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Debt or Discipline?

An Experimental Comparison of BNPL and SNBL on Consumer Behavior

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Abstract

The payment solution Buy Now, Pay Later (BNPL) has gained widespread adoption in recent years due to its flexibility, however, it has also faced increasing criticism in terms of consumer protection. In response to this, the payment solution Save Now, Buy Later (SNBL) has emerged, anticipated to address parts of these concerns. Yet SNBL remains unexplored in literature, posing questions on how it contrasts to BNPL and relates to consumer behavior. To address this gap, we draw on established theoretical concepts within consumer behavior, examining the differential influence of BNPL and SNBL on impulsive buying behavior and subsequent post-purchase outcomes. A quantitative study was conducted using an experimental design followed by a self-reporting questionnaire, in which participants representing the Swedish market took part. The findings revealed an unexpected result in terms of impulsive buying behavior, demonstrating higher levels for SNBL compared to BNPL. Moreover, the findings also revealed support for the positive relationship between impulsive buying behavior and return intention, mediated by post-purchase regret. This chain reaction, as well as the direct relationship between impulsive buying behavior and post-purchase regret, was more pronounced among BNPL users. This suggests that the emerging SNBL is associated with lower levels of post-purchase regret and subsequent return intention. Practically, this has implications for retailers as they can leverage SNBL for strategic planning, cater to a broader customer segment, and promote more responsible spending behavior. Theoretically, this study contributes by being among the first to empirically investigate SNBL, both as a standalone payment solution and in comparison to BNPL.

Key words: *"Save Now, Buy Later", "Buy Now, Pay Later", Impulsive Buying Behavior, Return Intention, Consumer Behavior.*

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Astrid & Ebba

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List of Abbreviations

BNPL	Buy Now, Pay Later
HSO	Hedonic Shopping Orientation
IBB	Impulsive Buying Behavior
IP	Impulsiveness Propensity
POP	Pain of Paying
PPR	Post-Purchase Regret
RI	Return Intentions
SNBL	Save Now, Buy Later
USO	Utilitarian Shopping Orientation
UTB	Urge to Buy

1. Introduction

1.1 Background

In today's increasingly digital retail landscape, payment solutions have become a crucial factor shaping consumer behavior and decision-making processes (Wu et al., 2020; Yu et al., 2022). Evidently, one of the most common reasons consumers abandon their online shopping carts is the absence of their preferred payment solution, which is often influenced by product type, price, and likelihood of return (Svea Bank, 2025). This difference in payment preferences emphasizes the need for retailers to offer diverse payment alternatives. In response to these evolving consumer preferences, innovative solutions like "Buy Now, Pay Later" (BNPL) and the emerging "Save Now, Buy Later" (SNBL) have gained prominence.

1.1.1 Buy Now, Pay Later: A Popular Solution Facing Growing Criticism

While the definition of BNPL varies internationally, it commonly refers to invoice-based purchases in Sweden. This payment solution involves a short-term credit arrangement that allows consumers to make immediate purchases and defer payment. Either the payment can be deferred for up to 30 days without incurring interest or fees (as long as the invoice is settled by the due date), or it can be deferred and divided into installments, often including additional fees (Svahn, 2023).

Sweden witnessed an early launch of BNPL services compared to the rest of the world. This early adoption was largely driven by the pioneering efforts of Klarna, a renowned Swedish fintech company that considerably shaped the BNPL market (Sveriges Riksbank, 2024). Parallel to the rapid expansion of e-commerce, BNPL adoption has grown substantially both globally and within Sweden, particularly among younger consumers (Svahn, 2023). This growth can be attributed to the easy access to funds, its flexibility, and the prominent marketing of pay later solutions as convenient payment options (Fook & McNeill, 2020). BNPL providers' apps typically offer consumers an overview of their purchases and allow them to manage payments by paying off amounts early, dividing them into installments, or even delaying payment further (Grøtan & Hjorthol, 2021). This flexibility, coupled with access to

interest-free funds, is often seen as a key benefit of BNPL (Fook & McNeill, 2020), particularly when compared to the more stringent approval processes of credit cards. Notably, in 2023, BNPL accounted for 40-60% of sales volumes in the Swedish e-commerce sector, positioning Sweden with the highest share of BNPL payments in e-commerce globally at approximately 24% (Svahn, 2023).

Despite this, the BNPL model has received increasing criticism, particularly regarding consumer protection. Critics argue that BNPL encourages impulse buying, over-consumption, and over-indebtedness (Forbes Councils, 2024; Financial Conduct Authority, 2021). More specifically, BNPL can create a sense of detachment from the financial implications of purchases, enhancing impulsive buying behavior. These impulsive purchases may lead consumers to buy more goods and services than they initially intended or could afford, driving over-consumption. Accordingly, as shoppers accumulate multiple BNPL debts across various purchases, the total of their future payment obligations can become unmanageable, resulting in over-indebtedness (Fung, 2024).

Yet, from a retail perspective, BNPL has demonstrated significant positive impacts on KPIs. In particular, retailers offering BNPL have seen a reduction in cart abandonment rates, partly due to the perceived consumer safety it offers, allowing customers to review goods before payment. This, in turn, strengthens trust and encourages purchase completion, contributing to BNPL's demonstrated increase in sales figures (Svahn, 2023). However, this sales boost is often accompanied by higher return rates, reflecting the impulsivity that BNPL triggers. Preliminary data from an ongoing research project at the Stockholm School of Economics indicates that consumers who choose BNPL solutions return items 50-55% more frequently than those who pay using conventional payment solutions (Handelsrådet, n.d.). Ultimately, this raises questions about whether BNPL's impact on retailers' bottom lines is truly positive.

1.1.2 Save Now, Buy Later: An Emerging Payment Solution

In response to these growing concerns surrounding BNPL and consumer debt, the alternative and fundamentally different payment model SNBL has emerged. SNBL is a digital payment solution where consumers save towards their desired purchase in advance. Typically, users set up a savings plan via the SNBL provider's platform. This platform is directly integrated with the retailer from which the user intends to buy, enabling regular deposits towards their goal. To incentivize this saving behavior, consumers are often offered various benefits such as cashback or discounts upon reaching their savings goal (Ajene, 2023). By encouraging planning and saving, this save-first approach fosters more thoughtful and deliberate purchasing decisions. This inherent debt-free nature of SNBL not only contributes to greater financial well-being among consumers, but also mitigates impulsive buying behavior and overconsumption, positioning it as a more responsible financial option compared to BNPL models (Beresford, 2023).

The principle of saving before purchasing is not new, as historically demonstrated by layaway programs and interest-bearing savings accounts. With the rise of digital banking, banks began offering features such as automatic saving, goal-setting, and tools for monitoring spending patterns to encourage saving behavior. However, the key challenge has consistently been how to turn these savings programs into sources of revenue (Shah & Franz, 2023). The SNBL model leverages similar behavior-stimulating tools enabled by digitalization, such as gamification and embedded financial features, to maintain user engagement and foster financial discipline (Rana et al. 2023). What distinguishes SNBL is its revenue generation model: SNBL providers earn income through interchange fees and performance-based payments from brand partners (Ajene, 2023).

The SNBL concept is gaining traction globally, with actors like Accrue in the United States, Monkee in Austria, and Hubble in India leading the way (Ajene, 2023). However, its adoption remains limited in Sweden, despite the country's high rate of digital adoption and openness to fintech innovation (Svea Bank, 2023). Nevertheless, signs of change are emerging. In August 2023, Klarna launched *Klarna Balance*, a feature offering cashback rewards for saving ahead of purchases (Klarna, 2024), explicitly

marketed as an SNBL solution. This launch signals growing interest in alternative payment models, making the investigation of Swedish consumer response to SNBL particularly timely and relevant. Examining behavioral outcomes such as impulsive buying behavior, post-purchase regret, and return intentions might yield valuable insights for consumers and retailers. Moreover, such research could help inform scholars and policymakers seeking to understand the broader implications of SNBL within the context of evolving payment solutions.

As SNBL is currently in an exploratory phase, characterized by low consumer awareness and the absence of dominant actors, the structure of this nascent market remains highly malleable. This presents a timely opportunity to investigate alternative implementations of SNBL before pioneering SNBL providers gain momentum and institutionalize market norms. In this context, our interest lies in how consumers might respond to SNBL solutions offered directly by retailers as part of their value proposition, excluding the intermediary.

1.2 Research Gap

The landscape of payment solutions has been examined through various psychological, financial, and technological lenses, often focusing on how different models shape consumer behavior. Recently, BNPL models have gained notable attention in academic research in recent years, with numerous studies investigating their impact on consumer behavior and debt. This increasing scholarly focus on pay later services mirrors the rapid and widespread adoption in commercial settings, as well as the growing academic interest in its behavioral implications.

In contrast, the SNBL model remains significantly underexplored, representing a notable gap in the literature. One of the few studies to address the gap is the exploratory work by Rana et al. (2023). They aimed to examine the global landscape of SNBL platforms, including their technological features, user adoption, and potential to enhance consumer financial independence. However, their study's reliance on a small-scale survey, limited theoretical grounding, and potential generalizability issues underscore the need for further rigorous investigation. This limited body of research is particularly striking

considering SNBL's increasing adoption in international markets and its positioning as a potentially more responsible alternative to credit-based options like BNPL. Consequently, little is known about how SNBL might shape consumer behavior. Concepts central to the BNPL literature, such as impulsive buying, post-purchase regret, and return intentions, have yet to be examined in the context of SNBL.

As SNBL begins to enter new markets, such as the Nordics, a timely opportunity arises to investigate its potential behavioral effects. These insights could carry implications not only for consumers' financial well-being but also for retailers, scholars and regulators interested in the evolving intersection between finance, behavior, and sustainability.

1.3 Purpose and Expected Contribution

The purpose of this study is multifaceted. First, it aims to put SNBL on the map, and investigate its underlying psychological mechanisms. Second, it seeks to explore how this emerging payment solution compares to the popular yet increasingly criticized BNPL model regarding consumer behavior. By investigating their distinct impacts on impulsive buying behavior and subsequent post-purchase outcomes, such as regret and return intentions, we aim to better understand the broader implications of these payment options.

This study is expected to contribute to the academic literature on payment solutions by highlighting the differences in consumer behavior between SNBL and BNPL, potentially drawing parallels and offering insights applicable to other payment solutions. Additionally, we aim to provide practitioners with insights to better guide their decisions on whether to integrate SNBL into their checkout processes.

