The influence of Shopping Environment on Impulsive buying: A study of Online and In-Store context, with the exploration of Self-Regulation

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Abstract

In an era where digital consumerism is quickly overtaking traditional retail models, this thesis studies the impact of shopping context - in-store versus online - on consumer impulsive buying behavior and explores the moderating role of self-regulation within these environments. Based on an in-depth literature review and using a quantitative approach with a consumer survey, this research evaluates impulsive purchase patterns across several shopping modalities. In comparison to in-store buyers, online shoppers exhibit much more impulsivity, according to statistical analyses such as t-tests and ANCOVAs. These results support the hypothesis that online environments with their ease of access, anonymity, and personalized marketing, facilitate higher impulsivity. Surprisingly, self-regulation does not significantly moderate the association between the shopping context and impulsive purchasing, indicating that the compelling aspects of online environments might surpass conventional self-control strategies. Moreover, the results point to the complex interaction between unique behavioral traits and environmental cues in retail settings, supporting the hypothesis that higher levels of self-regulation would be associated with more consistent in-store purchasing patterns. The thesis emphasizes how important it is for retailers to take these factors into account when creating plans to mitigate impulsive purchases, especially on online platforms, and the need for consumer education initiatives that improve knowledge related to self-control in retail settings. Future research should investigate the precise processes by which the instantaneity and ease of online shopping settings affect self-regulation. In the end, this thesis creates the framework for smarter retail strategies considering the particular characteristics of both shopping contexts.

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Keywords: Impulse buying, self-regulation, shopping context, online, in-store, shopping experience

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Resumo

Numa era dominada pelo consumismo digital, esta tese investiga o impacto dos contextos de compras — em loja versus online — no comportamento impulsivo dos consumidores e examina o papel moderador da auto-regulação nestes ambientes. Utilizando uma abordagem quantitativa com base numa revisão profunda da literatura e inquéritos a consumidores, este estudo avalia os padrões de compras impulsivas em diferentes modalidades. Os resultados revelam que os compradores online exibem níveis significativamente maiores de impulsividade do que os compradores em lojas físicas, conforme indicado por análises estatísticas como testes-t e ANCOVAs. Estes achados suportam a hipótese de que os ambientes online, com fácil acesso, anonimato e marketing personalizado, promovem uma maior impulsividade. Surpreendentemente, a auto-regulação não modera de forma significativa a relação entre o contexto de compras e o comportamento de compra impulsiva, sugerindo que as características atrativas dos ambientes online podem sobrepor-se às estratégias convencionais de autocontrole. Os resultados também destacam a complexa interação entre traços comportamentais e sinais ambientais nos contextos de retalho, indicando que uma maior auto-regulação está associada a padrões de compra mais consistentes em lojas físicas. A tese ressalta a necessidade de os retalhistas considerarem estes fatores ao desenvolverem estratégias para mitigar compras impulsivas, especialmente online, e a importância de iniciativas educativas que fortaleçam competências de auto-regulação nos consumidores. Futuras investigações devem explorar como a instantaneidade e a facilidade de compras online influenciam a auto-regulação. Este trabalho estabelece as bases para estratégias de retalho mais informadas que atendam às particularidades dos contextos de compra online e em loja.

Título: A influência do Ambiente de Compras na Compra Impulsiva: Um estudo do contexto Online e em Loja, com a exploração da Auto-Regulação

Palavras-chave: Compra por impulso, autor-regulação, contexto de compra, em linha, na loja, experiência de compra

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Table of contents

List of tables

1. Introduction

In today's diverse retail environment, the differentiation between online and in-store shopping provides a rich landscape for examining nuanced consumer behaviors. Impulsive purchasing is among the most important behaviors that are being studied. Defined as the tendency to make unplanned, spontaneous purchases, impulsive buying has a lot of implications for marketers aiming to enhance sales and consumers prone to unfortunate purchase decisions (Rook, 1987). This behavior is not only about spontaneous buying; it also encloses a complex interplay of emotional and cognitive responses triggered by various retail stimuli (Rook, 1987).

This thesis aims to investigate the effects of the shopping context - whether online or in-store - on impulsive buying. Different environmental factors can act as triggers or obstacles for impulsivity. For instance, sensory stimuli and instant gratification from in-store purchasing may increase the likelihood of impulsive purchases(Mohan et al., 2013).On the contrary, online context presents unique features such as ease of access, privacy, and a wide range of options, which have been shown to facilitate impulse purchases through different mechanisms (Dawson & Kim, 2010).

Furthermore, this thesis investigates how individual differences in self-regulation can influence these behaviors. Self-regulation refers to one's ability to control or redirect disruptive impulses and moods, and the tendency to pause and think before acting(Baumeister et al., 2007). Studies show that self-control has a major influence on consumer behavior, particularly in high-stimulation contexts such as online and physical stores (Vohs & Faber, 2007).

The theoretical framework of this thesis rests on two main theories: The Theory of Impulsive Buying Behavior, initially articulated by (Rook, 1987), provides a foundation for understanding how spontaneous purchases are influenced by a combination of internal predispositions and external stimuli. Recent studies have adapted these concepts to the online context, noting that factors like ease of search and privacy can heighten impulsivity (Wells et al., 2011). Furthermore, Self-Control Theory (Baumeister & Vohs, 2004)highlights that self-regulation plays a crucial role in managing responses to environmental triggers. For instance, Vohs and Faber (2007) discovered that individuals with lower self-regulation are more likely to engage in impulsive buying, a finding consistent across various studies.

This study tackles the subject of how various retail settings impact impulsive buying behaviors. Given the continued popularity of physical businesses and the growth of digital commerce, it is critical to comprehend the factors that lead to impulsive purchases in these contexts.

To achieve the objectives of this research, there are two research questions that will need to be answered.

The first research question is

How does the context of shopping—online versus in-store—affect impulsive buying behavior?

The second research question is

What role does self-regulation play in moderating this influence?

The main theory is that because there are fewer social and physical constraints in online buying scenarios than in-store environments, people are more likely to make impulsive purchases. It is also hypothesized that individuals with lower levels of self-regulation exhibit a higher frequency of impulsive purchases, with this effect being more pronounced in online settings.

Empirical testing of these hypotheses will be conducted through quantitative methods, employing a survey on Qualtrics to gather data on impulsive shopping behaviors in our two different shopping contexts and among some self-regulation questions.

There will be five parts in this dissertation. The first part is this Introduction that provides background information on the research as well as why it was necessary to undertake this study. The second part, "The Literature Review," provides an overview of the major ideas, including **"Theory of impulsive buying behavior" "Influence of shopping context on Consumer Behavior", "The role of self-regulation in shopping behavior" and "Comparative Studies and Emerging Trends".** The methodology section of Part 3 describes the quantitative study that is employed, as well as how data is gathered and analyzed. In Part 4, the results of the data analysis are presented, and the data's significance is explained. In Part 5, we will see in more detail the 'Finding and Discussion' part. Finally in Part 6, we will have the conclusion including the theoretical and practical implications and also, the limitations and future research.

2. Literature Review

2.1 - Theories of Impulsive Buying Behavior

Consumer behavior research has focused on impulsive buying behavior, which is defined as an unanticipated, sudden, and strong desire to purchase (Rook, 1987). A number of theoretical frameworks have been developed as a result of our growing understanding of the psychological mechanics and reasons behind impulsive consumer purchases. The foundational ideas that shed

light on impulsive purchasing behaviors are examined in this section of the literature review, with particular attention paid to how these theories have been modified to fit the ever-changing landscape of online and retail contexts.

