, or even during your commute"). Overall, understanding the influence of consumption goals on product

format preferences can aid businesses in tailoring their offerings to meet the diverse needs and preferences of their consumers.

Furthermore, the study reveals that differences in the quantity significantly interacted with the utilitarian consumption goal. More specifically, when there is a larger quantity to be purchased consumers with a utilitarian goal are more likely to choose a digital product format. This finding has implication for activating different promotional strategies based on the number of products being sold and the nature of product being sold, with a focus on those that will be more likely to be consumed for a utilitarian purpose. Past literature reported that quantity promotions are generally more effective in justifying purchases of utilitarian products (Kivetz et. al, 2017). Building on past literature and in line with the results of the current study, marketers should consider employing quantity promotions when selling digital information goods such as textbooks. For instance, they could offer promotions like "buy 5 and get a 10% discount" specifically for digital textbooks. By leveraging quantity promotions, marketers can tap into the preference for convenience associated with utilitarian consumption goals. This strategy not only aligns with consumer preferences buy also provides an added incentive for consumers to choose the digital format over its physical counterpart.

5.4 Limitations

As do most empirical studies, also this one comes with its own limitations, which, in turn offer interesting opportunities for future research. The foremost limitation arises from the chosen stimuli for the independent variable (quantity to be purchased). Probably, it might have been more effective choosing a quantity above the resulting mean of the pretest. This could have been done either doubling the mean or considering the standard deviation (SD = 2.03). Consequentially, a quantity of 6 or 8 would have been preferred. This strategy would have drawn attention to the large quantity being purchased, emphasizing the significance of convenience. It might be that in such limitation relies also the reason why consumers with a hedonic consumption goal did not have a significant result when considering the different quantities to be purchased.

Second, using only a book as the chosen stimulus may limit the generalizability of the results. It would have been more advantageous to include at least two different products belonging to the information goods category, just as already done in the research of Koukova et. al (2012). For instance, by including both a book and a newspaper, significant findings would have

indicated the model's applicability across a variety of information products. Furthermore, this approach would have helped also in identifying differences within the same product category. For example, it is possible that a journal performs better on the likelihood of choosing the digital format compared to a book since it is most likely to be consumed on morning commute journeys.

Thirdly, the current study is limited by the characteristics of the sample. The convenience sampling method employed restricts the participants to individuals who are connected to the researcher's personal network. This approach resulted in a sample that is skewed towards Italian and Dutch participants with a relatively low mean age, thereby limiting the generalizability of the study's findings. Finally, the study was constrained by time and financial resources, necessitating the use of a self-administered online questionnaire, which precluded the control of extraneous influences that could be managed in a laboratory setting (Sekaran and Bougie, 2016). Despite the careful design of the questionnaire, it was not possible to control, for instance whether participants paid enough attention to the instructions in the questionnaire and if they filled it in a conscious manner. This might have caused some inaccuracies in the data.

5.5 Future Research

It could be argued that the independent variable did not have a significant effect on the likelihood to choose because the concept of quantity was not correctly framed. Perhaps it would have been more relevant to approach the notion of quantity from a different standpoint, namely quantity scarcity (Balachander and Stock, 2009). Recently, many brands have begun to launch limited edition (LE) products. When this happens, marketers implement two typical types of scarcity messages by framing the product as either limited in time (e.g., only available for 15 days) or limited in quantity (e.g., only 500 products available). Therefore, the study could have implemented the concept of quantity focusing on scarcity, as such giving the opportunity to explore whether consumers would have been more inclined to opt for the digital product format. Indeed, it is possible that the impact of quantity considerations with regards of consumers' predicted utility (Simonson, 1990) is more significant for products that are limited in availability . For example, limited-edition products, having a scarcity amount of quantity available, induce a fear of missing out (FOMO) among consumers, urging them to choose (Zhang, Jiménez and Cicala, 2020). Thus, maybe in the case of digital product formats, having a limited quantity available, would have prompt respondents to prefer the digital format due to

the possibility of being immediately available and consumed. Future research could explore and replicate the study using the abovementioned stimuli as representative of a quantity construct.

Furthermore, the insignificant results observed in the interaction between sense of ownership and the hedonic consumption goal when choosing product formats raises considerations for possible future research. It would be valuable to investigating the factors and mechanism that influence consumers with a hedonic consumption goal when it comes to choose a product format. While previous research has established that consumers' quantity considerations are impacted by factors such as convenience (Simonson, 1990) and it was proved to be true in the current study for utilitarian driven consumers, the specific ways in which the hedonic consumption goals may moderated the likelihood to choose a product format remains unexplored. A hedonic consumption relates to the multisensory, fantasy and emotive aspects of product usage experience (Hirschman et. al, 1982). Thus, it would worth exploring the relationship between the desire for a multisensory experience among consumers with a hedonic consumption goal and the characteristics of a digital product format. Past research proved that touch can contribute to the appreciation of a hedonic product design as it provides multisensory experience (Spence et. al, 2011). However, given that digital products lack the inherent capability to provide a tactile experience, future research could explore whether technological advancements, such as the implementation of augmented reality (AR), can influence the preference of hedonically oriented consumers towards digital product formats.

Summary

As the digital economy continues to advance, consumers are experiencing a shift in the way they access services, information, and goods. Digital goods offer numerous benefits that distinguish them from physical goods, such as easy transmutability, personalized consumption experiences, and high accessibility. However, despite the advantages of digital commodities, businesses have found that consumers often value and are willing to pay more for physical goods than their digital counterparts (Atasoy and Morewedge, 2018). These results identify a source of lost value through digitization which can be recovered if goods are made visually resemble their physical counterparts (Atasoy and Morewedge, 2018). Therefore, companies producing digital products will encounter a lower willingness to pay when seeking to charge equivalent prices for both physical and digital goods.

Although willingness to pay (WTP) is frequently used to elicit preferences, in the marketplace consumers typically express their preferences by choosing (Catapano, Shennib, Levav, 2022). Indeed, research proved that the greater WTP for physical goods reverses when consumers are asked to make a choice between the two product formats (Catapano et. al, 2022; Atasoy and Morewedge, 2018).This preference reversal can be attributed to the convenience offered by digital products (Catapano et. al, 2022). Convenience is a key attribute of digital goods as they are easy to use, readily accessible, and simplify various aspects of life. Additionally, digital products can be consumed from anywhere at any time, reducing transaction costs (Catapano et. al, 2022). Therefore, now firms must face a new challenge and understand when consumers are choosing, namely preferring, convenience.

The concept of convenience is multifaceted and has been extensively studied in the literature. Yet, could the importance of convenience change as a function of quantity? Convenience considerations are closely related to quantity to be purchased considerations (Simonson, 1990). When making a decision about the quantity of items to purchase, the concept of predicted utility plays has a greater weight. Consumers consider various factors when predicting utility, including those related to quantity considerations (Simonson, 1990). Kelley's (1958) study cites the example of consumers choosing the size of a piano relative to the dimensions of their home as a case where convenience plays a crucial role. This is an example of how convenience is an important factor to consider when making decisions about quantity. The author suggest that the unit size of a product can significantly affect consumers' choice and convenience considerations. Following a similar reasoning, I propose that also when purchasing a greater

quantity of products consumers value convenience more leading them to choose the digital product format. Therefore, in the current research it will be reasonably assumed that different quantities to be purchased (either a small or high quantity) can influence the selected product format when convenience considerations are important to consumers.

The question at hand is whether the relevance of convenience applies to all types of consumers. Despite a growing recognition that consumer choices are driven by utilitarian and hedonic considerations and goals (Batra and Ahtola, 1990; Mano and Oliver 1993), no prior empirical investigation has explored the extent to which convenience perception influences product selection among hedonic and utilitarian-driven consumers. While earlier studies have reported that convenience, particularly in relation to service, is valued in both utilitarian and hedonic settings (Wong, 2021), this current research focuses on convenience as the primary driver of product format selection for utilitarian-oriented consumers.