1.3.1 Research Questions

Based on the rationale and objectives outlined above, this study proceeds to examine the following two research questions:

- *How do SNBL and BNPL differentially influence consumers' impulsive buying behavior through underlying mechanisms?*
- *How do SNBL and BNPL differentially influence the relationship between impulsive buying behavior and post-purchase outcomes?*

1.4 Delimitations

This study is geographically delimited to Sweden, focusing on Swedish consumers' responses to emerging digital payment solutions. Sweden represents a relevant context due to its high levels of digital adoption, widespread online shopping habits (Svea Bank, 2025), as well as a demonstrated openness to fintech innovations, illustrated by early adoption of mobile payment services like Swish and rapid normalization of BNPL options (Svea Bank, 2023). Moreover, recent local developments, such as Klarna's introduction of SNBL-like services, make Sweden a timely and meaningful setting for examining consumer behavior around new payment solutions.

Moreover, this study focuses specifically on BNPL and SNBL models. These offer fundamentally distinct approaches to shopping and payment timing, making them compelling points of comparison for determining their effects on consumer behavior. For the BNPL condition, the commonly used "Pay within 30 days" format is chosen as it is the most frequently used form of BNPL in Sweden (Svea Bank, 2025; Svahn, 2023). Other formats of BNPL, such as installment plans or interest-based loans, are excluded to maintain clarity and focus in the experimental design. Furthermore, the SNBL format applied in this study refers specifically to solutions in which consumers set up a designated savings account at an e-commerce retailer, through which they systematically save toward a specific purchase. To ensure experimental consistency, incentives often included in SNBL were excluded.

Additionally, this study is delimited to e-commerce, as it is deeply embedded in Swedish consumer behavior (Svensk Handel, 2025) and is the primary setting in which BNPL and SNBL services operate. Finally, this study does not examine actual purchasing behavior. Instead, it relies on self-reported measures of behavioral intentions. This approach is widely adopted in experimental research, where intentions are often used as a valid proxy for real behavior (Balau, 2018), particularly in contexts where actual transactions are not feasible to observe.

1.5 Disposition

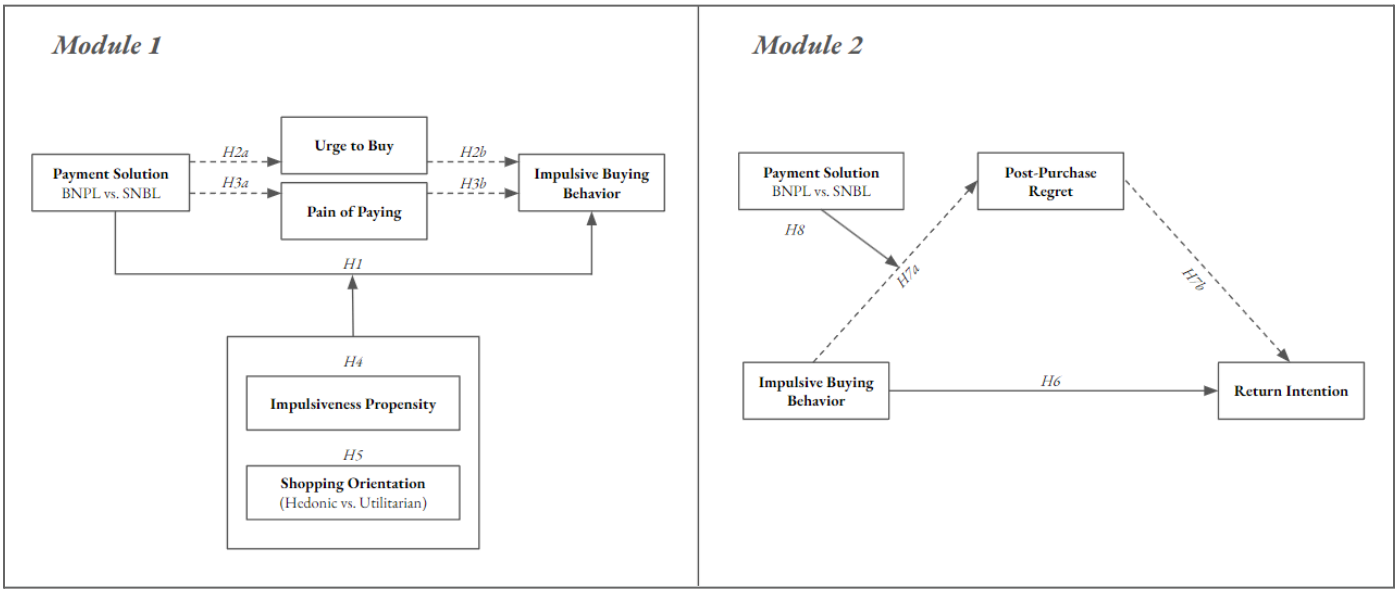
Having established the background, research questions and objectives, expected contributions, and scope of this study in the preceding (1) Introduction, the subsequent chapters of this thesis are structured as follows: (2) Conceptual Framework and Literature Review, (3) Method, (4) Results, (5) Analysis and Discussion, and culminating in (6) Conclusion.

2. Conceptual Framework & Literature Review

To effectively address the purpose of this study, the below conceptual framework is proposed. This framework, comprising two related modules, aims to comparatively analyze the impact of BNPL and SNBL on consumers' Impulsive Buying Behavior (IBB) and subsequent post-purchase outcomes. These modules integrate several key concepts which will be thoroughly examined in the subsequent literature review. Module 1 examines the antecedents of IBB, where payment solution (BNPL vs. SNBL) is the independent variable, influencing IBB directly and indirectly through Urge to Buy and Pain of Payment, and moderated by Impulsiveness Propensity and Shopping Orientation (Hedonic versus Utilitarian Shopping Orientation). Subsequently, Module 2 explores the consequences of IBB, where IBB becomes the independent variable and Return Intention (RI) the dependent variable, with Post Purchase Regret as a mediator, and payment solution as a moderator.

This study includes two dependent variables: IBB and RI. The choice to include both was grounded in the aim of capturing immediate as well as downstream effects of different payment solutions. IBB was chosen because it reflects how payment solutions influence consumers' tendency to make unplanned purchases. While the terminology of IBB allows for broad interpretation, it is in this study operationalized as deviating from the designated task by adding unplanned items to the fictional shopping cart. Moreover, RI was included to assess the practical consequences of such impulse-driven decisions. It captures participants' intention to return products, which is highly relevant for retailers facing the operational and financial impact of post-purchase outcomes. See Figure 1 for the illustrated proposed conceptual framework.

Figure 1: Conceptual Framework



2.1 Factors Influencing Impulsive Buying Behavior

2.1.1 Payment Solutions

Payment solutions are a crucial cornerstone for understanding consumer behavior and decision-making processes (Wu et al., 2020; Yu et al., 2022). Spanning from traditional cash to modern e-wallets and cryptocurrencies, payment solutions are commonly categorized by timing: pre-payment, post-payment, or immediate payment (Worthington, 1995). The timing and structure of payment solutions evoke distinct psychological responses, influencing consumer behavior through unique underlying mechanisms. Thus, to explain how different payment solutions shape consumer behavior, researchers draw on and combine various psychological concepts (Wang & Chan, 2025). In this study, literature on the two contrasting payment solutions BNPL and SNBL are examined, investigating their inherent psychological mechanisms and their impact on consumer behavior.

2.1.1.1 Buy Now, Pay Later

BNPL is a payment solution that has gained significant popularity alongside the growth of e-commerce, offering consumers the ability to acquire goods or services immediately while deferring the full payment to a later date. While sharing the characteristic of delayed payment with traditional credit cards, BNPL typically requires less stringent credit requirements, making it a more accessible option (Svahn, 2023). Previous studies have demonstrated that payment solutions can significantly influence spending behavior. For instance, credit cards have been found to trigger spending more compared to cash (e.g., Hirschman 1979; Raghubir & Srivastava, 2008). This can be explained by "temporal decoupling", which refers to the separation of purchase moment from actual payment (Prelec & Loewenstein, 1998). Similar to credit cards, BNPL also embodies these decoupling characteristics, which can trigger spending (Maesen & Ang, 2024) and arguably also impulsive buying behavior (Burg & Kein, 2023). The temporal decoupling inherent in the BNPL model, separating immediate gratification from future cost, resembles the psychological effects observed with credit cards, such as delayed payments and reduced perceived pain (Boden et al., 2020; Chatterjee & Rose, 2012; Shah et al., 2016).

In earlier research, Prelec and Loewenstein (1998) proposed that credit purchases can trigger negative emotions in consumers. In contrast, Bauer et al. (2021) found that emphasizing the interest-free aspect of credit financing weakens this negative emotional response, thereby reducing consumers' aversion to incurring debt. The common use of phrases such as "pay later" and "spread the cost" by BNPL providers aligns with this view and can further be explained by the theoretical concept of psychological distance. In this context, psychological distance refers to the individual's perception of the separation between the payment obligation and themselves (Trope & Liberman, 2010). By framing the payment as a future event, these phrases increase the temporal psychological distance, making the cost feel less immediate and consequential. These strategies used by BNPL providers obscure the perception of debt, thereby amplifying the perceived purchasing power (Polman et al., 2018). This increased psychological distance can lead to impulsive buying behavior as the immediate financial impact of the purchase feels less salient.

2.1.1.2 Save Now, Buy Later

SNBL, in contrast, is a payment solution that encourages consumers to save upfront towards a purchase, aiming to prevent overspending and promote financially responsible behavior (Rana et al., 2023). This principle of saving before buying bears resemblance to layaway, a system historically used by budget-constrained consumers to finance more expensive purchases, where the product is not received until the full payment is made (Pattillo & Kirk, 2021; Dimitrov & Ceryan, 2018). This characteristic of pre-payment distinguishes SNBL from traditional installment plans, as it requires full payment before possession and involves no interest or credit. Although existing literature on SNBL is scarce, its psychological impact on consumer behavior can be understood through the lens of future orientation and delayed gratification. Central to this is the concept of prospect. Engaging in prospective imagery, such as envisioning the future purchase one is saving for, has been shown to induce a future-oriented mindset. This shifts the focus from immediate gratification to delayed gratification in financial decisions. SNBL inherently encourages prospective imagery by requiring consumers to actively save for future purchases. This process can prime individuals to consider the long-term benefits of the desired item and the financial discipline of saving for it, thereby activating a future-oriented mindset. (Cheng et al., 2012).