Dennis Rook introduced the Theory of Impulsive Buying Behavior in 1987, focusing on the emotional and cognitive dimension of impulsive purchases. According to Rook, impulsive buying is a "sudden, often powerful and persistent urge to buy something immediately». This theory suggests that this behavior is most of the time driven by emotional responses rather than rational processes and is marked by a lack of consideration for the effects it may have (Rook, 1987). In this theory, Rook highlights the spontaneous nature of these purchases, where the emotional arousal is the main trigger that can also be activated through external stimuli in the shopping context. In fact, a favorable emotional state, such as excitement, enjoyment, or even boredom, is frequently the source of this urge to buy. The immediate gratification associated with this purchase is viewed as having more benefits than disadvantages, which makes rational decision-making less important. (Rook, 1987). Link to this theory, some researchers also highlight some factors that can conduct to impulsive buying behavior, such as:

- The emotional state who plays an important role. Experiences like boredom, frustration, or excitement can increase the possibility of impulsive buying. For example, a stressed-out consumer might seek the temporary gratification of an impulsive purchase (Rook & Gardner, 1993).
- The shopping environment can also have an impact on impulsive buying. For example, in an in-store context, elements such as appealing displays, appealing packaging, scents, pleasant music, promotions can create a stimulating atmosphere (Mohan, Sivakumaran, and Sharma, 2013).

Along with the Theory of Impulsive Buying Behavior (Rook, 1987), other researchers have explored the importance of affect and mood states in driving impulsive purchases. In particular, Gardner & Rook (1988),who found that positive emotions can trigger impulsive buying, however, negative emotions can lead to impulsive buying as a coping mechanism. This concept is supported by Verplanken et al., (2005),who looked into how regular purchasing behaviors are frequently triggered by particular emotional states and can act as a coping mechanism during times of emotional distress. According to their study, going shopping might turn into a routine reaction to specific emotional states, which can result in recurrent episodes of impulsive buying. This habit building is important because it raises the possibility that impulsive purchases may involve deeper, conditioned behaviors that are hard to break once they are established, in

addition to the immediate effects of moods on judgment. People who engage in these behaviors may be more susceptible to emotional trigger-focused marketing tactics.

2.2. Influence of the Shopping Contexts on Consumer Behavior

In an in-store shopping context, the sensory experience that comes with it has a significant influence on consumer behavior. The physical design, the tactile feedback from holding products, the sounds, and smells of the store environment - all of these things enhance consumers' engagement and have a big impact on what people decide to buy. According to Spangenberg et al., (2005), even subtle sensory cues like background music and ambient smells can affect customers' moods and boost impulsivity. The immediate ability to feel and touch items can also lead to high emotional reactions, which are strongly associated with impulsive purchases (Peck & Childers, 2006). Bright lighting and color are two examples of in-store cues that may provoke emotional states that increase the possibility of impulsive buying, as studied by Mohan, Sivakumaran, and Sharma (2013). Their findings support the idea that physical stores can use multisensory experiences to their advantage to influence consumer behavior, sometimes resulting in impulsive purchases.

In online environments, different triggers can influence impulsive purchases. First, the convenience anonymity associated with online shopping can reduce the psychological barriers to impulsive buying (Dawson & Kim, 2010). Also, the ease of adding items to a virtual cart and the one-click checkout process can encourage more impulsive decisions because the perceived effort and time associated with this will be reduced (Huang & Kuo, 2012). Moreover, looking in more detail at the anonymity trigger, it can diminish the feelings of self-consciousness and regret that can be associated with impulsive buying (Pacheco et al., 2022).

Furthermore, various strategies are used to encourage impulsive purchases, for example targeted advertising, limited time offers, or even free shipping promotions can be used and create a sense of urgency and scarcity. The idea behind is to encourage consumers to make quick decisions without really thinking about all the aspects of the purchase and what they really need, so it leads to impulsive purchases (Marjerison et al., 2022).Also, online the volume and various choices of products available is huge and it can overwhelm consumers when they do their shopping, and it can lead to decision fatigue so further increasing the likelihood of impulsive buying (Schwartz, 2005).

However, some aspects of online shopping can help to mitigate impulsive decisions. For example, the presence of shopping carts allows for reviews and potential removal of some articles, therefore it can help to reduce the cart before the final checkout and provide a space for self-regulation (Pacheco et al., 2022).

Finally, some empirical study has aimed to directly compare how online, and in-store shopping contexts differently impact consumer behavior. In a study from Verhagen & van Dolen (2011), for instance, looked into impulsivity and customer satisfaction in both contexts and discovered that although online buying is more convenient, it doesn't provide the same sensory experience as in-store shopping. Due to this lack of sensory involvement when shopping online, people may compensate by making more impulsive purchases based on visual or descriptive stimuli alone. The study found that the level of impulsivity was higher in online environment compared to in-store context, so the convenience and lack of sensory engagement in online contexts can lead to increased impulse buying.

2.3. The Moderating Role of Self-Regulation

Self-regulation is a key aspect of consumer psychology that has a significant impact on shopping behaviors, especially impulsive purchases. Based on the Self-Control Theory developed by (Baumeister, Vohs and Tice (2007),self-regulation is defined as the capacity to control one's emotional responses, behaviors, and desires in the face of outside stimuli. The ability to effectively control one's impulses can have an important impact on one's tendency to make impulsive purchases, which are frequently motivated more by feelings of instant emotional fulfillment than by reason.

No matter the shopping environment where they purchase, customers with strong self-control are better able to resist impulsive urges (Muraven & Baumeister, 2000). On the other hand, those with poor self-control are more vulnerable to triggers for impulsive purchases that can be found in both physical stores (Rook & Fisher, 1995)and online shopping contexts (Huang & Kuo, 2012). Looking in more detail, the research of Baumeister may provide light on the differences in the effects of online and in-store shopping on self-regulation. Baumeister provides a convincing foundation for comprehending the dynamics of shopping through his important studies on self-regulation and self-control, especially his discoveries regarding the impact of decision fatigue on consumer behavior. Online environments' numerous choices and simple access to products might cause "decision fatigue," as described by Baumeister, which

weakens self-control and raises the risk of impulsive purchases (Baumeister et al., 1998). On the other hand, shopping in a physical store takes place in a setting that is more socially engaged. The physical characteristics of touching things and the possibility of social interactions, according to Rook and Fisher (1995), provide "natural stopping cues" that are essential for triggering self-regulatory mechanisms. These cues may lessen impulsivity by encouraging customers to consider their choices before making them. Moreover, a study from Beatty & Elizabeth Ferrell (1998)pointed out that the social interactions and physical presence in physical stores can occasionally support efforts at self-regulation. They noticed that the possibility of social judgment in physical stores can improve self-control.

In another study, Hofmann, Vohs, and Baumeister (2012) investigated the ways in which situational elements and individual differences in self-control interact to affect purchasing decisions. They discovered that people with strong self-control are typically better at resisting promotions and sales that could encourage impulsive spending. But even these people can succumb to impulsive buying when earlier tasks that required self-control drain their reserves of self-control.

2.4. Comparative Studies and Emerging Trends

The retail landscape has undergone transformative changes with the integration of cutting-edge digital technologies. These developments are changing not just how goods are promoted and sold, but also how customers engage with companies and decide what to buy across both in-store and online shopping contexts. The influence of Augmented Reality (AR), social media, real-time personalization, one-click purchasing, and other trends on customer impulsivity has been revealed by recent studies. Each of these technologies can influence shopping behaviors in distinctive ways.

First, looking at one-click buying which allows people to make purchases with the payment information entered previously, so they are just one click away from their purchase (Pabalkar, 2014). With the one-click buying options, it streamlined the online purchasing process. Research by Zhang et al. (2014) show that the minimalistic design of one-click technology facilitates impulse buying by reducing the decision-making process to a single step and thereby avoiding rational evaluation. In contrast to in-store buying, where the actual act of walking towards a checkout counter offers a momentary gap for reconsideration and may reduce impulse purchases, this feature is primarily an online shopping context phenomenon.

Then, looking in more detail at the impact of real-time personalization, which uses algorithms to customize information and adverts based on a user's browsing habits, search history, and past purchases, enhancing the relevance and appeal of marketing communications. Research by Valentino-DeVries, Singer-Vine, and Soltani (2012), indicates that these personalized advertisements greatly raise the risk of impulsive purchases online. In contrast, by including personal communication and visible product interaction, in-store personalization may engage consumers differently than online personalization which typically depends on salesperson interactions and physical displays tailored to shopper preferences.