Recent research has demonstrated that technology is more likely to be viewed as competent when utilized for utilitarian purposes (Longoni and Cian, 2020). Consumers were demonstrated to be more likely to trust technology and digitally reviewed recommendations when their consumption goal was primarily focused on practicality and usefulness, such as when booking a trip for work compared to when booking a trip for their own pleasure. Consequently, technology is perceived to be more reliable in utilitarian context (Longoni and Cian, 2020). Following this reasoning and given that digital products are inherently embedded with technology, this research aims to explore whether also in the context of product formats consumers driven by a utilitarian goal will be choosing technology and opt for the digital counterpart of a physical product. Therefore, in the current research it is argued that also in the context of product formats, utilitarian driven consumers are more likely to perceive technology as a better mean to fulfill their goal. For instance, an academic researcher would value more the autosaving functionality when taking notes or the word-search functionality of digital books because interested in enhancing productivity and efficiency.

All in all, this research advances based on the idea that even though the consumption of a single product can combine both hedonic and utilitarian dimensions (Batra and Ahtola, 1990), consumers will choose the one product format that most fits their consumption goal. Therefore, the importance of convenience applies to utilitarian-oriented consumers who prioritize practical and functional objects but not hedonically driven one.

Literature Review

Product Convenience and Digital Products

Convenience is a multifaced construct that can include various dimensions (Brown, 1989). However, more important for our theorizing are four key dimensions of convenience: temporal, spatial, acquisition, and usage convenience (Brown, 1989; Brown and McEnally, 1992; Roy, Shekhar, Lassar, and Chen, 2018). Remarkably, digital product formats not only align with but fulfill most dimensions of convenience that have been identified in prior literature on the topic (Brown et al., 1992; Anderson et al., 1991; Kelley, 1958; Catapano et. al, 2022). By offering consumers a unique level of accessibility and flexibility, digital product formats have emerged as a highly attractive option for shoppers seeking ultimate convenience in both their consumption and purchasing experiences (Catapano et. al, 2022). This is due to the fact that digital products often have fewer restrictions on their access and consumption compared to physical products, both in terms of time and location (Catapano et. al, 2022). Thus, convenience regarding technology-oriented products, such as digital product formats, has been defined as the extent to which individuals can perform a task at any time or place with ease (Chang, Yan & Tseng, 2012). Here, there is a clear link on how much are valued the temporal and spatial dimensions of convenience when it comes to technology-oriented products. For example, digital products like e-books, offer temporal and spatial convenience by allowing consumers to access content immediately in time by just clicking to the content and without the need to physically visit a library or bookstore. Consequentially, digital product formats satisfy both the abovementioned temporal and spatial dimensions of convenience.

Therefore,

H1: The reason why consumers choose digital product format is because of the importance they place on convenience considerations.

Quantity to be purchased and Convenience considerations

When choosing, consumers often face the dilemma of predicting their future preferences (Tversky and Kahneman, 1981). In fact, the consumption of products often occurs at a time that is distant from the purchasing moment. As a result, consumers need to rely on their prediction of future experience utility (Tversky et. al, 1981). This is where the concept of predicted utility comes into play. Essentially, it is an estimate of the future satisfaction or happiness a decision-maker expects because of a previously taken decision (Kahneman and Snell, in press; March 1978). Nevertheless, the decision is further complicated when the

quantity to be purchased in a product category increases (Simonson, 1990). This research builds on the notion that when consumers predict the utility of purchasing a higher quantity of products, they tend to value convenience more. This argument is developed based on two distinct studies that examine quantity and convenience considerations from different perspectives but converge on the same rationale: convenience is highly valued and prominently considered across various facets of quantities, such as products' packaging and physical dimensions.

First, while it may seem logical from an economic perspective to always purchase the largest package size to maximize value and minimize costs, research has shown that people also consider convenience when making purchasing decisions (Granger and Billson, 1972). Convenience is particularly relevant when considering package size, as larger quantities are often associated by consumers with increased difficulty in handling, requiring more shelf space, and frequency of purchase. As a result, consumers may not choose the largest package size unless it is clear that it provides the best value (Granger and Billson, 1972). Building on the inconvenience of big package size it is expected that also an increase in the quantity to be purchased leads consumers to similar convenience considerations. Therefore, it is expected that when considering the purchase of multiple items, consumers are likely to prioritize convenience, which leads them to choose the product format that is most prominent on that attribute, namely the digital.

Second, convenience is an intricate construct that encompasses various dimensions such as the product size (Kelley, 1959). To investigate the dimension of convenience and quantity Kelley (1959) presents an example of how convenience influences consumers' decisions when it comes to purchasing products of a specific size. More specifically, he considers the size of a piano relative to the dimension of one's own home size. Here, he underlines how considerations about the inconvenience of having an unproportionally big piano compared to a small house are made by consumers. This example highlights how also quantity considerations relative to size can significantly impact choice decisions. Similarly, when purchasing a larger quantity of a physical product, such as a book or CD, consumers may need to consider its physical size and storage requirements. Conversely, opting for the digital format eliminates these concerns, making it more convenient for consumers to purchase and store larger quantities of a product. Consequently, it is predicted that when purchasing in larger quantities consumers that can choose between two different product formats will prefer the digital one as it mostly fits

quantity-convenience considerations. All in all, it is crucial to consider that a greater importance on convenience drives consumers with a large quantity to be purchased in choosing the digital product format. Nonetheless, when decision-makers are faced with the need to choose and compare two equally valued alternatives, such as one that satisfies the same need (e.g., reading), they tend to prefer the one that is superior in their perceived most important attribute (Koukova et. al, 2012). Therefore, it is reasonable to expect that the convenience offered by the digital format is further accentuated when the quantity to be purchased increases.

Thus,
H2a: Consumers that are purchasing a higher (lower) quantity of products are more likely to choose the digital (physical) format.

H2b: A greater importance on convenience considerations leads consumers that are purchasing a higher (lower) quantity of products to be more likely to choose the digital (physical) format.

Consumption goal: hedonic and utilitarian

Hedonic and utilitarian product attributes refer to two types of product features that consumers consider when making purchasing decisions. On the one hand, hedonic product attributes are related to the sensory and affective experiences that a product can provide (Hirschman and Holbrook, 1982). Examples of hedonic product attributes include color, scent, taste, texture, design, and packaging (Lageat, Czellar, and Laurent, 2003). On the other hand, utilitarian attributes are associated with products that can fulfill practical and functional objectives. Examples of utilitarian product attributes include durability, efficiency, and reliability (Hirschman and Holbrook, 1982; Strahilevitz and Myers; 1998).

More important for our theorizing, however, are the considerations regarding different hedonic and utilitarian consumption goals. Even when consuming the same products or services, consumers may have different goals, such as pursuing pleasure (hedonic goal) or accomplishing a practical purpose (utilitarian goal, Bridges and Florsheim, 2008; Chernev, 2004). Hedonic consumption is typified by affective gratification and sensory pleasure and is assessed based on the intrinsic enjoyment derived from the product (Botti and McGill, 2011; Crowley, Spangenberg, and Hughes, 1991; Holbrook, 1994). Conversely, utilitarian consumption is motivated by functional goals and instrumental benefits and is assessed based on the extent to which the product serves as a means to an end (Botti and McGill, 2010). Batra and Ahtola (1990) proposed that consumers purchase and consume for two reasons:

consummatory (hedonic) gratification, which is mostly derived from innate emotional and sensory attributes, and instrumental (utilitarian) reasons, which are concerned with the expected outcomes.

Considering the established definition of hedonic and utilitarian consumption goals it is comprehensible that convenience in the relation of different quantities to be purchased and choice of digital (physical) products may not be salient to all consumers. Utilitarian-oriented consumers are primarily seeking products or services that fulfill functional and practical needs (Batra and Ahtola, 1990;). Building on both the definition of utilitarian-oriented consumption and convenience, it is reasonable to associate both within the same framework. Indeed, the importance of convenience is predicted to be greater in consumers who prioritize functional objectives over hedonic and emotional ones. Convenience plays a significant role in utilitarian consumption as it enables consumers to accomplish their goals more efficiently. Nonetheless, in past research when measuring the utilitarian aspects of consumers' attitudes, dimensions such as usefulness, handiness, productivity, and efficiency are considered (Voss, Spangenberg, and Grohmann, 2003). Thus, the present study aims to contribute to the existing literature on convenience by establishing a definitive correlation between convenience and utilitarian consumption in the digital realm. This research endeavors to enhance our understanding of how a utilitarian consumption goal influences the importance that consumers place on convenience in digital environments and, thereby, provide significant insights into consumer behavior in the ever-evolving digital landscape.