Furthermore, future orientation has been conceptualized as drawing on a prospective outlook, motivating the cognitive representation of the prospective self and future-related behavioral tendencies. By making purchases contingent on prior saving, SNBL fosters a link between present action of saving and future acquisition of desired products. This aligns with findings that reminders of the prospect may activate a mindset for future orientation, thereby strengthening delayed gratification (Cheng et al., 2012). Additionally, SNBL introduces a crucial delay between a consumer's urge to buy (see section 2.1.3) and the actual transaction. Arguably, the mandatory saving period that SNBL implies could act as a buffer, disrupting the immediacy of the urge to buy. By encouraging a focus on a future goal (i.e., the desired purchase), SNBL can diminish the appeal of immediate gratification.

2.1.2 Impulsive Buying Behavior

Impulsive Buying Behavior (IBB), or simply impulsive buying, refers to sudden and immediate purchases made without prior planning to shop. Driven by a spontaneous urge to buy, this behavior involves little deliberation or forethought (Beatty & Elizabeth Ferrell, 1998). Early research on impulsive buying was primarily product-oriented, aiming to identify whether certain specific products could be classified as "impulse items" (Rook & Hoch, 1985). These were typically low-cost, frequently purchased items requiring minimal cognitive effort and often triggering automatic, reactive behavior (Langer et al., 1978; Langer & Imber, 1980). However, Bellenger et al. (1977) found that impulse buying extends across nearly all product categories, suggesting that very few products are entirely exempt from IBB. This shift prompted a transition in research focus from product characteristics to psychological processes underlying IBB.

Rook and Hoch (1985) introduced a theoretical model distinguishing impulsive buying from non-impulsive buying through five key elements. First, impulsive buying begins with a sudden, unexpected urge to act, often triggered by external stimuli such as product display or advertisement. This then manifests as an intense spontaneous urge to purchase. Second, this impulse creates psychological disequilibrium, a sense of inner tenison. This tension places the consumer in a temporary state of feeling out of control, stemming from the conflict between spontaneous desire and rational self-regulation. Third, consumers often experience an internal battle between the immediate gratification of the impulse and the rational consideration of long-term outcomes, such as budget constraints or future needs. Fourth, when acting on impulse, consumers engage in reduced cognitive evaluation, often bypassing rational decision-making. Instead, they tend to act on affect, resulting in behavior that is more automatic than deliberate. Finally, consumers engaging in impulsive buying exhibit a lack of regard for future consequences, prioritizing immediate gratification over long-term effects.

Considering these elements, BNPL closely aligns with the underlying mechanisms of IBB. The emphasis on immediate gratification amplifies the initial sudden urge to act. Moreover, the speed and simplicity of BNPL solutions, often involving one-click checkouts, minimize the cognitive effort required for purchase, making it easier for consumers to act on impulse with less conscious deliberation (Fook & McNeill, 2020). The temporal decoupling inherent in BNPL further weakens the perceived immediate financial consequence (Polman et al., 2018), diminishing internal conflict and consideration of long-term budget constraints. SNBL, on the contrary, introduces a pause in the purchasing process mandated by the requirement of saving before acquisition. This pause enables consumers to reflect before acting on impulse, thus making spontaneous, unplanned purchases less likely. In contrast to BNPL's focus on immediate gratification, SNBL operates on the principle of delayed gratification. By encouraging consumers to envision and save for a future reward (i.e, the desired purchase), it fosters a mindset less prone to IBB.

Thus, it is hypothesized that BNPL leads to more IBB compared to SNBL. BNPL's emphasis on immediate gratification, temporal decoupling, and reduced perceived financial pain fuels IBB. Conversely, while the exact psychological mechanisms of SNBL require further investigation, its emphasis on saving, thoughtful consumption and delayed gratification all point towards a reduced likelihood of IBB. This fundamental difference between BNPL and SNBL thus leads to the following hypothesis:

H1: BNPL leads to higher levels of Impulsive Buying Behavior compared to SNBL.

2.1.3 Urge to Buy

Urge to Buy (UTB) refers to a sudden desire to purchase, arising when individuals encounter specific stimuli in their surroundings (Beatty & Elizabeth Ferrell, 1998). While long acknowledged in consumer research, UTB has only recently been established as a distinct construct from IBB (Paul et al., 2022). Although the concepts are related, they are not interchangeable. Specifically, UTB can serve as an antecedent to IBB, initiating a two-stage process: first, the consumer experiences a UTB, and

second, they may act on this urge by making an unplanned purchase. Specifically, the actual impulse purchase only occurs if the individual acts to fulfill the urge (Rook & Hoch, 1985; Chen et al., 2018). Importantly, UTB does not always lead to IBB, further underscoring how they conceptually differ.

To better understand the underlying psychological mechanisms that drive UTB, research on the concept commonly applies the Stimulus-Organism-Response (S-O-R) model. This model posits that external stimuli trigger internal psychological and emotional reactions (organism), which subsequently can result in behavioral outcomes (response) (Paul et al., 2022). For instance, a simple and streamlined purchasing process facilitated by one-click check-out (Vázquez et al., 2020; Lim et al., 2017; Fook & McNeill, 2020) can influence a consumer's cognitive state, such that an UTB emerges. This urge can then evoke IBB.

Examining the stimulus component of the S-O-R model, particularly in relation to payment solutions, Feinberg (1986) suggests that credit cards act as significant consumption cues. Credit cards, used almost exclusively for purchasing, have acquired a symbolic meaning linked to spending, triggering UTB. Simulated buying situations have shown that the mere presence of credit card cues increased individuals' spending estimates, suggesting an automatic spending reaction (Feinberg, 1986). Furthermore, the organism component in this framework represents consumers' traits and psychological states, mediating the impact of external stimuli on behavior (Parboteeah et al., 2009). While stimuli act as external triggers, inherent consumer characteristics and psychological states shape how strongly consumers experience UTB. Examples of such traits are impulsiveness propensity, as well as hedonic and utilitarian shopping orientation (see sections 2.1.5 & 2.1.6) (Paul et al., 2022). The intensity of UTB ultimately influences consumers' purchasing decisions, directly impacting the likelihood of IBB (response).

Drawing parallels to emerging payment solutions, BNPL are argued to function similarly to credit cards as a psychological stimulus for immediate consumption. Like credit cards, BNPL is closely associated with consumption and instant gratification (see e.g. Boden et al., 2020). The strong

conditioning of BNPL as a spending cue can be attributed to its primary application within consumption settings and its high rate of adoption among Swedish consumers. This frequent usage, likely facilitated by its integrated checkout process (Svahn, 2023), fosters a strong associative link between BNPL and spending money. Thus, the presence of BNPL as a payment solution could trigger shopping-related cognitive associations, increasing UTB and potentially result in IBB. In contrast, SNBL's recent introduction to the Swedish market suggests weaker conditioned associations with spending. Moreover, SNBL solutions interrupt the purchasing process by requiring consumers to save before consuming, thus delaying gratification. SNBL may therefore weaken consumption cues and evoke less UTB compared to BNPL.

Given that payment options can act as stimuli triggering UTB, which subsequently might lead to IBB, the impact of different payment solutions on IBB is likely mediated by UTB. Furthermore, given BNPL's established association with consumption and its seamless integration into the purchasing process, it is theorized that it leads to higher levels of UTB compared to SNBL. Thus, the following hypotheses are proposed:

H2: The effect of Payment Solutions on Impulsive Buying Behavior is mediated by Urge to Buy.
H2a: BNPL leads to higher levels of Urge to Buy compared to SNBL.
H2b: Higher Urge to Buy increases Impulsive Buying Behavior.

2.1.4 Pain of Paying

Pain of Paying (POP) refers to the psychological discomfort consumers feel when making a purchase and parting with their money (Zellermayer, 1996). This discomfort can be attributed to consumers' perception of opportunity cost. Particularly, money spent on one thing inherently implies less money available for alternative things (Frederick et al., 2009; Rick et al., 2008). Consequently, shoppers experience greater POP when they perceive specific spending decisions to have a significant opportunity cost (Prelec & Loewenstein, 1998; Rick et al., 2008). Accordingly, the greater the POP consumers experience when considering or making a purchase, the less likely they are to buy (Prelec & Loewenstein, 1998).

Another key element influencing POP is payment transparency, where less payment transparency makes the payment feel less painful. Numerous studies have examined this topic, indicating that cash is perceived as most painful due to its high transparency and immediate outflow of money (Liu & Chou, 2020), followed by debit cards, which still involve direct payment but with a less tangible transaction (Runnemark et al., 2014). Credit cards and BNPL solutions further reduce POP by delaying the financial burden through temporal decoupling mechanisms (Rick, 2018). Finally, recent technological developments within payment solutions are further reducing the transparency by automating transactions and minimizing consumers' awareness of spending (Shah et al., 2016).

Early research stated that POP occurs at the end of the shopping journey (Zellermayer, 1996). However, more recent research suggests this pain can be experienced at any stage of the process, even before completing the checkout or making the actual payment (Sheehan & Van Ittersum, 2018). This implies that the emotional discomfort can be experienced even when thinking about spending money, not solely when actually doing it. Additionally, Zellermayer (1996) proposes that intensity of pain decreases when a transaction is perceived as within one's control and a payment-before-consumption sequence. A strong consumer preference was found to pay before consuming, as paying for already enjoyed goods is more painful than paying for future consumption.

Lastly, payment solutions with lower POP have been shown to lower spending barriers, leading to increased purchase likelihood, decision speed, and higher amounts spent (Feinberg, 1986; Raghubir & Srivastava, 2008; Reshadi & Fitzgerald, 2023). However, research also suggests that experiencing lower POP can lead to reduced perceived value and less commitment to the product and organization, post-purchase (Shah et al., 2016). Contrastly, higher POP has been shown to foster stronger behavioral and psychological commitment, although reducing the immediate post-purchase satisfaction (Soster et al., 2014). This increased commitment reinforces brand and product loyalty over time (Shah et al., 2016). Ultimately, minimizing POP drives short-term sales, while increasing it strengthens lasting consumer commitment.

Given that various payment solutions are associated with different levels of payment transparency and POP, and that lower POP can increase purchase likelihood, it is reasoned that POP mediates the effect of different payment solutions on IBB. Although pre-payment has been associated with lower POP (Zellermayer, 1996), we anticipate that BNPL will result in even lower levels of POP than SNBL due to its delayed financial burden and lower transparency. Furthermore, the reduced pain associated with less transparent payment solutions like BNPL is theorized to lower the psychological barrier to impulsive purchases. Based on this reasoning, the following hypotheses are formulated:

H3: The effect of Payment Solutions on Impulsive Buying Behavior is mediated by Pain of Paying.
H3a: BNPL leads to lower levels of perceived Pain of Paying compared to SNBL.
H3b: Lower levels of Pain of Paying increases the level of Impulsive Buying Behavior.