Furthermore, another trend is the augmented reality (AR) in retail which offers vibrant and interactive experiences that allow consumers to see things on their devices in a real-world setting. AR can significantly boost customer engagement and emotional involvement, which are important indicators of impulsive purchasing, according to Papagiannidis et al. (2017). Online, Augmented reality (AR) provides a digital overlay that enables realistic product previews, like seeing how furniture might look in a user's living room. In an in-store setting, AR can improve the in-store purchasing experience by providing digital information layers over real product displays and allow to merge the online interactivity with the physical richness of in-store shopping.

Finally, another important trend are the social media platforms such as Instagram, or Pinterest for example, which serve as powerful channels for impulsive spending, impacting consumer behaviors in both in-store and online shopping contexts. Dinh, Wang, and Lee (2023) talk about how being exposed to influencer and peer purchases on social media generates FOMO (Fear of Missing Out) and a sense of urgency that can lead to impulsive purchases. While internet platforms offer direct links to purchase products, social media influences in-store experiences by QR codes and mobile promotions that customers can access while in physical stores.

2.5. Research Hypotheses

With this literature review, it helped to define the research hypotheses of this thesis. In this research, we want to investigate in further detail the difference of impacts of online and in-store shopping contexts on impulsive buying behavior and how self-regulation can influence these differences. Based on the research questions and the literature review, some hypotheses were defined and presented just below:

Hypothesis 1 (H1): Online shopping will be associated with higher levels of impulsive buying behavior compared to in-store shopping.

Online shopping environments, with their 24/7 accessibility and personalized marketing tactics, are poised to encourage higher levels of impulsive buying behavior compared to in-store shopping. According to Xiao & Nicholson (2013), the immediacy and convenience of online shopping platforms, along with real-time promotions and a streamlined purchasing process, substantially increase the likelihood of impulsive purchases.

Hypothesis 2 (H2): Higher levels of self-regulation will reduce the likelihood of impulsive buying behaviors in online shopping environments, compared to lower levels of self-regulation. It is hypothesized that individuals with higher self-regulation will exhibit less impulsive buying behavior in an online context compared to those with lower self-regulation. This is based on theories suggesting that self-regulation helps control impulses that might otherwise be triggered by the convenience and immediacy of online shopping (Baumeister, Vohs, & Tice, 2007).

Hypothesis 3 (H3): In the in-store shopping environment, individuals with high self-regulation will exhibit greater consistency in their purchasing patterns compared to those with low self-regulation.

This hypothesis proposes that individuals with higher levels of self-regulation are likely to exhibit more stable purchasing behaviors in in-store shopping environments. People with higher levels of self-regulation are better able to stick to their intended buying habits and resist impulses to make impulsive purchases (Muraven, M., & Baumeister, R. F., 2000).

3. Methodology

3.1. Data Collection

This study was designed to test the research hypothesis, we are going to see in more detail the methodology that was used to perform these tests. The data collection process used to gather responses from 100 participants. This section details the sampling method, participant demographics, and data collection instruments used in the study.

Participants were collected through a multi-channel approach to ensure a diverse sample. The survey was distributed mainly to friends and family through various social media platforms (Messenger, Instagram, WhatsApps), it was also shared on LinkedIn and via a QR code placed in a doctor's waiting room. This mixed method of distribution allowed for a broad reach, encompassing different social networks and physical locations, facilitating participation from a wide range of individuals. Participation in the survey was voluntary, with no incentives offered.

The survey collected demographic information to contextualize the responses within specific participant characteristics. First, for the age participants were asked to select from categories the one corresponding to their age. The categories were as follows: Under 18, 18-24, 25-34, 45-54, 55-64, 65 or older. Concerning the nationality, participants were asked to select their nationality from a multiple-choice list, which included French, Canadian, Portuguese, Italian, Spanish, and German. There was also an "Other, please specify" option to accommodate those who did not identify with the listed nationalities. This question was designed to allow only one answer, focusing on the primary nationality of each participant.
The survey queried participants on their employment status with multiple choices such as employed full-time, employed part-time, unemployed, student, retired, and other. This information helps to understand the economic backgrounds and daily engagements of the participants, which may influence their perspectives and responses. Participants were also asked about the highest level of school completed or the highest degree received. Options ranged from less than a high school diploma to a master's degree.

The primary language of the survey was English. However, to accommodate non-English speakers and increase the inclusiveness of the study, the survey was also translated into French. This allowed participants who are native French speakers to participate comfortably, ensuring broader accessibility. This was an online survey done through Qualtrics, designed to be user-friendly and accessible via mobile and desktop devices, then SPSS was used to analyze the data collected.

Concerning the independent variable, there were two conditions of X, condition X1 presented participants with stimuli Online shopping context; in condition X2 participants were presented with stimuli In-store shopping context. Participants were attributed to one specific scenario during the questionnaire. For the dependent variable, in this study, it is impulsive buying behavior. This is what was measured in each participant to assess the impact of the shopping context. It reflects how the various environments could potentially trigger impulsive purchases.

3.2. Procedure

Participants were provided a short introduction explaining to them the goal of this study and the anonymity of their answers. Participants were then randomly assigned to a precise scenario; they were assigned to the online shopping context scenario or the in-store shopping context scenario.

Both scenarios were constructed in the same way, with the same questions asked in both contexts (see Appendix 1 for the full transcript of the questionnaire). First, the participants were presented with a scenario where they needed to imagine themselves in it by impersonating a fictional character for the purpose of the study, where a gender-neutral name was chosen so anyone can more easily relate to the character. This scenario and the following questions were adapted from the following study of Xueming Luo, 2005: *How Does Shopping With Others Influence Impulsive Purchasing?*

Here the scenario for the in-store context: *"Please imagine that Alex is a 25-year-old young professional with a full-time job in a media agency. It is two days before Alex gets their next paycheck and they only have $35 left for necessities. In addition to food, Alex needs to buy a small gift for their friend's house-warming party. After work Alex goes by themselves to the mall to purchase the gift. As they are walking through a final department at the store, Alex sees a great looking sweater on sale for $75. Please take a few seconds to imagine yourself in this situation."*

After reading the scenario, Rook and Fisher's (1995) measure was used to evaluate impulsive buying. Participants were specifically asked to select which of the following five purchase decisions the fictional character would make: *Buy only the small gift, Want the sweater but decide not to buy it, Decide not to buy the small gift, Buy both the small gift and the sweater with a credit card, Buy both, plus a pair of jeans and a t-shirt*. With the same alternatives, the following question was based on a multi-item Likert scale, with points ranging from 1 (extremely unlikely) to 5 (extremely likely), was used to record responses so participants could rate the purchase alternatives and how likely it would be to behave that way.

Then, participants were asked to imagine themselves in the shopping situation and report which four items they agreed with, in order to create an index of impulsive urge: (a) "I experienced a number of sudden urges to buy," (b) "I wanted to buy things even though they were not on the shopping list," (c) "I had strong urges to make impulsive purchases," as well as (d) "I felt a sudden urge to buy." A multi-item Likert scale, with points ranging from 1 (strongly disagree) to 5 (strongly agree), was used to record responses (Luo, 2005).

After that, participants were told to imagine that Alex actually bought the unplanned $75 sweater and the planned gift to evaluate their attitude towards this decision. Five 7-point semantic differentials (good vs. bad, rational vs. crazy, wasteful vs. productive, attractive vs.

unattractive, smart vs. stupid, acceptable vs. unacceptable, generous vs. selfish, serious vs. silly, and mature vs. childish) were used to evaluate this impulsive buying in different groups (Rook and Fisher, 1995).