In retail, prior research proved that convenience plays a significant role in perceived value and loyalty in both hedonic and utilitarian retail settings (Wong, 2021). Specifically, the research has primarily focused on examining the impact of the five service convenience dimensions (i.e., decision convenience, access convenience, transaction convenience, benefit convenience, and post-benefit convenience) on the outcome variable retail store loyalty considering two different retail settings: hedonic and utilitarian (Wong, 2021). However, the present research adopts a broader approach by investigating whether utilitarian and hedonic consumption goals influence the importance that consumers place on convenience when purchasing different product formats. Given the already mentioned characteristics of digital product formats, this study suggest that it is unlikely to observe comparable convenience considerations when consumers choose between the two. Therefore, it is anticipated that it would be unlikely for convenience to be a prominent attribute in both digital and physical product formats with an

activated utilitarian consumption goal. The reasons for the unlikeliness of a similar outcome to occur in the context of the current thesis are twofold.

Firstly, based on the notion of compatibility, which suggests that consumers choose products based on their activated consumption goal and their alignment with the product attribute, it is expected that a utilitarian consumption goal would lead consumers to focus on the most relevant attribute of the digital alternative, namely convenience (Chernev, 2004).

Second, digital products represent a technological advancement that has contributed significantly to the enhancement of consumers' lives (Catapano et. al, 2022). Past research demonstrated that utilitarian-oriented consumers tend to place greater trust in technology. Specifically, individuals perceive that technology recommendation systems are more competent than humans to assess utilitarian attribute value and generate utilitarian-focused recommendations (Longoni and Cian, 2020). Consequently, technology is perceived to be more competent in facilitating utilitarian-focused consumption (Longoni and Cian, 2020). This perception is due to consumers' inclination to place greater trust in technology when it comes to utilitarian consumption. Building on this knowledge it is expected that consumers that are driven by a utilitarian consumption goal will also perceive the digital product format as more reliable due to its embedded technological characteristics. For instance, individuals with a utilitarian consumption goal would prefer taking notes for an exam on a e-book since it allows them to store them on the cloud and mitigate the risk of losing them. Based on these insights, it is reasonable to anticipate that digital product formats would also be regarded as a more reliable means of achieving utilitarian consumption objectives when compared to traditional paper formats.

Given the previous considerations about the perception of convenience for consumers with a utilitarian consumption goal, it remains to explore why would the digital product format not be appealing to hedonic-oriented consumers. The answer relies on the following argument. Atasoy and Morewedge (2018) debated that consumers are willing to pay more for the physical counterpart of a product due to the sense of ownership it provides. This is supported by prior research, which has shown that psychological ownership can increase the perceived value of a product (Bonaventure and Chebat, 2015). However, our current research goes further in exploring the relationship between psychological ownership and consumer preferences. I argue that the consumption goal plays a crucial role in this relationship, meaning that the physicality of the product that gives the most psychological ownership is mainly valued by a hedonically

driven consumer. Previous studies have shown that the hedonic versus nonhedonic nature of a product can moderate the effect of psychological ownership (Shu and Peck, 2011). Specifically, this study demonstrates that psychological ownership is greater for hedonic products. This has been proved via a forfeiture experiment, where consumers were asked to choose which product (one hedonic and one utilitarian) to give up (Shu and Peck, 2011; Dhar and Wertenbroch, 2000). Results proved that in a forfeiture setting consumers value most hedonic products as they are able to further advance a sense of psychological ownership.

Given the previous considerations the following hypothesis were outlined:

H3a: Consumers with a Utilitarian goal (Hedonic goal) are more likely to choose Digital (Physical) product formats

H3b: Consumers with a Utilitarian goal (Hedonic goal) are more likely to choose Digital (Physical) product formats when selecting a larger quantity is being purchased, but not when they are purchasing a small one

Manipulation Design

In the online experiment, a 2x2 factorial, between-subjects design is used. The treatment variables were Quantity to Be Purchased (1 vs 4) and Consumption Goal (Hedonic vs Utilitarian). Subjects were randomly assigned to one of the four experimental conditions. Consumers were exposed to either 1 or 4 books to be purchased combined with either a hedonic and utilitarian consumption goal and asked to select their likelihood to choose the digital and physical format. Second, in order to assess whether convenience is important when choosing a digital (physical) product format, all respondents were asked to indicate their importance on convenience considerations. Following our theorizing, results were expected to indicate a greater importance on convenience for consumers in the utilitarian condition with more than one item to be purchased. Moreover, it was also decided to include to indicate their importance on the sense of ownership. This was done because it has already been used in previous literature to indicate the characteristics of both physical and digital goods. Catapano et. al (2022) used both of the above mentioned dimension to empirically establish the role of convenience in the preference reversal for digital products. However, differently from Catapano et. al (2022) research, the current study asked respondents to assess their convenience importance when choosing across the already mentioned four key dimensions on a 7-point Likert scale.

Main Results

Quantity to be purchased* & *Likelihood to choose* moderated by *Consumption Goal

A two-way ANOVA was conducted to first examine if the independent variable, *quantity to be purchased,* has a significant effect on the dependent variable *likelihood to choose between a digital and physical format*. Likewise, the study also intends to test the moderating role of *consumption goal* in such relationship. It was hypothesized that a hedonic and utilitarian consumption goal will significantly moderate such relationship, leading respondents with a utilitarian consumption goal and a higher quantity to be purchase (i.e., 4 books) to be more likely to choose the digital product format.

First, as postulated in the hypothesis 2a, it was explored whether respondents with a higher quantity to be purchased would be more likely to choose the digital product format. Results reveal that the difference between means was not significant ($M_{quantity_1}$ = 23.04, SD = 24.4; $M_{quantity_4}$ = 29.31, SD = 25.7, (F (1, 210) = .521, p = .602). This points out that there is not a significant difference in their likelihood to choose between a digital and physical product format for groups that were exposed to different quantity to be purchased. As a result, the second hypothesis (H2a) cannot be accepted. Second, the main effect of consumption goal was explored. Participants in the utilitarian and hedonic condition reported their likelihood to choose a digital product format ($M_{utilitarian} = 34.14$, SD = 26.89; $M_{hedonic} = 17.46$, SD = 19.93). However, results were not significant (F (1, 210) = 6.71, p = .235). Therefore, the null H3a hypothesis must be accepted.

Third, inspection of the mean scores for the interaction effect, revealed that, overall, respondents were more likely to choose digital products when selecting four items and having a utilitarian consumption goal (M = 39.61, SD = 26.33) compared to when selecting four items and having a hedonic consumption goal (M = 16.56, SD = 18.33). These results are statistically significant (F (1, 210) = 4.02, p = .046, η^2 = .019). This suggests that the quantity of items to be purchased interacts with consumers' consumption goal to influence their preferences when choosing between a digital and physical product format. However, contrary to expectations, the mean scores revealed that respondents with a hedonic consumption goal were more likely to select a digital product when purchasing one book (18.41, SD = 21.66) compared to when purchasing four books (M = 16.56, SD = 18.33). Given these results the H3b can only be partially accepted as the direction of the results is different from what postulated. However, this finding still underscores the importance of considering the interaction between the quantity

to be purchased and the activated consumption goal as a key factor in shaping consumer preferences when choosing between a digital and physical counterpart. However, it remains to explore why the interaction between a hedonic consumption goal and the quantity to be purchased has a reversed result to the utilitarian. Therefore, following it will be explored the mediating effect of convenience in such relationship using Process Macro developed by Hayes.