2.1.5 Impulsiveness Propensity

Impulsiveness Propensity (IP), also referred to as "impulsiveness" or "impulsivity" in consumer behavior literature, is recognized as a personality trait. This trait manifests in consumers' buying behavior as a tendency to act spontaneously, unreflectively, and immediately (Rook & Fisher, 1995). In contrast to UTB and IBB, IP is the tendency to make unplanned purchases, while UTB is a momentary, immediate desire for a specific product, and IBB is the act of making an unplanned purchase (Beatty & Elizabeth Ferrell, 1998). As previously established, UTB is a key driver of IBB, with IP further influencing the intensity of this UTB (Paul et al., 2022). Specifically, for individuals high in IP, the stimulus of a desired product often triggers less deliberate thinking, driven by emotional attraction and the focus on immediate gratification (Hoch & Loewenstein 1991). Consequently, these consumers exhibit a heightened sensitivity to immediate cues and emotions, making them more prone to experiencing a strong UTB and ultimately increasing the likelihood of engaging in IBB (Rook & Fisher, 1995).

Moreover, concerning the role of IP in the context of payment solutions, research indicates BNPL users show a higher tendency for online IBB compared to non-users (Fook & McNeill, 2020). This suggests that individuals with inherently high levels of IP may be more drawn to and utilize BNPL services. Thus, it is logical to assume that the ease of use and the immediate gratification without upfront payment offered by BNPL platforms (Maesen & Ang, 2024; Boden et al., 2020) could particularly resonate with these consumers, potentially amplifying the direct relationship between BNPL and IBB. Nonetheless, while SNBL is presented as a payment solution that aims to reduce impulsivity and overconsumption (Rana et al., 2023), its effectiveness in mitigating IBB may be limited for individuals high in IP. Their underlying tendency for spontaneous and unreflective action is likely to persist even with a payment solution designed to encourage saving. This suggests that the influence of IP on IBB will likely be evident across different payment solutions.

Given that individuals with higher IP are more likely to act on impulses, they are also more likely to engage in IBB, regardless of payment solution. Thus, the following hypothesis is formulated:

H4: The effect of Payment Solution on Impulsive Buying Behavior is moderated by Impulsiveness Propensity, such that the positive effect is stronger for individuals exhibiting higher levels of Impulsiveness Propensity.

2.1.6 Shopping Orientation

Underlying shopping orientations can significantly moderate consumer behavior (Lee & Kim, 2022). These orientations, defined as consumers' general attitudes toward shopping based on their motivations (Brown et al., 2003; Scarpi, 2012), are primarily rooted in either hedonic or utilitarian shopping values (Babin et al., 1994).

A Hedonic Shopping Orientation (HSO) emphasizes the experiential and emotional aspects of shopping (Scarpi, 2020). It is characterized by playfulness, joy, and the desire for a pleasurable shopping atmosphere, encompassing curiosity, escapism, and fun. Consumers driven by hedonic motivations derive gratification from immediate pleasure and are often less focused on achieving a

practical outcome (Joo Park et al., 2006). This hedonic value increases UTB by making shopping feel tempting and pleasurable (Paul et al., 2022). For instance, some shoppers describe themselves as "a kid in a candy store", seeking enjoyment from the shopping experience itself rather than from acquiring a specific product (Fischer & Arnold, 1990). Consequently, hedonic shoppers exhibit greater propensity for exploration, impulsiveness, and unplanned purchases, resulting in less structured shopping behavior and less emphasis on pre-purchase planning (Scarpi, 2020; Lee & Kim, 2022). However, this tendency can also lead to financial difficulties, as unplanned purchases often disrupt budgets and result in post-purchase regret (Kivetz et al., 2006).

A Utilitarian Shopping Orientation (USO), in contrast, emphasizes rationality, functionality, and goal-oriented shopping (Scarpi, 2020; Chang & Cheng, 2015). Consumers with this orientation approach shopping with a task-focused mindset, prioritizing efficiency and the fulfillment of specific needs. For them, shopping often feels like a chore, and satisfaction is derived primarily from completing the task (Hirschman & Holbrook, 1982). In some cases, utilitarian value is even found in activities such as gathering information out of necessity, rather than for enjoyment (Bloch & Richins, 1983). Utilitarian value has also been displayed to enhance UTB in cases where a product is perceived as necessary or problem-solving (Paul et al., 2022). Despite this, consumers with primarily USO are less likely to engage in IBB, as their decisions are driven by practical and functional considerations. Instead, they are more inclined to make thoughtful, intentional purchases that align with clear, predefined goals (Scarpi, 2020).

Considering the characteristics of hedonic shoppers, who seek enjoyment and appreciate exploration and immediate gratification, they may be more susceptible to engaging in IBB. Conversely, as utilitarian shoppers tend to be more task-oriented and conduct more deliberation around their purchase, they are less likely to engage in IBB. Therefore, the following hypothesis is proposed:

H5: The effect of Payment Solution on Impulsive Buying Behavior is moderated by Shopping Orientation, such that the positive effect is stronger for Hedonic Shoppers than for Utilitarian Shoppers.

2.2 Consequences of Impulsive Buying Behavior

2.2.1 Post-Purchase Regret & Return Intention

According to regret theory, decision-makers evaluate their choices by comparing the selected option with alternatives they did not choose (Loomes & Sugden, 1982; Zeelenberg, 1999). In some cases, this evaluation reinforces satisfaction, but in others, it triggers regret, the feeling that one would have been better off choosing differently (Zeelenberg & Pieters, 1999; Zeelenberg & Pieters, 2006). Regarding consumer behavior, this decision-making process applies to purchase choices, where consumers compare the products they bought with those they left behind (Boles & Messick, 1995). When consumers perceive their purchase as a poor decision, this evaluation elicits Post-Purchase Regret (PPR) (Landman, 1987; Heitmann et al., 2007). PPR can arise even when consumers have little to no knowledge about the alternatives they did not choose, as forgone options can still be hypothetically evaluated (Tsiros & Mittal, 2000; Ritov & Baron, 1995). However, it is not only products that are evaluated but also the decision-making process itself. Individuals may experience PPR if they perceive their decision-making quality to be lacking. For example, they might feel they should have gathered more information about the product before making a purchase (Connolly & Zeelenberg, 2002; Zeelenberg & Pieters, 2006).

One key factor contributing to PPR is IBB, which is characterized by unplanned purchase and rapid decision-making that bypasses rational evaluation (Lim et al., 2017). Unlike non-impulsive buying behavior, IBB substitutes a reasoned series of actions with a spontaneous urge for immediate pleasure (Parboteeah et al., 2009), often resulting in PPR. Ultimately, higher levels of IBB are associated with increased PPR and lower customer satisfaction (Kumar et al., 2020). Another factor influencing PPR is the purchase channel. Online shoppers face limitations in physically inspecting and comparing products before purchase, which can heighten the likelihood of PPR (Park et al., 2015). As a result of increased PPR, businesses may face negative outcomes such as complaints, weakened customer loyalty, and product returns (Lim et al., 2017). More specifically, these product returns are often driven by consumers' Return Intentions (RI) as a direct consequence of their PPR (Barta et al., 2023). This

regret can be mitigated by the ability to easily reverse a purchase decision through product returns (Delacroix & Jourdan, 2007). This aligns with findings that even during the act of IBB, shoppers often reassure themselves with the thought that the product can be returned if they later have second thoughts (Park & Choi, 2013).

Building on this, the aforementioned literature has shown that cognitive effort in decision-making influences the level of PPR. When consumers engage in more deliberate thoughts before purchasing, they tend to believe they have made more informed decisions, which enhances their decision confidence and lowers PPR (Park et al., 2015; Park & Hill, 2018). Payment solutions can either encourage or discourage this deliberate thought process. SNBL increases cognitive effort by requiring consumers to actively save and plan their purchases over time. This contrasts with BNPL, which simplifies the purchase process and can minimize the cognitive effort involved in the immediate transaction.

Concludingly, when consumers perceive their impulsive purchase as a mistake, they experience higher levels of PPR. PPR, in turn, evokes RI. RI then drives product returns as a way to cope with the unpleasant feeling of PPR. While the theoretical sequence extends beyond RI and includes actual product returns, this study (consistent with its delimitations) limits its scope to RI. Therefore, to empirically examine the proposed relationships between IBB, PPR, and RI, and given the distinct temporal characteristics and cognitive efforts of using BNPL and SNBL, the following hypotheses are formulated:

H6: Higher levels of Impulsive Buying Behavior leads to higher levels of Return Intention.

H7: The effect of Impulsive Buying Behavior on Return Intention is mediated by Post-Purchase Regret, and the magnitude of this indirect effect varies depending on the Payment Solution used.

- **H7a:** Higher levels of Impulsive Buying Behavior increases the level of Post-Purchase Regret.
- **H7b:** Higher levels of Post-Purchase Regret leads to higher levels of Return Intention.

H8: The effect of Impulsive Buying Behavior on Post-purchase Regret is moderated by Payment Solution, such that the positive effect is stronger for individuals paying with BNPL (vs. SNBL)

3. Method

3.1 Research Approach

This study adopts a positivist research approach, grounded in the assumption that a single, observable social reality exists, one that is tangible, objective, and can be systematically examined (Park et al., 2020). The positivist paradigm emphasizes the use of empirical evidence to explain and predict social phenomena by identifying causal relationships between variables (Park et al., 2020; Saunders et al., 2019). From an ontological perspective, this study adheres to objectivism which claims that reality exists independently of perception and can be discovered through observation (Saunders et al., 2019). The epistemological stance reflects the belief that only knowledge produced through scientific methods is deemed valid. Meaning that it needs to rely on observable and quantifiable data (Collis & Hussey, 2013). In line with a value-free axiology, the researchers aim to remain neutral and objective throughout the study, minimizing bias in the formulation of hypotheses and interpretation of results (Sauders et al., 2019).