Then, two questions were asked to participants, but they no longer needed to imagine themselves in Alex's shoes in the scenario. These two questions are just about their perceptions. First, the measurement of buying impulsiveness was evaluated, a multi-item Likert scale, with points ranging from 1 (strongly disagree) to 5 (strongly agree), was used to record responses, this scale was based on the study from Rook and Fisher, 1995 called Normative Influences on Impulsive Buying Behavior. Nine items were measured in this question: I often buy things spontaneously. / "Just do it" describes the way I buy things. / I often buy things without thinking. / "I see it, I buy it" describes me. / "Buy now, think about it later" describes me. / Sometimes I feel like buying things on the spur-of-the-moment. / I buy things according to how I feel at the moment. / I carefully plan most of my purchases." / Sometimes I am a bit reckless about what I buy. The second question focuses on self-regulation. To measure this, the Self-regulation questionnaire (Brown et al., 1999) was utilized, and 8 items were taken out and included in the questionnaire. This is because the basic reference questionnaire has 63 items, and not all of them are pertinent to the particular situation of impulse buying. We decided to isolate 8 items for this reason, and the study was based on them. The 8 items are as follows: *It's hard for me to notice when I've had enough (food, sweets, ...) / I don't seem to learn from my mistakes / I am able to resist temptation / I have rules that I stick by no matter what / I'm good at finding different ways to get what I want / I usually think before I act / I learn from my mistakes / Before making a decision, I consider what is likely to happen if I do one thing or another*.

At the end of this block a manipulative check was used to verify if the respondents read all the scenarios and were paying attention in which context they were, for that they needed to answer to the question: "*While imagining the previous scenario, where were you imagining Alex making their shopping? (definitely online / definitely in-store)*". After answering all the questions in the first block, they were asked some questions about their shopping habits in general and the demographics (age, nationality, employment status, highest degree) were collected. Finally, they were thanked for participating in this survey.

In this study, the experimental design that was chosen is a between-subjects design. The experiment had a one variable 2 Shopping context (Online, In-store) between subjects' design. In this experiment, there was also the self-regulation that was acting as a moderator.

3.3. Statistical Method

After collecting all the necessary data through the Qualtrics survey, data were exported, treated, imported, and analyzed through the software SPSS, that allows us to test our data to help us test our research hypotheses.

In this software, all the collected data was consolidated in one file. Then, the file was prepared to be analyzed, first a dummy variable was created to distinguish between the participants to know which ones were coming from the online scenario and which one from the in-store scenario. This binary variable is essential for group comparisons, where "0" represents participants from the in-store scenario and "1" those from the online scenario.

For the variables, some of them were measured using multiple items on a predefined scale (Likert Scale), and to analyze them a variable was computed to represent the mean score of these items. This step was mandatory, for simplifying the data and reflects a specific construction, like the intensity of impulsive buying or the perception towards self-regulation.

Then, concerning the analysis, various t-tests were performed to compare mean scores between the two independent groups (online vs. in-store). This statistical test was used to identify if there are any significant differences in impulsive buying behavior depending on the shopping contexts. For two precise questions, concerning the personality towards impulse buying and the perception towards self-regulation, the analysis was pushed a little further with the use of the ANCOVA model. It was used to adjust the effect of self-regulation (used as a covariate) on the outcome variable (impulsive buying). With this model, it helps to determine if the observed differences between the two shopping scenarios are consistent regardless of variations in self-regulation among participants.

To conclude for this part, the goal of this statistical analysis was to discover whether differences in impulsive buying between online and in-store shopping contexts are independent of the shoppers' levels of self-regulation. With the t-tests, it allowed to highlight direct group differences without the influence of other variables, and with ANCOVA it adjusted for self-regulation and the personality towards impulse buying. In the next part, the analysis will be

explored in detail with the results obtained through SPSS. The significance of the various will be interpreted, and the findings from ANCOVA will be discussed with a focus on how self-regulation as a covariate impacts the relationship between shopping context and impulsive buying.

4. Analysis

4.1. Descriptive statistics

Concerning the profile of the respondents, the age distribution is more towards the younger population, with a strong concentration (72% of the participants) between 18 and 34 years old. The typical respondent is in their late twenties to early thirties, also presented in Table 1. Concerning the nationality, most of the respondents are coming from France, that can be explained by the fact that the survey was mainly distributed in France, which implies that the survey results are primarily representative of French views and may not generalize well to other nationalities. There are also some international participations, the results are presented in Table 1. Then, having a look at the levels of employment of the respondents, most of them are employed (57,4%) which correlates with their educational level, where most of them obtained a bachelor's or master's degree. The large percentage of students (24,8%) likely reflects ongoing higher education pursuits, which again aligns with the fact that a lot of respondents have bachelor's and master's degrees. These two demographics variables suggest a relatively young population (high percentage of students) in this study and highly educated, which could influence their social and economic behaviors, all the results are presented in Table 2.

Table 1: Socio-demographics (Age and Nationality) - Descriptive statistics

Socio-demographics			
Q15		Q16	
Age		Nationality	
1.Under 18	1,00%	1. French	70,30%
2.18-24	33,70%	2. Canadian	6,90%
3.25-34	38,60%	3. Italian	3,00%

4.35-44	9,90%	5. Portuguese	4,00%
5.45-54	7,90%	6. German	5,00%
6.55-64	5,90%	7. Other (specify)	8,90%
7.65 or older	2,00%	4. Spanish	0,00%

Table 2: Socio-demographics (Employment status and Highest degree received) - Descriptive statistics

Socio-demographics			
Q17		Q18	
Employment status		Highest degree received	
1. Employed	57,40%	1. Less than high school degree	5,00%
2. Retired	4,00%	2. High school degree or equivalent	9,90%
3. Student	24,80%	3. Bachelor degree or equivalent	37,60%
4. Unemployed	2,00%	4. Master degree or equivalent	39,60%
5. Other	9,90%	5. Other	5,90%

Now, looking at the shopping habits of the respondents, they prefer shopping a few times a month (27,7%). Online shopping is very common (34.7%) alongside traditional shopping locations like malls (31.7%) and department stores (18.8%). This suggests that consumers have a flexible purchasing style that combines the ease of online shopping with the in-store experience. There is a focus on groceries (23,80%) and clothing (19,80%) purchases that demonstrate that essentials take precedence, all the results are presented in Table 3. However, the inclusion of categories, such as skincare and electronics, implies that expenditure on leisure and personal goods is also present. Most respondents are budget-conscious with the majority of the segments falling under $200 (84,2%) but are willing to occasionally spend more on higher-value items. And finally, there is a significant preference for shopping alone (57,40%), all the results are presented in Table 4.

Table 3: Shopping Habits (Shopping frequency, Preferred shopping locations and Typical shopping purchases) - Descriptive statistics

Shopping Habits					
Q9		Q10		Q11	
Shopping Frequency		Preferred Shopping Locations		Typical Shopping Purchases	
1. Everyday	1,00%	1. The mall	31,70%	1. Clothes	19,80%
2. A few times a week	5,00%	2. Grocery store	11,90%	2. Shoes	2,00%
3. About once a week	18,80%	3. Online	34,70%	3. Groceries	23,80%
4. A few times a month	27,70%	4. Department store	18,80%	4. Electronics	3,00%
5. Once a month	18,80%			5. Skincare / make-up products	3,00%
6. Less than once a month	25,70%			6. Home goods	5,90%

Table 4: Shopping Habits (Typical shopping budget and Preference for shopping alone or with others) - Descriptive statistics

Shopping Habits			
Q12		Q14	
Typical Shopping Budget		Preferences for Shopping Alone or With Others	
1.$50 or less	26,70%	1. Alone	57,40%
2.$51-$100	33,70%	2. With someone else	39,60%
3.$101-$200	23,80%		

4.$201-$500	8,90%		
5.More than $500	1,00%		

4.2. T-tests

Various t-tests were performed to compare the data between the two groups (online and in-store) on the different questions concerning the scenario about the character Alex.

First, for Q1, concerning the choice between the five purchase alternatives between only buying the small gift to buying the small gift plus other items. Looking at the Levene's test for equality of variances, this indicates that the variances between the two groups are not significantly different : $F = 2{,}837$, $p = 0.095$, indicates that the assumption of equal variances was met. There is no significant difference in purchase decision scores between the in-store shoppers ($M = 1.72$, $SD = 1.107$) and the online shoppers ($M = 1.75$, $SD = 1.324$) with $t(99) = -0.103$, $p = .918$.