Parallel Mediation: PROCESS 14

The present study employed moderated mediation analysis using the PROCESS model 14 developed by Hayes to examine the potential influence of purchase quantity (i.e., 1 or 4 books) on consumer preferences for digital versus physical products, mediated by both importance of convenience and sense of ownership.

The interaction between importance of convenience and exposed consumption goal in the relationship between the quantity to be purchased and likelihood to choose was partially significant ($b = 4.58$, $SE = 2.75$, $t(1,212) = 1.66$, $p = .0975$). To further explore the nature of the interaction, a simple slope analysis was conducted. The results showed that the indirect effect of importance of convenience on likelihood to choose was significant when the consumption goal was utilitarian ($b = 6.94$ $SE = 1.76$, $t(1,212) = -1.11$, $p < .001$), but not significant when the consumption goal was hedonic ($b = 2.36$, $SE = 2.12$, $t(1,212) = -1.11$, $p = .26$). These results suggest that the strength and direction of the indirect effect of the importance of convenience on likelihood to choose depends on the level of the consumption goal. Specifically, the mediating effect is stronger when the consumption goal is utilitarian, but weaker or nonexistent when is hedonic. These results suggest that when consumers have a utilitarian consumption goal, convenience is more important factor, and it is likely to influence their preference for digital product formats. Given these findings, results for the moderated mediation were analyzed. However, this relationship was not significant ($B = .1959$, $SE = .61$, $CI = [-1.0999,1.5160]$.

Theoretical Implications

Three are the theoretical contribution that the findings have on the current body of literature. First, the proposed study contributes on the existing body of literature on the notion of compatibility (Tversky et. al, 1988). Prior studies have predominantly examined the concept of compatibility in relation to various factors, including the relationship between (1) attributes and tasks (Nowlis and Simonson, 1997), (2) consumption goals and tasks (Fischer et. al, 1999),

and (3) consumption goals-attribute and psychological traits (Chernev, 2004). The current study's findings provide nuances to the literature demonstrating that consumers' importance for convenience varies depending on the compatibility with their activated consumption goals. Specifically, when the consumption goal is utilitarian, the mediating effect of convenience is significant and leads consumers to be more likely to choose the digital product format. As a result, this finding leads to the second theoretical contribution, it advances the study conducted by Catapano et. al (2022) demonstrating that the reversal in consumers' preferences towards the digital product does not solely depend on the elicitation mode and considerations of convenience, but that it also differs based on the activated consumption goal, namely utilitarian.

Furthermore, this study extends the work of Catapano et. al (2022) by providing insights into the underlying reasons that influence consumers' preference for digital product formats. This study builds upon the concept of convenience as the most prominent attribute in digital products presented in Catapano et. al (2022) work. However, these results further advance research by Catapano et. al (2022) contextualizing why and for which consumers the prominence of convenience attributes becomes relevant. On the one hand, the results of the regression analysis are consistent with Catapano et. al (2022) research demonstrating that the convenience attributes are more important for consumers when choosing a digital product format. On the other hand, the results of the moderated mediation delineate the circumstances in which consumers prefer the digital product format via a greater importance on convenience, namely with a utilitarian consumption goal. By contextualizing the relevance of convenience attributes, our study advances the understanding of consumers preferences for digital formats.

Finally, considering that previous studies were mainly focusing on quantity in the framework of convenience and predicting utilities (Simonson, 1990) the current results advance the literature by creating a causal link between quantity to be purchased and consumption goal consideration in the framework of product format. Results proved that the influence of quantity on consumers' preference for different product format is significantly dependent on the activated consumption goal. More specifically, consumers with a utilitarian consumption goal are more likely to choose a digital product format when purchasing a larger quantity of items compared to when purchasing a single one.

Limitations

As do most empirical studies, also this one comes with its own limitations, which, in turn offer interesting opportunities for future research. The foremost limitation arises from the chosen stimuli for the independent variable (quantity to be purchased). Probably, it might have been more effective choosing a quantity above the resulting mean of the pretest. This could have been done either doubling the mean or considering the standard deviation (SD = 2.03). Consequentially, a quantity of 6 or 8 would have been preferred. This strategy would have drawn attention to the large quantity being purchased, emphasizing the significance of convenience. It might be that in such limitation relies also the reason why consumers with a hedonic consumption goal did not have a significant result when considering the different quantities to be purchased.

Second, using only a book as the chosen stimulus may limit the generalizability of the results. It would have been more advantageous to include at least two different products belonging to the information goods category, just as already done in the research of Koukova et. al (2012). For instance, by including both a book and a newspaper, significant findings would have indicated the model's applicability across a variety of information products. Furthermore, this approach would have helped also in identifying differences within the same product category. For example, it is possible that a journal performs better on the likelihood of choosing the digital format compared to a book since it is most likely to be consumed on morning commute journeys.

Thirdly, the current study is limited by the characteristics of the sample. The convenience sampling method employed restricts the participants to individuals who are connected to the researcher's personal network. This approach resulted in a sample that is skewed towards Italian and Dutch participants with a relatively low mean age, thereby limiting the generalizability of the study's findings. Finally, the study was constrained by time and financial resources, necessitating the use of a self-administered online questionnaire, which precluded the control of extraneous influences that could be managed in a laboratory setting (Sekaran and Bougie, 2016). Despite the careful design of the questionnaire, it was not possible to control, for instance whether participants paid enough attention to the instructions in the questionnaire and if they filled it in a conscious manner. This might have caused some inaccuracies in the data.

Future Research

It could be argued that the independent variable did not have a significant effect on the likelihood to choose because the concept of quantity was not correctly framed. Perhaps it would have been more relevant to approach the notion of quantity from a different standpoint, namely quantity scarcity (Balachander and Stock, 2009). Recently, many brands have begun to launch limited edition (LE) products. When this happens, marketers implement two typical types of scarcity messages by framing the product as either limited in time (e.g., only available for 15 days) or limited in quantity (e.g., only 500 products available). Therefore, the study could have implemented the concept of quantity focusing on scarcity, as such giving the opportunity to explore whether consumers would have been more inclined to opt for the digital product format. Indeed, it is possible that the impact of quantity considerations with regards of consumers' predicted utility (Simonson, 1990) is more significant for products that are limited in availability. For example, limited-edition products, having a scarcity amount of quantity available, induce a fear of missing out (FOMO) among consumers, urging them to choose (Zhang, Jiménez and Cicala, 2020). Thus, maybe in the case of digital product formats, having a limited quantity available, would have prompt respondents to prefer the digital format due to the possibility of being immediately available and consumed. Future research could explore and replicate the study using the abovementioned stimuli as representative of a quantity construct.

Furthermore, the insignificant results observed in the interaction between sense of ownership and the hedonic consumption goal when choosing product formats raises considerations for possible future research. It would be valuable to investigating the factors and mechanism that influence consumers with a hedonic consumption goal when it comes to choose a product format. While previous research has established that consumers' quantity considerations are impacted by factors such as convenience (Simonson, 1990) and it was proved to be true in the current study for utilitarian driven consumers, the specific ways in which the hedonic consumption goals may moderated the likelihood to choose a product format remains unexplored. A hedonic consumption relates to the multisensory, fantasy and emotive aspects of product usage experience (Hirschman et. al, 1982). Thus, it would worth exploring the relationship between the desire for a multisensory experience among consumers with a hedonic consumption goal and the characteristics of a digital product format. Past research proved that touch can contribute to the appreciation of a hedonic product design as it provides multisensory experience (Spence et. al, 2011). However, given that digital products lack the inherent

capability to provide a tactile experience, future research could explore whether technological advancements, such as the implementation of augmented reality (AR), can influence the preference of hedonically oriented consumers towards digital product formats.

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Appendix

Appendix 1 - Questionnaires

Appendix 1.1 Questionnaire – PRE-TEST

Start of Block: Introduction

Intro Dear participant,
Thank you for agreeing to take part in this study.

As I am currently working on my master's thesis for the programme Marketing Analytics at Tilburg University, I am running this pilot study which will help me design the main experiment for my research project. Your help in this process is therefore much appreciated!