Positivist research methodologies emphasize deductive reasoning and quantitative analysis. Deductive reasoning involves formulating hypotheses based on existing theory and prior empirical findings, followed by systematic testing through data collection and statistical analysis (Bryman, 2016). Consistent with this logic, this study adopts a quantitative research strategy, combining a controlled experimental manipulation with a self-completion online survey. This was done given the purpose of this study as experiments allow for explanation to causality (Söderlund, 2018). The use of an online questionnaire enables efficient distribution and increased scalability, allowing for a geographically diversified and representative sample group, which favors the study's generalizability. These benefits were deemed to outweigh potential limitations, such as reduced control over participants identification and their question interpretation and (Bell et al., 2019).

Admittedly, a qualitative research method could have provided greater depth to our study as it typically aims to explore the underlying reasons and meanings behind behaviors from the participants' perspective (Bell et al., 2019). Although this would have been appreciated considering the scarce

literature SNBL currently offers, the other constructs in our conceptual framework possess a solid foundation of existing literature, providing theoretical guidance for this study. Additionally, the quantitative method emphasizes measurement and causality which allows for consumer behavior and intentions to be measured and analysed in a generalizable manner (Bell et al., 2019). Arguably, this was deemed the most suitable methodological choice.

3.2 Preparatory Work

To ensure clarity and confirm that participants could understand the various aspects of the survey, approximately a dozen individuals, including faculty members and fellow students, were asked to complete the full survey. Based on their feedback, adjustments were made to enhance scenario flow, translations, and formulations. Following this, a pilot test was conducted consisting of 159 participants. It aimed to evaluate instruction clarity, mobile functionality, and filter logic effectiveness, ensuring an optimal survey experience and data quality. From this, the manipulation check revealed poor participant understanding of their assigned condition, with only 60-70% accuracy across groups. To improve this level, the following adjustments were made. A timer was added to delay the appearance of the forward button, increasing the likelihood that participants would actually read the instructions and note their assigned condition. Moreover, the condition itself was colored so it was distinct from the rest of the text. Additionally, the naming of the conditions were revised to increase comprehension and create a clearer distinction between the payment solutions SNBL and BNPL. They were translated into Swedish and named “Spara först, köp sen” (Save first, buy later) and “Betala senare” (Pay later). In the full launch, the accuracy levels rose to approximately 85% across all groups. This suggested that the adjustments made the stimuli more noticeable and understandable, increasing clarity and validity of the experiment.

3.3 Main Study

The study was conducted using Qualtrics. Participants were first presented with an information page and then asked to explicitly provide or withhold their consent to participate by selecting the appropriate option. After consent, participants entered the experimental phase and subsequently completed the survey.

3.3.1 Experimental Design

The study's experimental phase was a classical randomized experiment, conducted in a contrived setting (Bell et al., 2019). A between-subjects design was chosen to examine the causal effects of different payment solutions (Söderlund, 2018). The experiment took place in a fictional e-commerce setting with a mobile layout. Participants were randomly assigned to one of three conditions; 1) Debit Card (acting as the control group), 2) SNBL, or 3) BNPL. They were asked to immerse themselves in a fictional shopping experience and tasked with purchasing a frying pan, but were also informed they could add other items to their shopping cart. The instructions encouraged them to shop as they normally would. As part of the experimental manipulation, participants were informed of the payment solution offered by the website before beginning the shopping task, using a neutral and informative explanation to ensure comprehensive understanding (see Appendix B).

Upon being introduced to the webpage, participants began scrolling through various products. The product assortment was intentionally broad, aiming to appeal to the diverse target group, and was the same for all participants. Products from the following categories were included: Sports, Home, Beauty & Care, and Fashion were included. To mitigate potential brand attitudes, the product pictures were AI-generated (see Appendix C). Once exposed to all products, participants were asked if they wanted to add anything to their shopping cart by marking the items they wanted to purchase. In this stage, participants were reminded of the payment solution the website offered and how it worked. They then proceeded to checkout and completed their purchase. The final stages varied depending on what condition participants belonged to, but they all had steps aiming to correspond to a real-life payment

situation. Participants in the Debit Card group paid for their purchase immediately, followed by a notification of shipment, and were thanked for placing their order. In contrast, the SNBL group was asked to envision initiating savings by making several deposits. A waiting period followed before they were informed that the payment could be fulfilled and the order would be sent. Only then were they thanked for placing an order. Lastly, the BNPL group was informed of the order shipment and that a deferred payment was due in 30 days. They then had to wait for a while, followed by a scenario where 30 days had passed and payment was due.

3.3.2 Survey Design

Upon completion of the experimental task, participants were directed to a self-administered questionnaire. The survey was designed to minimize interruptions by using continuous scrolling instead of paging, a method shown to reduce breakoff rates and improve response rates (Mavletova & Couper, 2014). The questionnaire consisted of 36 questions in total, all of which were closed-ended. Besides questions measuring the constructs, the survey collected demographic data to facilitate customized segmentation and ensure a diverse sample. These demographics questions allowed for more precise group comparisons and enhanced the study's generalizability. Notably, recognizing the potentially sensitive nature of these types of questions, they were positioned towards the end of the survey (Saunders et al., 2019).

3.3.2.1 Measures

The measures used in this study were adopted and adjusted from previous peer-reviewed research to ensure comparability and reliability. A 7-point Likert scale was employed for all constructs with the scale ranging from 1 = "Strongly disagree" to 7 = "Strongly agree". The only exception to this was for measuring POP which employed a scale ranging from 1 = "Not at all", to 7 = "Very much" to better capture the intensity of the emotional response associated with payment. Utilizing a Likert scale was preferable as it is considered the most beneficial approach for hypothesis testing (Bell et al., 2019). Furthermore, the scales were generally adapted to better suit the e-commerce context and in some cases

reduced in item count to keep the survey concise. The latter aimed to maintain participant engagement, reduce fatigue, and minimize dropouts. The decision of reducing items was guided by statistical considerations such as factor loadings, item-total correlations, percentage of variance, and alpha coefficients, all of which were informed by the original studie. Moreover, to add robustness in measuring IBB, behavioral observation of cart additions was included to address the potential discrepancy between self-reported and actual behavior in the simulated environment, as participants may not always acknowledge or report impulsive actions. Table 1 provides a summary of all measures.

For the dependent variables, IBB and RI, the self-reported scales were adapted from Lim et al. (2017) and Wang et al. (2023), respectively. However, unlike Lim and colleagues, who measured participants' reflections on actual past behavior, our study captures participants' responses within a hypothetical online shopping scenario. As such, our measures represent stated preferences, capturing their intentions or likelihood to act, rather than actual behavior (*revealed preference*) observed from real-world situations (Louviere et al., 2000). This approach allows for the examination of consumers' decision-making processes in contexts where real purchases or returns cannot be observed directly.

Due to the study's geographical delimitation to Sweden and the Swedish-speaking consumer panel, established measurement items were translated into Swedish. During the translation process, minor adjustments were made to preserve the original meaning and ensure linguistic fluency. The approach of conducting the survey in Swedish was also strongly recommended by the consumer panel manager.

Table 1: Measurement Items

Construct	Measurement Items	Source	Cronbach's Alpha
Urge to Buy	As I browsed this website, I had the urge to purchase items other than or in addition to my specific shopping goal. Browsing this website, I had a desire to buy items that did not pertain to my specific shopping goal. While browsing this website, I had the inclination to purchase items outside my specific shopping goal.	Parboteeah et al., 2009	0.926
Pain of Paying	*At the moment when you finished paying for your products, to what extent did you feel...* pain restricted irritated annoyed	Gu & Chen, 2023	0.903
Impulsive Buying Behavior	I unintentionally bought products in the shopping scenario In the shopping scenario, I made a unplanned purchase of products I bought products although I did not have intention to buy that product before browsing the website	Lim et al., 2017	0.932
Post-Purchase Regret	I feel sorry for choosing to shop the products I regret choosing to shop the products I should have chosen to shop other products	Liao et al., 2017	0.821
Return Intention	After I purchased the product, I intended to return it After I purchased the product, I planned to return it After I purchased the product, I wanted to return it	Wang et al., 2023	0.975
Impulsiveness Propensity	It is a struggle to leave nice things I see online. I sometimes cannot suppress the feeling of wanting to buy something online. I sometimes feel guilty after having bought something online. I sometimes buy things online because I like buying things, rather than because I need them.	Gulfraz et al., 2022	0.886
Hedonic Shopping Orientation	Shopping really means joy to me. A shopping trip really feels like an escape. Compared to other things I could do, shopping is really enjoyable. I enjoy being immersed in exciting new products.	Babin et al., 1994	0.925

Utilitarian Shopping Orientation	It feels good to know that my shopping trip was successful. On a particular shopping trip, it is important to find items I am looking for. It is important to accomplish what I had planned on a particular shopping trip. A good shopping experience is when it is over very quickly.	Cardoso & Pinto, 2010	0.731

3.3.3 Survey Distribution

The survey was distributed through Norstat, a European market research provider with established data quality controls. Norstat's pre-recruited panel admits members only during specific periods and by invitation, aiming to enhance participant authenticity. A two-step verification process and anti-cheat systems help prevent duplicate accounts and fraudulent responses. With quality assurance certified under ISO 9001 and ISO 20252:2019, Norstat follows standardized procedures to maintain data integrity (Norstat, n.d.). This approach of using a consumer panel was preferred for its ability to target a broad and representative sample of Swedish consumers. No specific criteria for selection were imposed by Norstat for the distribution of the survey, meaning that all members of their Swedish panel were eligible for invitation, ensuring a diverse sample in terms of age, gender, and geographic location.

3.3.4 Ethical Considerations

This study was conducted with careful attention to ethical considerations to ensure the protection of participants' rights and privacy, adhering to General Data Protection Regulation (GDPR). Participants were informed about their rights, their anonymity, and data handling as well as their right to withdraw from the study at any time, ensuring voluntary participation. Before participants could proceed in the study, informed consent was obtained. Although information about duration and a description of the survey process were provided before consenting to participate, the true purpose of the study was intentionally not disclosed to participants to avoid influencing their responses and compromising the validity of the results. This form of deception by omission (Söderlund, 2018), was deemed acceptable, as the study was not expected to cause any harm or distress to participants. Additionally, only essential

demographic data such as gender, age, income and educational attainment, was collected to minimize privacy concerns. To further respect participants' autonomy and privacy, these questions included the answer option "prefer not to say". Finally, issues of trust that might arise when researchers collect data from individuals they know personally were mitigated in this study, as all participants were entirely anonymous to the researchers (Bell et al., 2019).