Then, for Q2, which corresponds to the rate of the likelihood to engage in various purchases based on the same choices as in Q1, using a scale from extremely unlikely to extremely likely. All the options except the fourth one about "buy both the small gift and the sweater with a credit card" were showing no significant differences between the 2 shopping contexts. However, option four was showing a significant difference, with online shoppers ($M=2.80$, $SD=1.549$) more likely to engage in this purchase decision than in-store shoppers ($M=2.28$, $SD=1.371$).

Now, looking at Q3, where participants were asked to rate the extent to which they agree with various statements related to impulsive purchases based on the scenario on a scale from strongly disagree to strongly agree. A means of this scale with the different options was done and this new variable was called Impulse Buying. In this t-test between the two groups, in-store environment ($n=50$) and online environment ($n=51$), there is a significant difference in impulsive buying score between the two groups, $t(99)= -2.629$, $p =.010$ (two-sided). And in this case, impulsive buying is higher in the online shopping context than the in-store shopping context.

Moreover, when looking at Q4, participants needed to rate their attitude towards a specific scenario, where Alex decides to buy both an unplanned $75 sweater and the planned gift. In this question, the participants needed to evaluate various attributes such as good vs. bad, ... A

dummy variable was created to measure the overall attitude towards Alex's decision. When the t-test was realized, no significant difference was observed between the two shopping contexts, *t(*99)= 1.366, *p*= .176 (two-sided). The mean difference observed was 0.16593 with a standard error of difference of 0.12149.When looking in more details at this analysis, each attribute was also evaluated individually. Two attributes showed statistically significant differences. First, attitude towards rationality (Rational vs. Crazy), showed that in-store shoppers (*M*= 3.53, *SD*= 0.902) viewed the decision as more rational than online shoppers (*M*= 3.88, *SD*= 0.918), *t*(99)=1.936, *p*= -.056. Then, attitude towards generosity (Generous vs. Selfish), revealed that in-store shoppers (*M*= 2.84, *SD*= 1.184) saw this decision as less generous than online shoppers (*M*= 2.94, *SD*= 1.047), *t*(99)= -4,455, *p*= .325.

Finally, for Q5 and Q6, t-tests were performed before doing ANCOVAs for these two questions. First, having a look at Q5, where participants rated their tendency towards impulse buying using a series of various statements assessing spontaneous purchasing behaviors on a scale from strongly disagree to strongly agree. The t-test revealed no significant difference *t*(97)= -1.406, *p*=.163 (two-sided). Then, looking at Q6, participants rated their agreement with statements regarding self-regulation, using statements for the Self-Regulation Questionnaire (Brown et al., 1999). Here, there is also no significant difference in the perception of self-regulation between the two shopping contexts, *t*(97)= 1.091, *p*= .278 (two-sided).

4.3. ANCOVAs

As mentioned above, for Q5 and Q6, the analysis was taken a step further to gain a better understanding of the participants' attitudes and to better test the hypotheses. For that, ANCOVA analysis was used by doing a univariate analysis of variance on SPSS for both Q5 concerning the personality towards impulsive buying and Q6, concerning the perception towards self-regulation.

To begin, having a look at Q5, the ANCOVA analysis looks at the relationship between the shopping context and the personality towards impulsive buying, and the impact they have on impulsive buying behavior. About 45.8% of the variance in impulsive buying is explained by the corrected model, which is statistically significant ($F(2, 96) = 40{,}619$, $p < .001$; $R^2 = .458$, Adjusted $R^2 = .447$). This shows that impulsive buying is significantly predicted by the model as a whole. First, when looking at the effects of shopping context, this variable significantly affects impulsive buying, $F(1.96) = 5.856$, $p = .017$, which suggests that depending on the

shopping context it plays a significant role in influencing impulsive purchases. Here, the online shopping context has a higher impact on impulsive buying behaviors compared to the in-store context. Then, the personality towards impulse buying is a significant predictor of impulsive buying, ($F(1, 96) = 68{,}112$, $p < .001$). This indicates that individual differences in personality towards impulsive buying have a significant impact on impulsive buying behavior, with higher levels of impulsive buying being correlated with higher scores on this personality trait. Also, concerning the interaction between the shopping context (online vs. in-store) and the personality towards impulse buying, with this ANOVA analysis it cannot confirm for sure if there is an interaction. However, both shopping context and personality towards impulse buying were significant predictors of impulsive buying, so it can suggests that there may be an interaction effect.

Then, looking at Q6, when analyzing the influence of the shopping context and self-regulation on impulsive buying, the mean score for impulsive buying was higher for online shoppers (M= 3.4608, SD= 0.99796) compared to in-store shoppers (M= 2.8542, SD= 1.16673), which indicates that people shopping online tented to have higher impulsiveness in their purchasing behaviors. The effect of the independent variable, the shopping context (in-store vs. online), on impulsive buying was significant, $F(1.96) = 7{,}944$, p= .006. This shows that the type of shopping environment has a moderate impact on impulsive buying behaviors, with online shopping leading to more impulsive purchases. When looking at the covariate which is self-regulation, it did not significantly predict impulsive buying, $F(1.96)= 0.299$, p= .586, which suggests that individual differences in self-regulation didn't significantly alter the relationship between the shopping context and impulsive buying. This analysis can show that the shopping context can play a significant role in the influence of impulsive buying decisions. Online shoppers are probably more impulsive buyers than in-store shoppers. Even after considering participant differences in self-regulation that showed that there is no significant difference, we can see that the effect of the shopping context holds beyond the ability to self-regulate.

5. Discussion

This research aimed to better understand the influence of shopping context on the impulsive buying behaviors, while also analyzing the influence of self-regulation and taking into account various attitudes towards purchasing decisions, through different statistical analyses, such as t-tests and Analysis of Covariance. All these analyses were done to have a strong understanding

how individuals deal with impulsive purchases depending on the shopping contexts and to test the various hypotheses which were developed.

In the descriptive statistics part, the main understanding was that in all the participants there was a clear trend of higher impulsive buying in online settings. This observation aligns with the hypothesis that online shopping contexts, with their accessibility, anonymity, and lack of physical restrictions (like carrying items), encourage impulsive purchases more than other contexts.

A consistent trend surfaced from all of the analyses that were done, showing that, in contrast to in-store settings, online shopping environments typically promote higher levels of impulsive buying. So, the first hypothesis of this study stated that online shopping will be associated with higher levels of impulsive buying behavior compared to in-store shopping has been confirmed. With the various t-tests that were performed and the ANCOVAs, they indicated that online shopping is associated with higher levels of impulsive buying. Particularly, by analyzing Q5, participants in the online environment reported significantly higher impulsive buying scores than those in the -in-store setting ($F(1.96)= 5.856$, $p=.017$). The results support the findings from previous research by (Xiao & Nicholson, 2013)which proposed that the ease of use and availability of online shopping amplify impulsive buying habits when compared to in-store.

The second hypothesis stated that higher levels of self-regulation will reduce the likelihood of impulsive buying behaviors in online shopping environments, compared to lower levels of self-regulation has been rejected. With the analysis, the moderating effect of self-regulation on the relationship between shopping context and impulsive buying was explored. The ANCOVA results for Q6 showed that even if self-regulation was included as a covariate, it did not significantly alter the relationship between the shopping context (in-store vs. online) and impulsive buying behaviors ($F(1.96)= 0.299$, $p= 0.586$). This analysis suggests that self-regulation doesn't have a strong moderating effect on impulsive buying behavior in different shopping contexts, which is contradictory to what Baumeister, Vohs, & Tice (2007) theorized, when they said that individuals with higher levels of self-regulation would be more able to resist the numerous temptations found in online shopping context. However, in their findings the moderating effect of self-regulation on the association between online shopping and impulsive purchase. This suggests that while self-regulation, as theorized by Baumeister, Vohs, & Tice (2007), is an influential factor in many behavioral contexts, its role may be less pronounced in specific contexts such as online environment or in-store environment compared to other factors,

like basic features of the online shopping context itself, which might dominate the effects of self-regulation.