Filling in this questionnaire will take **no longer than 2 minutes**.

The data collected will only be used for the purposes of the present research project, and will be treated confidentially and anonymously.

Please answer as openly and truthfully as possible - there are no right or wrong answers!
Thanks again for your help!

Kind regards,
Ludovica Donatelli

End of Block: Introduction

Start of Block: quantity

*

quantity Please indicate the **maximum quantity** of books you ever bought within a **single purchase occasion**

_____

End of Block: quantity

Start of Block: convenience

convenience intro Please indicate the **extent to which you agree** with the following statements

convenience Compared to buying a single item **when purchasing multiple items**

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I value how easy it would be for me to complete my purchase (1)	○	○	○	○	○	○	○
I value how much time it would require me to reach the point of purchase (2)	○	○	○	○	○	○	○
I value how distant is the store from where I am located (3)	○	○	○	○	○	○	○
I value how easy it would be for me to consume the product (4)	○	○	○	○	○	○	○

End of Block: convenience

Start of Block: demographics

age What is your age?

_____

gender What is your gender?

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary / third gender (3)
- ○ Prefer not to say (4)

education What is the highest level of education you have completed or the highest degree you have received?

- ○ Middle school (1)
- ○ High school (2)
- ○ Bachelor's degree (3)
- ○ Master's degree (4)
- ○ Doctoral degree (5)
- ○ I prefer not to say (6)

End of Block: demographics

Appendix 1.2 Questionnaire – MAIN STUDY

Start of Block: Intro

Intro_1 Dear participant,

I am about to finish my Master's degree in Marketing Analytics at Tilburg University. To this end, I am currently conducting research on consumers' product evaluations with the aid of this survey. Your support in this process is much appreciated, so first of all, I would like to thank you for agreeing to participate in this study!

Completing the questionnaire will take **no longer than 5 minutes**.
On the following pages, you will be asked to answer a few questions. Please answer the questions as truthfully as possible. There are no right or wrong answers!

The data collected through this questionnaire will only be used for the purposes of the present research project, and will be treated confidentially and anonymously.

In case you have any questions or remarks, please feel free to contact me at l.donatellli@tilburguniversity.edu.

Thanks again for your help!
Kind regards,
Ludovica Donatelli

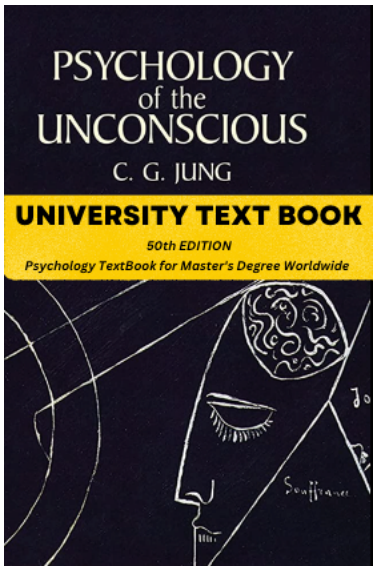
End of Block: Intro

Start of Block: U_1

Into_U_1 CAREFULLY read the scenario proposed. Afterwards, you will be asked to answer to some questions.

Page Break

text_1_utilitarian Imagine that you have to buy **ONE BOOK** for a course you are attending at University and for which you will have an exam. **The book is the following**:



slider_1_utilitarian How likely are you to **choose** to buy it in its physical or digital format?

definitely physical		definitely digital
()		

Page Break

Attention checks
consumption goal In the scenario before for which reason were you asked to purchase the book(s)?

- ○ for university (1)
- ○ for my own interest (2)

quantity In the scenario before how many books were you asked to imagine having to purchase?

- ○ 1 (1)
- ○ 4 (2)

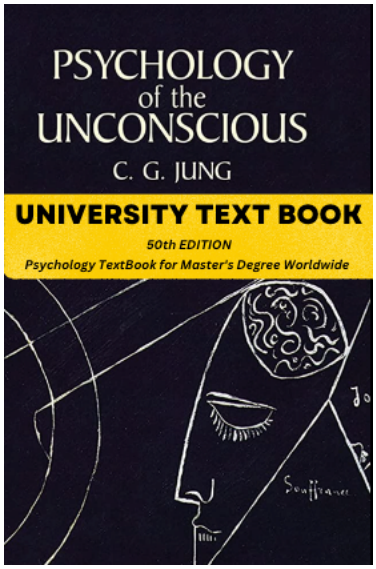
End of Block: U_1

Start of Block: U_4

Into_U_4 CAREFULLY read the scenario proposed. Afterwards, you will be asked to answer to some questions.

Page Break

text_4_utilitarian Imagine that you have to buy **FOUR BOOKS** for a course you are attending at University and for which you will have an exam. **One out of the four books** is the following:



U_4
How likely are you to **choose to buy** them in their physical or digital format?

Definitely physical		Definitely digital
()		

Page Break

Attention checks
consumption goal In the scenario before for which reason were you asked to purchase the book(s)?

- ○ for university (1)
- ○ for my own interest (2)

quantity In the scenario before how many books were you asked to imagine having to purchase?

- ○ 1 (1)
- ○ 4 (2)

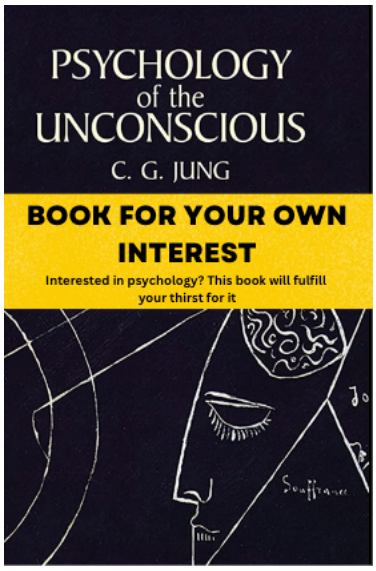
End of Block: U_4

Start of Block: H_4

intro CAREFULLY read the scenario proposed. Afterwards, you will be asked to answer to some questions.

Page Break

4_hedonic Imagine that you have to buy **FOUR BOOKS** for your own interest and pleasure.
One out of the four books is the following:



H_4 How likely are you to choose to buy them in their physical and digital format?

Definitely physical		Definitely digital
()		

Page Break

Attention checks
consumption goal In the scenario before for which reason were you asked to purchase the book(s)?

- ○ for university (1)
- ○ for my own interest (2)

---

quantity In the scenario before how many books were you asked to imagine having to purchase?

- ○ 1 (1)
- ○ 4 (2)

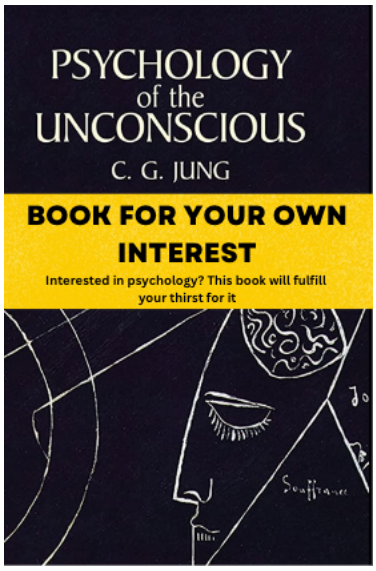
End of Block: H_4

Start of Block: H_1

Into_H_1 CAREFULLY read the scenario proposed. Afterwards, you will be asked to answer to some questions.

Page Break

text_1_hedonic Imagine that you have to buy **<u>ONE BOOK</u>** for your own **interest and pleasure**. **The book is the following**:



H_1 How likely are you to choose to buy it in its physical and digital format?

Definitely physical		Definitely digital
()		

Page Break

Attention checks

consumption goal In the scenario before for which reason were you asked to purchase the book(s)?

- ○ for university (1)
- ○ for my own interest (2)

---

quantity In the scenario before how many books were you asked to imagine having to purchase?