3.4 Data Quality: Validity and Reliability Assessment

To ensure reliability and validity of the study, various initiatives were taken. Firstly, the choice to employ a quantitative approach enhances reliability due to its potential for replication and stability over time (Bell et al., 2019; Saunders, 2019). Furthermore, Cronbach's alpha was calculated to assess the internal reliability of multi-item measures, confirming that items within each construct addressed the same phenomenon. Results showed strong internal reliability ($a > 0.7$ for all measures; see Table 1), allowing measures to be averaged and transformed into indexes for subsequent analyses. Moreover, the questionnaire solely included closed-ended questions, an objective assessment of the collected data was enabled, eliminating the need for subjective interpretation. (Bell et al., 2019). Furthermore, the study's validity, the extent to which a measurement truly captures the construct it is designed to measure (Bell et al., 2019), was addressed. This was achieved by employing previously validated measures, which increases the study's content validity as these instruments have already undergone previous testing and confirmation to measure the intended constructs (Bell et al., 2019; Söderlund, 2018).

To further ensure the data quality, the survey incorporated a confound check, a manipulation check, and an attention check, also known as instructional manipulation check (IMC). Firstly, the confound check was included to examine whether the treatment unintentionally influenced other cause variables. Specifically, participants were asked to report how much trust they felt toward the payment solution they used. Secondly, the manipulation check was added to verify that the experimental treatment accurately represented the intended cause variable, thereby isolating the effect of the independent variable. It was incorporated after the treatment and the other measures as this posed less risk of influencing the outcome variable. Thirdly, the IMC asked participants to select the option labeled

number seven, enabling identification of inattentive participants (Söderlund, 2018). Finally, the study's validity and reliability are enhanced by the relatively large sample of 874 participants, as this provides a more representative sample of the population, allowing for greater generalization of the findings (Bell et al., 2019; Saunders et al., 2019).

4. Results

4.1 Data Processing

4.1.1 Analytical Tool

The collected data was cleaned and analyzed using the statistical program IBM SPSS Statistics Version 30.0.0.0 (172). Primarily, a series of regression analyses were conducted to test the proposed hypotheses. More specifically, multiple Hayes PROCESS models (confidence level = 95%, 5000 bootstrap samples) were employed to examine the direct and indirect effects among the independent and the dependent variables in both modules of the conceptual framework. The Hayes PROCESS macro facilitated mediation and moderation analysis. Additionally, complementary tests were conducted to examine means between groups.

The assumption of homoscedasticity was examined using Levene's test. Mixed outcomes from the test suggested potential violations, indicating the presence of heteroscedasticity in some instances. Consequently, to enhance the robustness of the findings, the Davidson-MacKinnon heteroscedasticity-consistent standard error estimator (HC3) was incorporated for the regression models. This estimator adjusts standard errors to remain valid under heteroscedastic conditions, thereby improving the accuracy of significance tests and confidence intervals (Hayes & Cai, 2007). Additionally, for the complementary independent t-tests, Welch's t-test results were interpreted to provide more reliable estimates of mean differences and their significance given indicated heteroscedasticity (Celik, 2022).

4.1.2 Data Screening & Cleaning

The initial sample size consisted of 1111 participants when exporting it from Qualtrics. To obtain a reliable sample for analysis, the collected data was cleaned. Participants who failed to complete the entire survey, did not consent to participation, and incorrectly answered the attention and manipulation checks were excluded. Two straightliners were also excluded as these were seen as low effort participants, risking to provide invalid or unreliable responses that could skew the overall results

(Reuning & Plutzer, 2020). After these adjustments, the final sample size comprised 874 participants. To check whether the results depended on how the data was cleaned, tests were also run on a larger sample (n = 1036), excluding only those who neither finished the study nor consented to participation. Critically, these results did not show notable major differences from the cleaned dataset, thus all subsequent analyses used the cleaned dataset which applied additional quality checks to ensure data reliability. Lastly, an ANOVA was done to assess the confound check. This revealed significant differences (p <0.001) across the conditions, with SNBL (M = 4.07) eliciting lower trust than the BNPL (M = 4.93) and Control group (M = 4.78), aligning with our anticipation as SNBL is a novel payment solution with limited awareness. Despite these significant differences, subsequent analyses were performed as planned. This was primarily motivated by our study's theoretical focus on other variables. Moreover, this approach reflects real-world consumer experience, where trust naturally varies across payment solutions. Controlling for it would imply a more complex model and expand the scope of this study.

4.1.3 Recoding of Variables

Before proceeding with hypothesis testing, several variables required recoding. Firstly, the reliability of all multi-item measures representing each construct was assessed using Cronbach's alpha. As reported in Table 1, all constructs demonstrated Cronbach's alpha values above 0.7, allowing them to be aggregated into indexes (Bell et al., 2019). These items were then averaged to create a single index score for each construct. Next, the condition variable indicating which group each respondent belonged to was recorded as a string variable when exported from Qualtrics, making it incompatible with certain statistical analyses. Therefore, this string variable was recoded into a numeric variable so that 0 = Debit Card (control group), 1 = SNBL, and 2 = BNPL. This allowed the payment solution variable to be treated as multicategorical, using Debit Card as the reference. This coding was consistent in all subsequent tests except when explicitly stating that the control group has been excluded. For those cases, BNPL was coded as 0 and SNBL as 1.

4.2 Descriptive Statistics

The final total sample comprised 874 participants. Out of these, 55.8% identified as women (*n* = 488), 43.8% as men (*n* = 383), and 0.3% as other* (*n* = 3). The age range was between 17 and 87 years (*M* = 48). To assess the comparability between groups, descriptive variables were analyzed to examine whether significant differences existed between the conditions. No significant differences were revealed, thereby enhancing confidence in the subsequent interpretation of the experimental manipulation's effects. Table 2 provides a summary of this comparison. (See Appendix A for complete table of descriptives)

Table 2: Comparison of Sample

	Total	**Control**	**SNBL**	**BNPL**	**p-value**
n	871*	280	283	308	
Women % (n)	55.8% (488)	32.6%(159)	30.9% (151)	36.5% (178)	0.529
Men % (n)	43.8% (383)	31.6% (121)	34.5% (132)	33.9% (130)	
Age, mean	48	47	49	48	0.402
IP, mean	2.57	2.52	2.64	2.56	0.633
USO, mean	4.96	4.97	4.97	4.95	0.955
HSO, mean	2.69	2.58	2.66	2.82	0.155

**Given limited number of participants identifying as "other" (n=3), this group was excluded from the comparative analyses between the experimental conditions.*

4.3 Hypothesis Testing

4.3.1 Module 1

4.3.1.1 Payment Solutions' Effect on IBB via Mediators POP and UTB

To examine the effect of payment solutions on IBB and to investigate the potential mediating roles of UTB and POP in this relationship, a mediation analysis was conducted using Hayes PROCESS Model 4. Examining the relationship between payment solutions and IBB, the initial analysis suggested an overall p-value of 0.0686. This implies that there is no statistically significant total effect of either

SNBL or BNPL (compared to Debit Card) on IBB as a whole, when not accounting for the mediators. Examining the individual effects, neither SNBL (b = 0.1286; p = 0.4302) nor BNPL (b = -0.2158; p = 0.1541) were significant. Given that the overall p-value was close to the conventional significance level of 0.05, it was decided to run more focused investigation excluding the control group. Focusing specifically on SNBL and BNPL, an independent t-test revealed a significant difference in IBB (t(567.187) = -2.276; p = 0.012). SNBL users reported higher IBB (M = 2.4134; SD = 1.94524) than BNPL users (M = 2.0690; SD =1.73629), though the effect size was small (Cohen's d = 0.1873). This aligns with findings obtained from the behavioral observation measure which demonstrated that participants in the SNBL condition had a higher average number (M = 1.50) of products in their shopping carts compared to BNPL participants (M = 1.31). Although a significant difference was obtained from the independent t-test, the effect contradicted hypothesized direction. Thus, H1 is not supported.

H1: BNPL leads to higher levels of Impulsive Buying Behavior compared to SNBL.	**Not Supported**

Thereafter, the mediating effect of UTB was determined. The findings revealed no statistically significant indirect effect of SNBL on IBB through UTB (indirect effect = 0.0193; CI [-0.2049, 0.2413]), as its 95% confidence interval contained zero. Likewise, the indirect effect of BNPL on IBB through UTB was also not significant (indirect effect = -0.1306; CI [-0.3569, 0.0823]), with its confidence interval also including zero. Given these non-significant indirect effects, it is concluded that UTB did not significantly mediate the relationship between payment solution and IBB. Thus, H2 is not supported. Moreover, neither SNBL (b = 0.0265; p = 0.8639) nor BNPL (b = -0.1792; p = 0.2332) significantly predicted UTB (compared to the control group). To investigate this further an independent t-test was conducted (excluding the control group), indicating no significant difference in UTB (t(590) = -1.392; p = 0.082) between BNPL and SNBL. Therefore, H2a is not supported. Lastly, when examining H2b, UTB was found to have a strong and highly significant positive effect on IBB (b = 0.7290; p < 0.0001). Thus, H2b is supported.

H2: The effect of Payment Solutions on Impulsive Buying Behavior is mediated by Urge to Buy.	**Not Supported**
H2a: BNPL leads to higher levels of Urge to Buy compared to SNBL.	**Not Supported**
H2b: Higher Urge to Buy increases Impulsive Buying Behavior.	**Supported**

Moreover, the mediating effect of POP was determined by examining the indirect effects of payment solution on IBB through POP. The results revealed significant indirect effects for both SNBL (indirect effect = 0.0351; CI [0.0081, 0.0700]) and BNPL (indirect effect = 0.0478; CI [0.0161, 0.0911]) on IBB through POP, as the 95% bootstrap confidence intervals did not include zero. This indicates that POP does act as a statistically significant mediator between payment solutions and IBB. Thus H3 is supported. Further, both SNBL (b = 0.2801; p = 0.0068) and BNPL (b = 0.3814; p = 0.0005) significantly predicted POP. The coefficients indicated that BNPL was unexpectedly associated with higher POP compared to SNBL. Thus, H3a is not supported. Lastly, while POP demonstrated a significant effect on IBB (b = 0.1252; p = 0.0004), the direction was also unexpected. Higher POP was associated with higher IBB. Thus, H3b is also not supported.

H3: The effect of Payment Solutions on Impulsive Buying Behavior is mediated by Pain of Paying.	**Supported**
H3a: BNPL leads to lower levels of perceived Pain of Paying compared to SNBL.	**Not Supported**
H3b: Lower levels of Pain of Paying increases the level of Impulsive Buying Behavior.	**Not Supported**

4.3.1.2 Moderating Effects

To examine the moderating effects on the direct relationship between payment solution and IBB, two different Hayes PROCESS models were employed. Hayes Model 1 was utilized to assess the moderating effect of IP, treating it as a single moderator. When interpreting the effect of shopping orientation, Model 2 was applied as USO and HSO were handled as two separate moderators.