The third hypothesis stated that in the in-store shopping environment, individuals with high self-regulation will exhibit greater consistency in their purchasing patterns compared to those with low self-regulation has not been confirmed. The results of this analysis were nuanced; they suggest that while self-regulation indeed influences impulsive purchases, the complexities of how these behaviors manifest in in-store environments require more detailed analysis. The ANCOVA results of Q6 showed that the effect of self-regulation was not as strong as predicted. This shows that the association between shopping context and impulsive buying is not significantly moderated by self-regulation, as measured by this study. This raises the idea that other factors may also play significant roles in influencing purchase consistency in in-store shopping context.

Another interesting finding concerns Q5, which demonstrates a strong relationship between personality and impulsive buying behaviors, highlighting the significant influence of inherent traits that lead individuals to behave impulsively. This is consistent with other research (e.g., Verplanken & Herabadi, 2001) showing that impulsive traits strongly predict impulsive buying. Moreover, the shopping context (in-store vs. online) also influences impulsive purchases but to a lesser extent. This shows that although an individual's personality traits are a more significant drive of impulsive buying, the shopping environment can nonetheless trigger such behavior. In this research, one of the most significant contributions is that it takes into account the control of self-regulation and impulsivity, showing that the influence of the shopping context on impulsive buying persists even when these variables are being studied. So, it can suggest that no matter a person's impulsive tendency, the shopping context plays a distinct and significant role in impulsive purchasing behavior. Impulsivity is consistently and strongly predicted by personality factors that incline people to it. This implies that interventions aimed at reducing impulsive buying should consider personality-targeted approaches, possibly through cognitive-behavioral techniques designed to enhance self-control and decision-making processes. Furthermore, these results also indicate that methods to reduce impulsive purchasing in online context may be beneficial for all consumers, not only the ones that are prone to impulsive behaviors.

6. Conclusion

6.1. Main conclusion

In order to better understand how the shopping context - whether online or in-store - affects impulsive buying and how self-regulation functions to moderate this relationship, this thesis set out two key questions in consumer behavior. Based on an extensive literature review and a rigorous analysis, the study provided significant insights into the dynamics of shopping environments and the effects on impulsive buying behaviors.

The research clearly showed that compared to in-store shopping, the online shopping context considerably increases the propensity for impulsive buying. This result is in line with theories and existing literature that highlight the role of environmental cues and situational facilitators found in online contexts, such as anonymity, various choices of products, and ease of access. These cues and situational facilitators reduce the psychological barriers to impulsive behaviors. This thesis fully addresses the first research question by offering strong empirical support for the argument that online shopping contexts are more naturally prone to impulsive buying.

In response to the second research question, the research discovered that, contrary to the original hypothesis, self-regulation doesn't considerably moderate the effect of the shopping situation on impulsive buying behavior. This implies that individual differences in self-regulation may be subordinated to the strong influences of the online buying environment. While self-regulation is typically thought of as a barrier against impulsive behaviors, it seems to be less effective when buying online because there are more strong cues of impulsivity present. This challenges some of the existing theoretical perspectives and raises the possibility that our understanding of how self-regulation works in highly stimulating consumer environments has to be updated.

Furthermore, this study's implications are extended to industry practices, advising online retailers to take into account techniques that, depending on their company objectives, could either leverage or prevent impulsive buying tendencies. It promotes the creation of user interfaces, such as customized alerts or decision tools based on users' previous purchasing patterns, that can provide customers more influence over the purchases they make. Transparency and ethical marketing practices are encouraged, enabling customers to make more informed purchases.

In conclusion, this study contributes to our understanding of the variables that affect impulsive purchasing decisions in different shopping contexts, highlighting the particularly strong influence of online settings. Moreover, it redefines our perception of self-regulation in these contexts, providing fresh perspectives for upcoming studies and useful applications meant to encourage better consumer behavior in the digital era. The study fills in gaps in the literature and creates new directions for future research by addressing the complex relationship between personal traits and environmental factors that shapes consumer behavior.

6.2. Theoretical and Practical Implications

Theoretical implications

This thesis shows that the shopping context - especially the shift towards online environments - strongly influences consumer impulsivity, which significantly increases our knowledge of impulsive buying behavior. The study offers strong proof in favor of the theory that the convenience, anonymity, and digital interface of online shopping contribute to an increased likelihood of impulsive purchases. In this study, the results contribute to the current state of knowledge regarding impulsive buying by providing proof of the powerful stimulant triggers of digital retail environments, which differ from in-store settings.

Furthermore, the study challenges preexisting ideas that normally see self-regulation as a strong barrier against impulsivity by reevaluating the function of self-regulation in different shopping contexts. The results show that the shopping context has an important role in moderating the effectiveness of self-regulation, with less influence in online contexts where psychological triggers are more serious and frequent. Also, this insight can broaden our theoretical perspective of self-regulation which can be dependent on the shopping context within consumer behavior, but also it highlights new trends in online shopping that are changing consumer behavior and retail strategies.

Practical implications

By putting forward the differences between online and in-store shopping environments, this thesis provides retailers, marketers, policymakers, and technology developers with useful information about how to influence impulsive purchasing behaviors in consumers. These results can be used by retailers, especially those operating online, to create shopping spaces that deliberately control customer impulsivity. Some features such as virtual shopping carts that require review before purchase and “cooling-off” periods, can help to minimize impulsive

purchases, but other features that facilitate the purchasing process may help business models that rely on high turnover from impulse purchases.

The research emphasizes the necessity of protective measures and instructional initiatives to safeguard consumers in digital marketplaces on the fronts of policy and consumer education. Consumers can be empowered to better control their purchasing behaviors by creating digital tools that support self-regulation, such as applications that track spending or send alerts on impulsive behavior, and by developing guidelines that assist in identifying and resisting marketing tactics intended to trigger impulsive buying. The need for more research to be done in order to create e-commerce environments that maintains a balance between customer well-being and business goals, is also highlighted in this thesis. In future innovations, some tools such as personal customization could be included in order to help to reduce impulsive tendencies.

In conclusion, this comprehensive analysis highlights the need for nuanced approaches in both research and practical applications, with the goal of understanding and adapting the variety of factors that influence consumer purchasing behaviors in increasingly complex retail environments.

6.4 Limitations and future research

While this study has provided valuable insights into the relationship between shopping context, self-regulation, and impulsive buying behavior. However, there are several limitations that should be taken into account and provide guidelines for further study.

In this study, the findings are based on a sample that could not accurately reflect larger cultural and demographics contexts, it was mainly participants from France with a similar profile. Research in the future could improve generality by involving a larger group of participants from various socioeconomic backgrounds, cultural backgrounds, and geographic regions. This extension would contribute to understanding how cultural and economic factors impact impulsive buying behaviors in different shopping contexts.

Also, a limitation of this research is the fact that both shopping contexts were analyzed through an online survey. This means that the lack of a physical, in-store shopping environment may have influenced the responses of the participants, even if the insights gained through the survey

were valuable for analyzing their attitudes. Participants might not fully experienced or remember the same impulses and triggers they encounter in an in-store setting, which can have an impact on how accurately in-store and online shopping behaviors are compared. Research in the future, should integrate real in-store observations or experiments, to develop conclusions that are more representative of actual experiences, regarding the differences between impulsive buying behavior in the two shopping contexts.

Furthermore, it is challenging to determine whether one condition causes another due to the cross-sectional nature of this study. Longitudinal studies have the potential to provide more definitive insights into the relationship between shopping behaviors and self-regulation across time, as well as how changes in one domain may affect others.

The study's main application of quantitative methods may have limited the depth of personal experiences and motivations that qualitative data might reveal. This is particularly true when attempting to identify the mental triggers behind impulsive purchases in various shopping contexts. The study's main application of quantitative methods may have limited the depth of personal experiences and motivations that qualitative data might reveal. This is particularly true when attempting to identify the mental triggers behind impulsive purchases in various shopping contexts. Future studies might profit from combining quantitative and qualitative data in a mixed-methods approach. Focus groups and interviews are examples of qualitative research methods that could be used to gain a deeper understanding of the psychological and mental processes that drive impulsive purchases either in-person or online. That approach would make it possible to examine consumers' perceptions of and reactions to marketing strategies in various retail environments in more detail. This approach would help researchers comprehend both the "what" and the "why" behind impulsive purchasing.