- ○ 1 (1)
- ○ 4 (2)

End of Block: H_1

Start of Block: convenience attribute utilitarian

attributes_1_utiltarian

In the scenario beforehand, when you were thinking about buying 1 book for university, **how important were the following things when making your choice?**

	Not at all important (1)	Not important (2)	Slightly not important (3)	Neutral (4)	Slightly important (5)	Important (6)	Extremely important (7)
feeling like I own the book (1)	○	○	○	○	○	○	○
the ability to easily purchase the book (2)	○	○	○	○	○	○	○
the ability to read the book anywhere (3)	○	○	○	○	○	○	○
the ability to read the book at anytime (4)	○	○	○	○	○	○	○
the ability to conveniently read the book (5)	○	○	○	○	○	○	○

End of Block: convenience attribute utilitarian

Start of Block: convenience attribute utilitarian

attributes_4_utilitarian
In the scenario beforehand, when you were thinking about buying 4 books for university, **how important were the following things when making your choice?**

	Not at all important (1)	Not important (2)	Slightly not important (3)	Neutral (4)	Slightly important (5)	Important (6)	Extremely important (7)
feeling like I own the books (1)	○	○	○	○	○	○	○
the ability to easily purchase the books (2)	○	○	○	○	○	○	○
the ability to read the books anywhere (3)	○	○	○	○	○	○	○
the ability to read the books at anytime (4)	○	○	○	○	○	○	○
the ability to conveniently read the books (5)	○	○	○	○	○	○	○

End of Block: convenience attribute utilitarian

Start of Block: attributes_4_hedonic

attributes_4_hedonic
In the scenario beforehand, when you were thinking about buying 4 books for your own interest, **how important were the following things when making your choice?**

	Not at all important (1)	Not important (2)	Slightly not important (3)	Neutral (4)	Slightly important (5)	Important (6)	Extremely important (7)
I feel like I own the books (1)	○	○	○	○	○	○	○
the ability to easily purchase the books (2)	○	○	○	○	○	○	○
the ability to read the books anywhere (3)	○	○	○	○	○	○	○
the ability to read the books at anytime (4)	○	○	○	○	○	○	○
the ability to conveniently read the books (5)	○	○	○	○	○	○	○

End of Block: attributes_4_hedonic

Start of Block: convenience attribute hedonic

attributes_1_hedonic
In the scenario beforehand, when you were thinking about buying 1 book for your own interest, **how important were the following things when making your choice?**

	Not at all important (1)	Not important (2)	Slightly not important (3)	Neutral (4)	Slightly important (5)	Important (6)	Extremely important (7)
feeling like I own the book (1)	○	○	○	○	○	○	○
the ability to easily purchase the book (2)	○	○	○	○	○	○	○
the ability to read the book anywhere (3)	○	○	○	○	○	○	○
the ability to read the book at anytime (4)	○	○	○	○	○	○	○
the ability to conveniently read the book (5)	○	○	○	○	○	○	○

End of Block: convenience attribute hedonic

Start of Block: Control variables

Average books read in a year
How many books do you read in a year on average?

- ○ zero (1)
- ○ less than 5 (2)
- ○ between 5 and 10 (3)
- ○ between 11 and 20 (4)
- ○ more than 20 (5)

E-books consumption
Have you ever read a book in its digital format (e-book)?

- ○ Yes (1)
- ○ No (2)

Page Break

End of Block: Control variables

Start of Block: Control variable

Knowledge of eBooks functionalities
Do you have a general knowledge of the possible functionalities that an e-book holds?

- ○ Definitely not (1)
- ○ Probably not (2)
- ○ Might or might not (3)
- ○ Probably yes (4)
- ○ Definitely yes (5)

End of Block: Control variable

Start of Block: manipulation check

university Considering that an **hedonic consumption goal** is something **fun, exciting, delightful and that you do for your own fun and interest**. Meanwhile, **utilitarian consumption goal** is something **useful, functional and necessary**.

Q52 To what extent do you think that reading a book for university is a utilitarian consumption goal?
Slide to the right if you think is manily utilitarian

Hedonic	Utilitarian
()	

utilitarian Considering that an **hedonic consumption goal** is something **fun, exciting, delightful and that you do for your own fun and interest**. Meanwhile, **utilitarian consumption goal** is something **useful, functional and necessary**. To what extent do you think that reading a book for your own interest is an utilitarian consumption goal?

Q51 To what extent do you think that reading a book for your own interest is an utilitarian consumption goal?
Slide to the left if you think is mainly hedonic

Hedonic	Utilitarian
()	

End of Block: manipulation

Start of Block: demographics

age What is your age?

_____

gender What is your gender?

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary / third gender (3)
- ○ Prefer not to say (4)

education What is the highest level of education you have completed or the highest degree you have received?

- ○ High school (1)
- ○ Bachelor's Degree (2)
- ○ Master's Degree (3)
- ○ Doctoral Degree (4)
- ○ I prefer not to say (5)

country of origin What is your current country of residence?

_____

Appendix 2

2.1 Pre-test

2.1.1 Quantity to be purchased

	N	Minimum	Maximum	Mean	Std. Deviation
Maximum quantity of books you ever bought within a single purchase occasion	57	1	10	3.59	2.03

2.1.2 Importance of convenience

Descriptive Statistics for the overall 4 dimensions of convenience:

	N	Minimum	Maximum	Mean	Std. Deviation
Importance of convenience	57	3.50	7	5.5833	.81055

Descriptive Statistics considering each dimension of convenience:

Compared to buying a single item when purchasing multiple items:

	N	Minimum	Maximum	Mean	Std. Deviation
I value how easy it would be for me to complete my purchase	57	2	7	5.21	1.1250
I value how much time it would require me to reach the point of purchase	57	2	7	5.35	1.356
I value how distant is the store from where I am located	57	2	7	5.75	1.258

I value how easy it would be for me to consume the product	57	3	7	6.02	1.009

One sample T-test for the importance of convenience
Test value = 4

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of difference lower	upper
Importance of convenience	14.748	57	< .001	1.58333	1.13683	1.7984

2.1.3 Scale reliability

KMO and Bartlett's Test

KMO measure of sampling adequacy		.733
Barlett's Test of Sphericity	Approx. Chi-Square	314.512
	df	6
	Sig.	<.001

CFA – Convenience scale

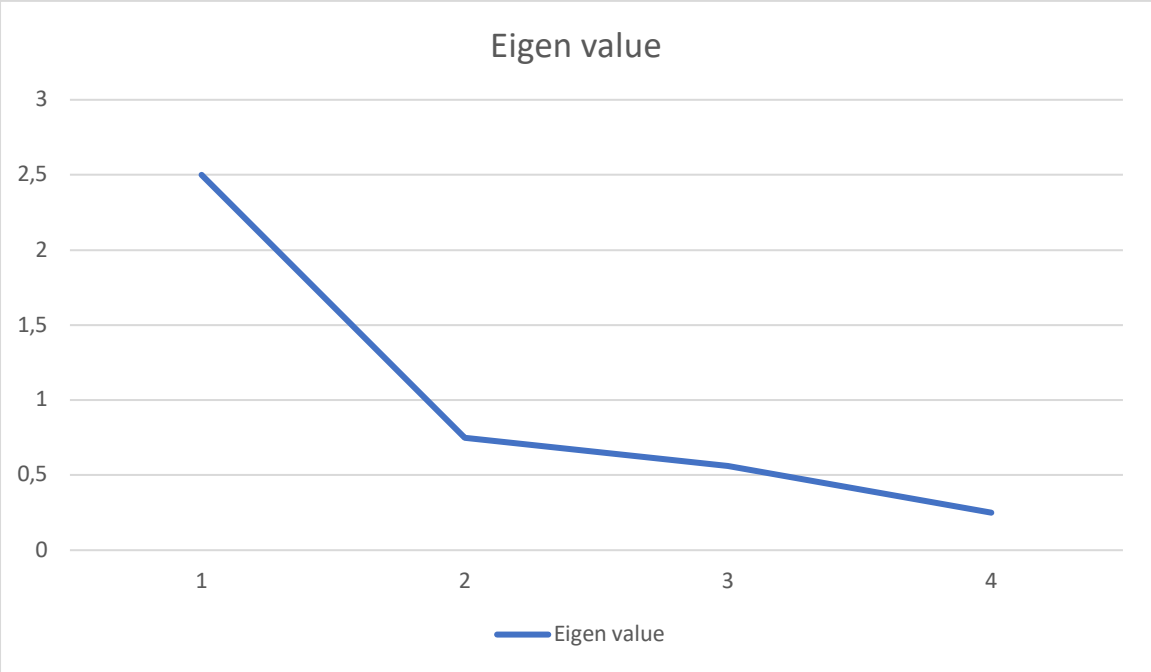
Communalities

	Initial	Extraction
Ease when purchasing	1.000	.412
Spatial convenience	1.000	.752
Temporal convenience	1.000	.789
Consumption convenience	1.000	.537