Firstly, Hayes Model 1 revealed that IP did not significantly moderate the effect of payment solution on IBB, evidenced by a non-significant p-value of 0.7735. Examining the individual interaction terms (SNBL×IP and BNPL×IP) it was revealed that neither interaction terms reached statistical significance. Thus H4 is not supported. Nevertheless, IP emerged as a strong and significant direct predictor of IBB ($p < 0.0001$; $b = 0.4726$), suggesting that individuals with higher levels of IP tend to exhibit higher levels of IBB, regardless of payment solution used.

H4: The effect of Payment Solution on Impulsive Buying Behavior is moderated by Impulsiveness Propensity, such that the positive effect is stronger for individuals exhibiting higher levels of Impulsiveness Propensity.	**Not Supported**

Next, from employing Hayes Model 2 it was disclosed that neither HSO nor USO significantly moderate the effect of payment solution on IBB, demonstrated by non-significant interaction omnibus terms for both HSO ($p = 0.5793$) and USO ($p = 0.5797$). Examining the individual interaction terms (SNBL×HSO, BNPL×HSO, SNBL×USO and BNPL×USO) it was revealed that none of the interaction terms between Payment Solutions and HSO and USO reached statistical significance. Thus H5 is not supported. However, HSO appeared as a significant predictor of IBB ($b = 0.4610$; $p < 0.0001$) suggesting that individuals with a stronger HSO tend to exhibit higher levels of IBB, regardless of payment solution used. USO however, did not significantly predict IBB directly ($b = -0.0044$; $p = 0.9620$).

H5: The effect of Payment Solution on Impulsive Buying Behavior is moderated by Shopping Orientation, such that the positive effect is stronger for Hedonic Shoppers than for Utilitarian Shoppers.	**Not Supported**

4.3.2 Module 2

4.3.2.1 Moderating Role of Payment Solution on the Mediated Effect of Impulsive Buying Behavior on Return Intentions via Post-Purchase Regret

To test the hypotheses in Module 2, a moderated mediation analysis was conducted using Hayes PROCESS Model 7. In doing so, the dependent variable was changed to RI, using IBB as the independent variable, payment solution as a moderator and PPR as a mediator.

Examining the results from Hayes Model 7 it was evident that the direct effect of IBB on RI, after accounting for PPR, was not statistically significant (p = 0.0649). However, to examine the effect of IBB on RI, without accounting for the mediating role of PPR, a complementary linear regression was run. This was done to specifically address H6 as the total effect is not presented in Hayes Model 7. When examining the direct relationship between IBB and RI, the linear regression revealed a significant result (b = 0.167; p < 0.001). In doing this, plots were investigated showing no evidence of heteroscedasticity for these variables specifically, increasing confidence in this significant finding. This implies that without considering PPR, higher levels of IBB directly lead to a statistically significant increase in RI. Thus, H6 is supported.

H6: Higher levels of Impulsive Buying Behavior leads to higher levels of Return Intention.	**Supported**

Furthermore, a significant and positive relationship was found between IBB and PPR (b = 0.1086; p = 0.0241), indicating that higher levels of IBB are associated with higher levels of PPR. Thus, H7a is supported. The analysis also indicated that PPR significantly and positively predicts RI (b = 0.6983; p < 0.0001), providing empirical support for H7b. Given that payment solutions were hypothesized to moderate the relationship between IBB and PPR, the conditional indirect effects of IBB on RI through PPR were examined at different levels of the moderator. The indirect effect of IBB on RI through PPR was significant across all payment solutions: Control group (indirect effect = 0.0755; CI [0.0120, 0.1492]), SNBL group (indirect effect = 0.0900; CI [0.0221, 0.1638]), and BNPL group

(indirect effect = 0.1958; CI [0.1182, 0.2838]). This implies that the effect of IBB on RI is mediated by PPR. Given that the direct effect of IBB on RI was not significant in the mediation model, these results are consistent with full mediation. As evident from the indirect effects, the mediating effect was substantially stronger for the BNPL group, indicating that these participants experienced a stronger chain reaction compared to the other conditions. Concludingly, as the results revealed significant conditional indirect effects of IBB on RI through PPR, and the strength of this indirect path varied across payment solutions, H7 is supported.

H7: The effect of Impulsive Buying Behavior on Return Intention is mediated by Post-Purchase Regret, and the magnitude of this indirect effect varies depending on the payment solution used.	**Supported**
H7a: Higher levels of Impulsive Buying Behavior increases the level of Post-Purchase Regret.	**Supported**
H7b: Higher levels of Post-Purchase Regret leads to higher levels of Return Intention.	**Supported**

When considering the moderating effects of payment solution on the relationship between IBB and PPR, the overall interaction term yielded a p-value of 0.0513. Although this does not meet the conventional significance threshold ($p < 0.05$), it is sometimes described in the literature as "marginally significant", indicating a result that approaches but does not fully reach statistical significance. This result suggests that the effect of IBB on PPR varies depending on the payment solution used. Examining the conditional effects of IBB on PPR for each payment solution reveals that the positive relationship between IBB and PPR was most substantial for BNPL ($b = 0.2816$; $p < 0.0001$), followed by SNBL ($b = 0.1294$; $p = 0.0130$) and Debit Card ($b = 0.1086$; $p = 0.0241$). This aligns with H8, which predicted that the positive effect of IBB on PPR would be stronger for individuals paying with BNPL compared to SNBL. Concludingly, while the overall interaction term for payment solution moderating the effect of IBB on PPR yielded only marginal significance, the pattern of conditional effects aligns with H8's prediction. Thus, H8 is marginally supported.

H8: The effect of Impulsive Buying Behavior on Post-Purchase Regret is moderated by Payment Solution, such that the positive effect is stronger for individuals paying with BNPL (vs. SNBL). **Marginally Supported**

4.3.3 Summary of Hypothesis Testing

Table 3: Summary of Hypotheses Testing

Hypothesis	Description	Outcome
Module 1		
H1	BNPL leads to higher levels of Impulsive Buying Behavior compared to SNBL.	**Not Supported**
H2	The effect of Payment Solutions on Impulsive Buying Behavior is mediated by Urge to Buy.	**Not Supported**
H2a	BNPL leads to higher levels of Urge to Buy compared to SNBL.	**Not Supported**
H2b	Higher Urge to Buy increases Impulsive Buying Behavior.	**Supported**
H3	The effect of Payment Solutions on Impulsive Buying Behavior is mediated by Pain of Paying.	**Supported**
H3a	BNPL leads to lower levels of perceived Pain of Paying compared to SNBL.	**Not Supported**
H3b	Lower levels of Pain of Paying increases the level of Impulsive Buying Behavior.	**Not Supported**
H4	The effect of Payment Solution on Impulsive Buying Behavior is moderated by Impulsiveness Propensity, such that the positive effect is stronger for individuals exhibiting higher levels of Impulsiveness Propensity.	**Not Supported**
H5	The effect of Payment Solution on Impulsive Buying Behavior is moderated by Shopping Orientation, such that the positive effect is stronger for Hedonic Shoppers than for Utilitarian Shoppers.	**Not Supported**
Module 2		
H6	Higher levels of Impulsive Buying Behavior leads to higher levels of Return Intention.	**Supported**
H7	The effect of Impulsive Buying Behavior on Return Intention is mediated by Post-Purchase Regret, and the magnitude of this indirect effect varies depending on the Payment Solution used.	**Supported**
H7a	Higher levels of Impulsive Buying Behavior increases the level of Post-Purchase Regret.	**Supported**
H7b	Higher levels of Post-Purchase Regret leads to higher levels of Return Intention.	**Supported**
H8	The effect of Impulsive Buying Behavior on Post-Purchase Regret is moderated by Payment Solution, such that the positive effect is stronger for individuals paying with BNPL (vs. SNBL)	**Marginally Supported**

5. Analysis & Discussion

5.1 Module 1

To address the first research question concerning the differential influence of SNBL and BNPL on IBB and the underlying mechanisms, this section discusses Model 1 and its related hypotheses. Contrary to expectations, our results indicated that SNBL was associated with slightly higher IBB than BNPL. Furthermore, the hypothesized mediating roles and effects of UTB and POP were not supported, and IP and shopping orientations did not moderate the payment solution-IBB relationship. The following sections will elaborate on these findings.

5.1.1 The Differential Influence of SNBL and BNPL on Impulsive Buying Behavior

H1 posited that BNPL would generate higher levels of IBB compared to SNBL. The hypothesis was based on theoretical underpinnings of temporal decoupling and the appeal of immediate gratification inherent in BNPL models (Prelec & Lowenstein, 1998; Maesen & Ang, 2024; Polman et al., 2018). However, our findings revealed a counterintuitive outcome: participants subjected to SNBL treatment reported statistically significantly higher levels of IBB (M = 2.41) than their BNPL counterparts (M = 2.07), although the effect size was small (Cohen's d = 0.1873). This finding was reinforced by the behavioral observation measure. Despite this statistically significant difference between the payment solutions, it is noteworthy that the overall level of IBB was modest in both self-reported measures and the behavioral observation. This may be attributed to the controlled experimental setting, which might have toned down IBB by lacking some of the emotional and situational cues inherent in real-life shopping. Furthermore, the feeling of being observed in a research setting can heighten participants' awareness of social norms, potentially leading to social desirability bias (Krumpal, 2013; White et al., 2019). In the context of this experiment, participants might have felt a heightened awareness of presenting themselves as rational shoppers, thus mitigating impulsive tendencies across all conditions.

Considering the overall modest levels of IBB, the counterintuitive finding that SNBL was associated with higher IBB than BNPL warrants closer examination. Several potential reasons could explain this unexpected result. A key contributor to the BNPL's group behavior could be the extensive recent Swedish media coverage highlighting its negative consequences, particularly over-indebtedness (Svahn, 2023). This increased awareness, potentially amplified by the experimental context and social desirability bias, might have prompted BNPL participants to exercise more caution and self-control than they normally would. Alternatively, the survey structure, incorporating a timer that delayed the forward button (see section 3.2), alongside the detailed instructions, might have interrupted the natural flow of typical online shopping experiences. This could have reduced spontaneity and speed of decision-making, thereby mitigating IBB.