Furthermore, as retail technologies advance, so do customer interactions and behaviors in the shopping environments. Future studies should include cutting edge retail technologies such as personalized AI recommendations, virtual reality shopping, and the incorporation of online elements into physical stores. This research could examine how self-control functions in these technologically enhanced settings as well as how impulsive purchasing behaviors are affected by or increased by these new technologies.

Lastly, particular facets of self-regulation including emotional control, decision fatigue, and the influence of external variables like time constraints or social pressure should all be the subject of future research. It could be fascinating to examine the self-regulation strategies that consumers employ in the heat of the moment while they are shopping.

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8. Appendix

Appendix 1: Qualtrics Survey

Introduction: Dear Participant,

The following Study aims to understand consumer behavior in different contexts and we are interested in the most honest, intuitive and spontaneous response. There are no right or wrong answers.

The survey is conducted in partial fulfillment of the Master Thesis in International Management and Marketing at the Católica-Lisbon School of Business and Economics. The survey will take about 5 minutes and all answers are highly appreciated. The collected data will be treated anonymously and oly used for research and academic purposes. Your participation in this study is completely voluntary.

Thank you very much for your time and participation!

Warning: In this study we want you to imagine yourself in a specific shopping situation, how you would feel and behave. For that reason, please carefully read the instructions and take a few seconds to imagine yourself in the situation you will be described in.

Bloc 1: Scenario In-store: Please imagine that Alex is a 25-year-old young professional with a full-time job in a media agency. It is two days before Alex gets their next paycheck and they only have $35 left for necessities. In addition to food, Alex needs to buy a small gift for their friend's house-warming party. After work Alex goes by themselves to the mall to purchase the gift. As they are walking through a final department at the store, Alex sees a great looking sweater on sale for $75.

Please take a few seconds to imagine yourself in this situation.

Q1.a: Please answer the following question imagining yourself in the previous scenario.

Please consider the following purchase alternatives and choose which one of the five purchase decision alternatives Alex would make.

- Buy only the small gift
- Want the sweater but decide not to buy it
- Decide not to buy the small gift
- Buy both the small gift and the sweater with a credit card

- Buy both, plus a pair of jeans and a t-shirt

Q2.a: Please answer the following question imagining yourself in the previous scenario.

Please consider the following purchase alternatives and rate how likely would it be to behave that way.

	Extremely unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Extremely likely
Buy only the small gift	○	○	○	○	○
Want the sweater but decide not to buy it	○	○	○	○	○
Decide not to buy the small gift	○	○	○	○	○
Buy both the small gift and the sweater with a credit card	○	○	○	○	○
Buy both, plus a pair of jeans and a t-shirt	○	○	○	○	○

Q3.a: Please rate the extent to which you agree with the following sentences when you imagine yourself in the previous scenario.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I experienced a number of sudden urges to buy	○	○	○	○	○
I wanted to buy things even though they were not on the shopping list	○	○	○	○	○
I had strong urges to make impulsive purchases	○	○	○	○	○
I felt a sudden urge to buy	○	○	○	○	○

Q4.a: Please answer the following question imagining yourself in the previous scenario.

Please consider now that Alex actually bought both the unplanned $75 sweater and the planned gift.

How do you qualify this purchase?

Good	○	○	○	○	○	Bad
Rational	○	○	○	○	○	Crazy
Wasteful	○	○	○	○	○	Productive
Attractive	○	○	○	○	○	Unattractive
Smart	○	○	○	○	○	Stupid
Acceptable	○	○	○	○	○	Unacceptable
Generous	○	○	○	○	○	Selfish
Serious	○	○	○	○	○	Silly
Mature	○	○	○	○	○	Childish

Q5.a: For this question, you don't need to imagine yourself in the previous scenario. It is only about your perception.

Please rate the extent to which you agree with the following sentences.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I often buy things spontaneously.	○	○	○	○	○
"Just do it" describes the way I buy things.	○	○	○	○	○
I often buy things without thinking.	○	○	○	○	○
"I see it, I buy it" describes me.	○	○	○	○	○
"Buy now, think about it later" describes me.	○	○	○	○	○
Sometimes I feel like buying things on the spur-of-the-moment.	○	○	○	○	○
I buy things according to how I feel at the moment.	○	○	○	○	○
I carefully plan most of my purchases.	○	○	○	○	○
Sometimes I am a bit reckless about what I buy.	○	○	○	○	○

Q6.a: For this question, you don't need to imagine yourself in the previous scenario. It is only about your perception.

Please rate the extent to which you agree with the following statements.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
It's hard for me to notice when I've had enough (food, sweets, ...).	○	○	○	○	○
I don't seem to learn from my mistakes.	○	○	○	○	○
I am able to resist temptation.	○	○	○	○	○
I have rules that I stick by no matter what.	○	○	○	○	○
I'm good at finding different ways to get what I want.	○	○	○	○	○
I usually think before I act.	○	○	○	○	○
I learn from my mistakes.	○	○	○	○	○
Before making a decision, I consider what is likely to happen if I do one thing or another.	○	○	○	○	○

Q7.a: While imagining the previous scenario where were you imagining Alex making their shopping?

- Definitely online
- Definitely in-store

Q8.a: How easy was it for you to imagine Alex doing their shopping on that scenario?

- Extremely difficult
- Somewhat difficult
- Neither easy nor difficult
- Somewhat easy
- Extremely easy

Bloc 2: Scenario Online: Please imagine that Alex is a 25-year-old young professional with a full-time job in a media agency. It is two days before Alex gets their next paycheck and they only have $35 left for necessities. In addition to food, Alex needs to buy a small gift for their friend's house-warming party. Alex is working from home and during the lunch break, they browse the internet to find the perfect gift. As Alex is going through different websites, Alex find one with the perfect gift and Alex also sees a great looking sweater on sale for $75.

Please take a few seconds to imagine yourself in this situation.

Q1.b: Please answer the following question imagining yourself in the previous scenario.

Please consider the following purchase alternatives and choose which one of the five purchase decision alternatives Alex would make.

- Buy only the small gift
- Want the sweater but decide not to buy it
- Decide not to buy the small gift
- Buy both the small gift and the sweater with a credit card
- Buy both, plus a pair of jeans and a t-shirt

Q2.b: Please answer the following question imagining yourself in the previous scenario.

Please consider the following purchase alternatives and rate how likely would it be to behave that way.

	Extremely unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Extremely likely
Buy only the small gift	○	○	○	○	○
Want the sweater but decide not to buy it	○	○	○	○	○
Decide not to buy the small gift	○	○	○	○	○
Buy both the small gift and the sweater with a credit card	○	○	○	○	○
Buy both, plus a pair of jeans and a t-shirt	○	○	○	○	○

Q3.b: Please rate the extent to which you agree with the following sentences when you imagine yourself in the previous scenario.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I experienced a number of sudden urges to buy	○	○	○	○	○
I wanted to buy things even though they were not on the shopping list	○	○	○	○	○
I had strong urges to make impulsive purchases	○	○	○	○	○
I felt a sudden urge to buy	○	○	○	○	○

Q4.b: Please answer the following question imagining yourself in the previous scenario.

Please consider now that Alex actually bought both the unplanned $75 sweater and the planned gift.

How do you qualify this purchase?

Good	○	○	○	○	○	Bad
Rational	○	○	○	○	○	Crazy
Wasteful	○	○	○	○	○	Productive
Attractive	○	○	○	○	○	Unattractive
Smart	○	○	○	○	○	Stupid
Acceptable	○	○	○	○	○	Unacceptable
Generous	○	○	○	○	○	Selfish
Serious	○	○	○	○	○	Silly
Mature	○	○	○	○	○	Childish

Q5.b: For this question, you don't need to imagine yourself in the previous scenario. It is only about your perception.