Total variance explained

	Initial Eigenvalues			Extraction Sum of Squared Loadings		
Component	Total	% of Variance	Cumulative variance	Total	% of Variance	Cumulative %
1	2.488	62.197	62.197	2.488	62.197	62.197
2	.712	17.809	80.005			
3	.563	14.085	94.090			
4	.236	5.910	100.000			

Scree plot



2.2 Main Study

1.2.1 Stimuli

	Frequency	Percent	Cumulative Percent
Utilitarian consumption goal x Quantity to be purchased 1	51	23.8	23.8
Utilitarian consumption goal x Quantity to be purchased 4	63	29.4	53.5
Hedonic consumption goal x Quantity to be purchased 1	49	22.9	76.2
Hedonic consumption goal x Quantity to be purchased 4	51	23.8	100
Total	214	100	

1.2.2 Descriptives

Gender Distribution

	Frequency	Percent
Male	59	27.6
Female	153	71.5
Prefer not to sat	2	.9
Total	214	100

Highest level of education

	Frequency	Percent	Cumulative Percent
High School	61	28.5	28.5
Bachelor's Degree	75	35.0	63.6
Master's Degree	70	32.7	96.3
Doctoral Degree	8	3.7	100
Total	214	100	

E-books consumption

Have you ever read a book in its digital format?

	Frequency	Percent	Cumulative Percent
Yes	145	67.8	67.8
No	69	32.2	100
Total	214	100	

E-books functionalities knowledge

Do you have a general knowledge of the possible functionalities that an e-book holds?

	Frequency	Percent	Cumulative Percent
Definitely Not	24	11.3	11.2
Probably Not	31	14.5	25.7
Might or might not	30	14.1	39.6
Probably Yes	85	39.7	79.3
Definitely Yes	37	17.3	100
Total	214	100	

1.2.3 Manipulation check

Correlation Analysis – Utilitarian and Hedonic stimuli

		Utilitarian Stimuli	Hedonic Stimuli
Utilitarian Stimuli	Pearson Correlation	1	-.218
	Sig. (2-tailed)		.001
	N	214	214
Hedonic Stimuli	Pearson Correlation	-.218	1
	Sig. (2-tailed)	.001	
	N	214	214

Group Statistics

		Mean	N	St. Deviation	St. Error Mean
Averaged Manipulation Check	hedonic	60.0200	100	8.15008	.81501
	utilitarian	62.4123	114	5.54038	.51890

Independent Samples Test

									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig.	Mean Difference	Std. Error	Lower	Upper
Averaged Manipulation Check	Equal Variances	11.191	<.001	-2.536	212	.012	-2.3922	.94309	-4.2513	-.53325
	Equal Variances Not Ass.	62.4123	114	-2.476	170	.014	-2.3922	.96618	-4.2994	-.478510

Randomization

Randomization check for Age Groups

Descriptive

					95% of Confidence Interval of Mean			
	N	**Mean**	**St. Deviation**	**St. Error**	**Lower Bound**	**Upper Bound**	**Min**	**Max**
Utilitarian consumption goal x Quantity to be purchased 1	51	26.35	10.768	1.508	29.38	29.38	19	68
Utilitarian consumption goal x Quantity to be purchased 4	63	27.13	11.207	1.412	24.30	29.95	19	71
Hedonic consumption goal x Quantity to be purchased 1	49	27.92	10.628	1.518	24.87	30.97	19	60
Hedonic consumption goal x Quantity to be purchased 4	51	26.65	10.237	1.433	23.77	29.53	19	62
Total	214	27.01	10.685	.730	25.57	28.45	19	71

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	70.030	3	23.343	.202	.895
Within Groups	24245.952	210	115.457		
Total	24315.981	213			

Randomization check for Gender

Chi-square test Gender

	Value	df	Significance 2-sided
Pearson Chi-Square	2.969	6	.813
Likelihood Ratio	3.728	6	.713
Linear-by-Linear Association	.346	1	.556
N of Valid Cases	214		

Randomization check for Education Levels

Chi-square test Education

	Value	df	Significance 2-sided
Pearson Chi-Square	4.432	9	.881
Likelihood Ratio	4.416	9	.882
Linear-by-Linear Association	.277	1	.599
N of Valid Cases	214		

1.2.4 Reliability of Convenience Measurement Scale

KMO measure of sampling adequacy		.764
Barlett's Test of Sphericity	Approx. Chi-Square	332.994
	df	6
	Sig.	<.001

	Cronbach's Alpha	**On Std. Items**	**N of items**
Pearson Chi-Square	.817	.817	4

	Initial Eigenvalues			Extraction Sum of Squared Loadings		
Component	Total	% of Variance	Cumulative variance	Total	% of Variance	Cumulative %
1	2.604	65.093	65.093	2.604	65.093	65.093
2	.680	17.001	82.094			
3	.467	11.675	93.769			
4	.249	5.910	100.000			

1.2.5 Assumption for ANOVA

Test of Homogeneity of Variances

	Levene Statistic	df	df	Sig.
High School	7.182	3	210	<.001
Bachelor's Degree	6.116	3	210	<.001
Master's Degree	6.116	3	201.763	<.001
Doctoral Degree	7.277	3	210	<.001

Test of Normality – consumption goal conditions

	Kolmogrov-Smirnov			Shapiro-Wilk		
	Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
Utilitarian consumption goal x Quantity to be purchased 1	.181	51	<.001	.848	51	<.001
Utilitarian consumption goal x Quantity to be purchased 4	.166	63	<.001	.869	63	<.001
Hedonic consumption goal x Quantity to be purchased 1	.201	49	<.001	.793	49	<.001
Hedonic consumption goal x Quantity to be purchased 4	.190	51	<.001	.839	51	<.001

Test of Normality – likelihood to choose

	Shapiro-Wilk	
	Statistic	**Sig.**
Likelihood to choose Physical	.853	<.001
Likelihood to choose Digital	.858	<.001

Test of Between Subjects Effects - Homogeneity of Regression Slopes

	Sum of Squares	df	Mean Square	F	Sig.
Intercept	5248.773	1	5248.773	7.820	.006.
Exposed Quantity (EQ)	400.091	1	400.091	.596	.441
Quantity of Books read within a year (QBR)	739.400	1	739.400	1.102	.296
Knowledge on eBooks functionalities (KeBF)	444.113	1	444.113	.662	.417
EQ*QBR	87.176	1	87.176	.130	.719
EQ*KeBF	50.440	1	50.440	.075	.789
Error	92629.789	138	671.230		

1.2.6 Assumption for Mediation – Regression analysis

Model	R	R Square	Adjusted R square	St. Error of Estimate	R Square Change	F	DF1	DF2	Sig.
1	.060	.004	-.001	1.12897	.004	.777	1	212	.379

Predictor: exposed quantity

1.2.7 ANOVA Analysis – Moderation effect

Descriptive statistics

Exposed Quantity	Exposed Consumption Goal	Mean	St. Dev.	N
Quantity to be purchased 4	Hedonic	16.56	18.33	51
	Utilitarian	39.60	26.33	63
Quantity to be purchased 1	Hedonic	18.06	21.58	49
	Utilitarian	27.39	26.28	51
Total	Hedonic	17.30	19.90	100
	Utilitarian	34.14	25.89	114
				214

ANOVA analysis – dependent variable: likelihood to choose and moderated by consumption goal

	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Exposed Quantity	1521.713	1	1521.713	.612	.577	.308
Exposed consumption goal	13875.070	1	13875.070	5.578	.225	.848
Exposed Quantity x Exposed consumption goal	2487.376	1	2487.376	4.475	.036	.021
Error	116722.562	210	116722.562			

1.2.8 Regression Analysis – Importance of Convenience and Sense of Ownership

Descriptives

	Mean	Std. Deviation	N
Likelihood to choose	26.2710	25.27671	214
Importance of convenience	5.2874	1.12838	214
Sense of ownership	4.4486	1.72653	214

Correlations

		Likelihood to choose	Importance of convenience	Sense of ownership	Exposed quantity
Pearson Correlation	**Likelihood to choose**	1.000	.239	-.366	-.128
	Importance of convenience	.239	1.000	.050	.060
	Sense of ownership	-.366	.050	1.000	-.037
	Exposed quantity	-.128	.060	-.037	1.000
Sig. (1-tailed)	**Likelihood to choose**	-	<.001	<.001	.031
	Importance of convenience	.000	-	.232	.190
	Sense of ownership	.000		-	.294
	Exposed quantity	.031	.190	.294	-

Model Summary

Model	R	R Square	Adjusted R square	St. Error of Estimate	R Square Change	F	DF1	DF2	Sig.
1	.475	.225	.211	22.40440	.225	20.371	3	210	<.001

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	30677.256	3	10225.752	20.372	<.001
Residual	105411.024	210	501.957		
Total	136088.280	213			

Coefficients

	Unstandardized B	Coefficients Std. Error	Standardized coefficients beta	t	Sig.
Constant	23.384	8.267		2.829	.005
Importance of convenience	6.002	1.365	.268	4.398	<.001
Sense of ownership	-5.642	.891	-.385	-6.333	<.001
Exposed quantity	-8.023	3.078	-.159	-2.607	.010

1.2.9 Moderated Mediation - Parallel Mediators: Convenience and Ownership

OUTCOME VARIABLE:

convenie

Model Summary

R	R-sq	MSE	F	df1	df2	p
.0604	.0036	1.2746	.7766	1.0000	212.0000	.3792

Model

	coeff	se	t	p	LLCI	ULCI
constant	5.2237	.1057	49.4021	.0000	5.0153	5.4321
e_quanti	.1363	.1547	.8813	.3792	-.1686	.4412

Covariance matrix of regression parameter estimates:

	constant	e_quanti
constant	.0112	-.0112
e_quanti	-.0112	.0239

****

OUTCOME VARIABLE:

ownershi

Model Summary

R	R-sq	MSE	F	df1	df2	p
.0373	.0014	2.9908	.2954	1.0000	212.0000	.5874

Model

	coeff	se	t	p	LLCI	ULCI
constant	4.5088	.1620	27.8366	.0000	4.1895	4.8281

e_quanti	-.1288	.2369	-.5435	.5874	-.5958	.3383

Covariance matrix of regression parameter estimates:

	constant	e_quanti
constant	.0262	-.0262
e_quanti	-.0262	.0561

****

OUTCOME VARIABLE:

slider

Model Summary

R	R-sq	MSE	F	df1	df2	p
.5265	.2772	475.1771	13.2325	6.0000	207.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	28.4971	12.6139	2.2592	.0249	3.6289	53.3654
e_quanti	-7.3427	3.0180	-2.4330	.0158	-13.2927	-1.3927
convenie	2.3607	2.1219	1.1126	.2672	-1.8225	6.5439
ownershi	-4.0263	1.4082	-2.8592	.0047	-6.8025	-1.2501
e_c_goal	-6.4498	16.3337	-.3949	.6933	-38.6515	25.7520
Int_1	4.5860	2.7552	1.6645	.0975	-.8459	10.0179
Int_2	-1.5212	1.8240	-.8340	.4053	-5.1172	2.0749

Product terms key:

Int_1 : convenie x e_c_goal

Int_2 : ownershi x e_c_goal

Covariance matrix of regression parameter estimates:

	constant	e_quanti	convenie	ownershi	e_c_goal	Int_1	Int_2
constant	159.1115	-6.1605	-21.5860	-8.6214	-158.1324	21.8804	8.6616
e_quanti	-6.1605	9.1084	-.1049	.4587	4.7129	-.3303	-.5182
convenie	-21.5860	-.1049	4.5023	-.2447	21.6027	-4.4973	.2454
ownershi	-8.6214	.4587	-.2447	1.9830	8.5485	.2228	-1.9860
e_c_goal	-158.1324	4.7129	21.6027	8.5485	266.7898	-37.8243	-12.8869
Int_1	21.8804	-.3303	-4.4973	.2228	-37.8243	7.5913	-.4325
Int_2	8.6616	-.5182	.2454	-1.9860	-12.8869	-.4325	3.3271

Test(s) of X by M interaction:

	F	df1	df2	p
M1*X	.1104	1.0000	206.0000	.7400
M2*X	.0000	1.0000	206.0000	.9976

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
M1*W	.0097	2.7705	1.0000	207.0000	.0975
M2*W	.0024	.6955	1.0000	207.0000	.4053

Focal predict: convenie (M1)

Mod var: e_c_goal (W)

Conditional effects of the focal predictor at values of the moderator(s):

e_c_goal	Effect	se	t	p	LLCI	ULCI
.0000	2.3607	2.1219	1.1126	.2672	-1.8225	6.5439

```
    1.0000     6.9467     1.7604     3.9461      .0001     3.4761    10.4173
```

Data for visualizing the conditional effect of the focal predictor:

Paste text below into a SPSS syntax window and execute to produce plot.

```
DATA LIST FREE/
  convenie   e_c_goal   slider     .
BEGIN DATA.
    4.2500      .0000    17.1874
    5.5000      .0000    20.1383
    6.2500      .0000    21.9088
    4.2500     1.0000    23.4611
    5.5000     1.0000    32.1444
    6.2500     1.0000    37.3545
END DATA.
GRAPH/SCATTERPLOT=
 convenie WITH     slider   BY       e_c_goal .
----------
   Focal predict: ownershi (M2)
        Mod var: e_c_goal (W)
```

Data for visualizing the conditional effect of the focal predictor:

Paste text below into a SPSS syntax window and execute to produce plot.

```
DATA LIST FREE/
  ownershi   e_c_goal   slider     .
BEGIN DATA.
    2.0000      .0000    29.4952
    5.0000      .0000    17.4162
```

```
    6.0000     .0000    13.3899
    2.0000    1.0000    44.2510
    5.0000    1.0000    27.6086
    6.0000    1.0000    22.0611
END DATA.
GRAPH/SCATTERPLOT=
 ownershi WITH     slider   BY       e_c_goal .


****************** DIRECT AND INDIRECT EFFECTS OF X ON Y ***************
**

Direct effect of X on Y
    Effect        se         t         p      LLCI      ULCI
   -7.3427    3.0180   -2.4330     .0158  -13.2927   -1.3927

Conditional indirect effects of X on Y:

INDIRECT EFFECT:
 e_quanti    ->    convenie    ->    slider

   e_c_goal     Effect     BootSE   BootLLCI   BootULCI
     .0000      .3218      .5346     -.3913     1.7033
    1.0000      .9469     1.1018    -1.2061     3.1872

Index of moderated mediation (difference between conditional indirect effect:
            Index     BootSE   BootLLCI   BootULCI
e_c_goal     .6251      .8187     -.9976     2.3172
```

INDIRECT EFFECT:

e_quanti -> ownershi -> slider

e_c_goal	Effect	BootSE	BootLLCI	BootULCI
.0000	.5185	1.0417	-1.3338	2.8776
1.0000	.7144	1.3361	-1.9775	3.5124

Index of moderated mediation (difference between conditional indirect effects):

	Index	BootSE	BootLLCI	BootULCI
e_c_goal	.1959	.6128	-1.0999	1.5160