Please rate the extent to which you agree with the following sentences.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I often buy things spontaneously.	○	○	○	○	○
"Just do it" describes the way I buy things.	○	○	○	○	○
I often buy things without thinking.	○	○	○	○	○
"I see it, I buy it" describes me.	○	○	○	○	○
"Buy now, think about it later" describes me.	○	○	○	○	○
Sometimes I feel like buying things on the spur-of-the-moment.	○	○	○	○	○
I buy things according to how I feel at the moment.	○	○	○	○	○
I carefully plan most of my purchases.	○	○	○	○	○
Sometimes I am a bit reckless about what I buy.	○	○	○	○	○

Q6.b: For this question, you don't need to imagine yourself in the previous scenario. It is only about your perception. Please rate the extent to which you agree with the following statements.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
It's hard for me to notice when I've had enough (food, sweets, ...).	○	○	○	○	○
I don't seem to learn from my mistakes.	○	○	○	○	○
I am able to resist temptation.	○	○	○	○	○
I have rules that I stick by no matter what.	○	○	○	○	○
I'm good at finding different ways to get what I want.	○	○	○	○	○
I usually think before I act.	○	○	○	○	○
I learn from my mistakes.	○	○	○	○	○
Before making a decision, I consider what is likely to happen if I do one thing or another.	○	○	○	○	○

Q7.b: While imagining the previous scenario where were you imagining Alex making their shopping?

- Definitely online
- Definitely in-store

Q8.b: How easy was it for you to imagine Alex doing their shopping on that scenario?

- Extremely difficult
- Somewhat difficult
- Neither easy nor difficult
- Somewhat easy
- Extremely easy

Shopping Habits: Some questions to better understand your shopping habits.

Q9. How often do you go shopping?

- Everyday
- A few times a week
- About once a week
- A few times a month
- Once a month
- Less than once a month

Q10. Where do you usually go shopping?

- The mall
- Grocery store
- Online
- Department store

Q11. What do you usually buy when you go shopping?

- Clothes
- Shoes
- Groceries
- Electronics
- Skincare / Make-up Products
- Home goods

Q12. How much money do you usually spend when you go shopping? (depending on the location of the participants)

- $50 or less
- $51-$100
- $101-$200
- $201-$500
- More than $500

Q13. How much money do you usually spend when you go shopping? (depending on the location of the participants)

- 50€ or less
- 51€-100€
- 101€-200€
- 201€-500€
- More than 500€

Q14. Do you usually go shopping alone or with someone else?

- Alone
- With someone else

Demographics:

Q15. What is your age?

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65 or older

Q16. What is your nationality?

- French
- Canadian
- Italian
- Spanish
- Portuguese
- German
- Other, please specify:

Q17. Which of the following categories best describes your employment status?

- Employed
- Retired
- Student
- Unemployed
- Other

Q18. What is the highest level of school you have completed or the highest degree you have received?

- Less than high school degree
- High school degree or equivalent
- Bachelor degree or equivalent
- Master degree or equivalent
- Other

End of survey: Thank you for participating in this survey and taking the time to answer all the questions. Your input is highly valuable for this research.

Appendix 2: T-tests data from SPSS

Q1: T-test: Alternative chosen:

Group Statistics

	InstorevsOnline	N	Mean	Std. Deviation	Std. Error Mean
Q1.a	0	50	1,72	1,107	,157
	1	51	1,75	1,324	,185

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Q1.a	Equal variances assumed	2,837	,095	-,103	99	,459	,918	-,025	,243	-,508	,457
	Equal variances not assumed			-,103	96,608	,459	,918	-,025	,243	-,507	,457

Independent Samples Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval	
				Lower	Upper
Q1.a	Cohen's d	1,222	-,021	-,411	,370
	Hedges' correction	1,231	-,020	-,407	,367
	Glass's delta	1,324	-,019	-,409	,371

a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control group.

Q2: T-test: Evaluate Alternatives:

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Q2.a_1	Equal variances assumed	,004	,952	,126	99	,450	,900	,024	,190	-,354	,402
	Equal variances not assumed			,126	97,978	,450	,900	,024	,191	-,354	,402
Q2.a_2	Equal variances assumed	,302	,584	,777	99	,220	,439	,180	,231	-,279	,639
	Equal variances not assumed			,777	99,000	,220	,439	,180	,231	-,279	,638
Q2.a_3	Equal variances assumed	,206	,651	,719	98	,237	,474	,132	,183	-,232	,495
	Equal variances not assumed			,716	93,160	,238	,476	,132	,184	-,233	,497
Q2.a_4	Equal variances assumed	2,441	,121	-1,798	99	,038	,075	-,524	,291	-1,102	,054
	Equal variances not assumed			-1,801	97,980	,037	,075	-,524	,291	-1,101	,053
Q2.a_5	Equal variances assumed	2,540	,114	-1,062	99	,145	,291	-,208	,196	-,597	,181
	Equal variances not assumed			-1,064	95,732	,145	,290	-,208	,196	-,597	,180

Q3: T-test: Impulse Buying:

Group Statistics

	InstorevsOnline	N	Mean	Std. Deviation	Std. Error Mean
ImpulseBuying	0	50	2,8950	1,16068	,16414
	1	51	3,4608	,99796	,13974

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
						Significance				95% Confidence Interval of the Difference
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
ImpulseBuying	Equal variances assumed	2,289	,134	-2,629	99	,005	,010	-,56578	,21525	-,99289	-,13868
	Equal variances not assumed			-2,625	96,230	,005	,010	-,56578	,21557	-,99368	-,13789

Q4: T-test: Attitude towards decision:

Group Statistics

	InstorevsOnline	N	Mean	Std. Deviation	Std. Error Mean
AttitudeTowardsDecision	0	50	3,4622	,65614	,09279
	1	51	3,2963	,56204	,07870

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
						Significance				95% Confidence Interval of the Difference
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
AttitudeTowardsDecision	Equal variances assumed	1,776	,186	1,366	99	,088	,175	,16593	,12149	-,07513	,40698
	Equal variances not assumed			1,364	96,112	,088	,176	,16593	,12167	-,07559	,40744

Q5: T-test: Personality towards impulse buying:

Group Statistics

	InstorevsOnline	N	Mean	Std. Deviation	Std. Error Mean
PersonalityTowardsImpulseBuying	0	48	2,6736	,74356	,10732
	1	51	2,8671	,62342	,08730

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
						Significance				95% Confidence Interval of the Difference
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
PersonalityTowardsImpulseBuying	Equal variances assumed	1,093	,299	-1,406	97	,081	,163	-,19349	,13761	-,46660	,07962
	Equal variances not assumed			-1,399	91,936	,083	,165	-,19349	,13834	-,46826	,08127

Q6: T-test: Perception towards self-regulation

Group Statistics

	InstorevsOnline	N	Mean	Std. Deviation	Std. Error Mean
PerceptionTowardsSelfRegulation	0	48	3,5104	,33801	,04879
	1	51	3,4363	,33761	,04728

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
						Significance				95% Confidence Interval of the Difference
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
PerceptionTowardsSelfRegulation	Equal variances assumed	,014	,907	1,091	97	,139	,278	,07414	,06793	-,06069	,20897
	Equal variances not assumed			1,091	96,623	,139	,278	,07414	,06794	-,06070	,20898

Appendix 3: ANCOVAs data from SPSS

Q5: ANCOVA of personality towards impulse buying:

Tests of Between-Subjects Effects

Dependent Variable: ImpulseBuying

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	56,320[a]	2	28,160	40,619	<,001	,458
Intercept	,618	1	,618	,891	,347	,009
PersonalityTowardsImpulseBuying	47,221	1	47,221	68,112	<,001	,415
InstorevsOnline	4,060	1	4,060	5,856	,017	,057
Error	66,555	96	,693			
Total	1115,625	99				
Corrected Total	122,875	98				

a. R Squared = ,458 (Adjusted R Squared = ,447)

Q6: ANCOVA of perception towards self-regulation

Tests of Between-Subjects Effects

Dependent Variable: ImpulseBuying

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	9,452[a]	2	4,726	4,000	,021	,077
Intercept	5,852	1	5,852	4,953	,028	,049
PerceptionTowardsSelfRegulation	,353	1	,353	,299	,586	,003
InstorevsOnline	9,386	1	9,386	7,944	,006	,076
Error	113,423	96	1,181			
Total	1115,625	99				
Corrected Total	122,875	98				

a. R Squared = ,077 (Adjusted R Squared = ,058)