In contrast, SNBL's recent introduction to Sweden might imply participants lack understanding about its implications. This unfamiliarity could have contributed to different behavior patterns in this controlled setting compared to how participants might act once (and if) the payment solution becomes more common and integrated into the broader e-commerce landscape. One explanation for the slightly higher levels of IBB within the SNBL condition could be attributed to the marginally higher IP level (M = 2.64) in that group. Another plausible explanation could be the extended consideration period it offers. As the actual purchase does not occur until the savings goal is met, adding items to the cart might have felt more like "wishlisting". This might have reduced the sense of immediate financial commitment, leading to more items being added with less deliberation and potentially evoking higher levels of IBB. This aligns with Construal Level Theory (Trope & Liberman, 2010), proposing that psychologically distant events like future purchases are processed more abstractly, making initial cart additions seem less consequential. Consequently, this might explain the higher IBB for SNBL compared to BNPL. However, in real-life SNBL usage, the flexibility to easily add or remove items in the savings plan, without immediate financial penalty, suggests this "wishlisting" might not directly translate to actual impulsive purchases. To conclude, while both BNPL and SNBL introduce elements of psychological distance, their varying impacts on IBB warrant further research.

5.1.2 The Role of Urge to Buy and Consumer Characteristics

Drawing on the S-O-R model (Paul et al., 2022) and the understanding that payment solutions can act as consumption cues (Feinberg, 1986), it was hypothesized (H2) that the effect of Payment Solutions on IBB would be mediated by UTB. Specifically, H2a posited that BNPL as a more established spending cue in Sweden with higher user adoption and associations with immediate gratification, would generate higher UTB compared to the novel SNBL model. Moreover, H2b predicted that higher UTB would in turn increase IBB, as it has been established as a crucial antecedent in prior research (Rook & Hoch, 1985; Chen et al., 2018). While the results supported H2b, demonstrating UTB as a significant and strong predictor of IBB, the findings did not support the overall mediation hypothesis (H2) or the prediction that BNPL would generate stronger UTB (H2a).

Several potential reasons could explain these non-supported findings. One vital aspect lies in the nature of the stimuli within this study's experimental context. Although the payment solution was presented early in the experimental flow and subsequently reinforced at checkout, its impact as primary stimulus for UTB might have been less pronounced than anticipated. Notably, early research on credit cards as spending stimuli often involved the presence of physical credit cards or logos as cues (Feinberg, 1986). In contrast, this study utilized descriptive representations of payment solutions to avoid potential influence of brand attitudes. The difference in tangibility between these descriptive and physical payment cues could account for the weaker effect on UTB in this study compared to prior work. Literature on POP (Prelec & Loewenstein, 1998) suggests that more tangible forms of payment increase the psychological cost of spending, potentially making physical credit cards a more salient spending cue than a text description. Instead, products displayed in the fictional webshop likely served as the primary stimuli triggering UTB, potentially masking any subtle differences in UTB evoked by the payment solutions, a finding supported by contemporary research from Bakar et al. (2025). Additionally, the broad yet shallow product assortment likely limited overall UTB due to weak preference resonance.

Regarding consumer characteristics, the S-O-R model highlights how traits such as IP and shopping orientations impact internal states, thus influencing the relationship between stimuli and responses. Hence, it was hypothesized that these traits would moderate the relationship between Payment Solution and IBB. Notably, the sample exhibited a higher mean for USO (M = 4.96) compared to HSO (M = 2.69). This indicates a tendency towards utilitarian shopping in our sample, where rational decision-making outweighs impulsive desires (Scarpi, 2020), suggesting lower overall susceptibility to UTB and consequently, potentially lower IBB. Thus, the predominance of USO in our sample made it harder to detect the effect predicted in H5, which posited a stronger influence of Payment Solutions on IBB specifically for individuals with strong HSO. Similarly, the relatively low mean for IP (M = 2.57) may have hindered observing its moderating effect on the Payment Solution-IBB relationship, thus not finding support for H4. Finally, while not acting as moderators, IP and HSO emerged as significant predictors of IBB, indicating that higher levels of these traits were associated with higher levels of IBB regardless of Payment Solution, aligning with previous studies (Rook & Fisher, 1995).

5.1.3 Examining Pain of Paying as a Mediator

H3 with sub-hypotheses proposed that the effect of payment solution on IBB is mediated by POP, predicting less POP for BNPL users compared to their SNBL counterparts, and that lower POP increases IBB. This was based on earlier studies' demonstration of payment solutions offering varying levels of POP, and that different levels of POP influence individuals' purchase intentions (Feinberg, 1986; Raghubir & Srivastava, 2008; Reshadi & Fitzgerald, 2023). Although our result supports the mediating role of POP in the payment solution-IBB relationship, its direction is surprising. Contrary to prior research indicating that greater POP reduces purchase likelihood (Prelec & Loewenstein, 1998), this study suggests the opposite: higher POP is associated with more IBB. This contradiction could be explained by the timing of POP measurement. As participants reported their POP levels after they had already completed their shopping and indicated their level of IBB, a process of mental justification might have influenced their responses. Although the overall level of IBB was modest, participants that engaged in more IBB might have reported higher sense of POP as a way to mentally

rationalize those decisions, especially if they were leaning more towards USO. This emphasis on pain could be a subconscious way to validate their actions retrospectively and maintain a cost-aware self-image, even after acting impulsively. This aligns with the concept of cognitive dissonance; humans are motivated to reduce discomfort from inconsistent cognitions (Festinger, 1957). Therefore, higher reported POP could be a result of IBB, rather than a cause. Furthermore, another explanation could be that participants reported higher POP based on cognitive understanding of how spending should feel, rather than from genuine POP. The experiments' lack of real financial obligations likely lowered actual POP and increased IBB. However, to resolve potential cognitive dissonance from the mismatch between expected and actual spending feelings, participants may have reported higher POP, leading to the reported (but not genuinely felt) POP and IBB correlation.

Moreover, although our results suggest that both SNBL and BNPL significantly predict POP, it was found that BNPL leads to more POP compared to SNBL. This was surprising as it was hypothesized that SNBL would entail more pain than BNPL mainly due to low payment transparency and temporal decoupling mechanisms inherent in BNPL (Rick, 2018). A potential explanation to this unexpected result is because SNBL, despite its transparency, offers a greater sense of control over the transactions being made (Zellermayer, 1996). In the experiment, participants using SNBL were clearly informed that they could withdraw their money at any time and save entirely on their own terms, deciding both the amount and duration. This direct control might mitigate the perceived POP more effectively than the future obligations of BNPL, leading to higher POP for BNPL compared to SNBL. Another reason for the unexpected result could be Zellermayer's (1996) point of payment timing, emphasizing that paying for already enjoyed goods is more painful than paying for future consumption. While our initial reasoning might have underestimated the impact of this pre-payment aspect in SNBL, the results suggest it could be a significant factor in this context. Notably, given the novelty of SNBL and these unexpected findings regarding POP, further research is warranted to completely understand its psychological and behavioral implications.

5.2 Module 2

To investigate the second research question regarding the differential influence of SNBL and BNPL on the relationship between IBB and post-purchase outcomes, Module 2 with related hypotheses are discussed. In brief, our findings indicate that higher levels of IBB significantly increased RI, a relationship mediated by PPR. The mediating effect was more pronounced among BNPL users. Furthermore, it was marginally supported that BNPL amplified the positive relationship between IBB and PPR compared to SNBL. The subsequent sections delve deeper into these results.

5.2.1 The Differential Influences of SNBL and BNPL on Post-Purchase Outcomes Following Impulsive Buying Behavior

H6 posited that higher levels of IBB would generate higher levels of RI. This hypothesis was based on prior research demonstrating that the inherent lack of forethought and deliberation characterizing IBB can result in negative post-purchase evaluations, subsequently leading to a desire for returns (Lim et al., 2017; Beatty & Elizabeth Ferrell, 1998). Following IBB, reconsideration and lack of justification may increase the desire to correct the perceived mistake of buying impulsively, thus increasing the likelihood of return. The linear regression analysis revealed a statistically significant positive relationship between IBB and RI, a finding that echoes prior research, thus supporting H6.

Interestingly, when PPR was accounted for as mediator in the moderated mediation analysis, the effect of IBB on RI was no longer significant (p = 0.0649). This suggests that the influence of IBB on RI primarily operates indirectly through PPR, echoing previous studies (Lim et al., 2017; Barta et al., 2023). Specifically, while acts of IBB bypasses rational thought, post-purchase periods allow for reflection, during which second thoughts about the unreasoned purchase can emerge. This subsequent regret catalyzes the formation of RI. Moreover, the moderated mediation analysis revealed that the indirect effect of IBB on RI through PPR was significant across all payment solutions. Notably, the magnitude of this indirect effect varied: BNPL users experienced a more pronounced chain reaction compared to their SNBL counterparts. Thus, the effect of IBB on RI is mediated by PPR, and the

magnitude of this effect varies depending on the payment solution used, supporting H7. Subsequently, the sub-hypotheses H7a and H7b also received empirical support, evidenced by the significant positive relationship for both the IBB-PPR relationship, and the PPR-RI relationship.

The aforementioned stronger chain reaction for BNPL directly relates to H8's hypothesized moderating effect of Payment Solution on the IBB-PPR relationship. Although this moderation received marginal statistical support ($p = 0.0513$), prior research in the field could further substantiate this finding (Burg & Keil, 2023). Notably, the stronger effect observed for BNPL occurred despite lower overall levels of IBB within the BNPL group compared to their SNBL counterparts. This suggests that although BNPL users in this study might engage in fewer impulsive purchases, those purchases tend to evoke stronger PPR. The temporal decoupling of payment inherent in BNPL models (Polman et al., 2018) likely contributes to this, as initial absence of immediate financial consequence might reduce deliberation and lead to more thoughtless purchases. Consequently, regret intensifies for BNPL users. In contrast, SNBL's inherently forced pause during the savings period facilitates deliberation, thus dampening PPR. Subsequently, this PPR then leads to RI.

6. Conclusion

The purpose of this study was to bring attention to SNBL as an emerging payment solution, and investigate its underlying psychological mechanisms. Moreover, we sought to explore how SNBL compares to the popular yet increasingly criticized BNPL model in terms of consumer behavior. By investigating their distinct connections to IBB and subsequent post-purchase outcomes, such as PPR and RI, we aimed to better understand the broader implications of these payment solutions. From these objectives, the two following research questions were formulated:

- *How do SNBL and BNPL differentially influence consumers' impulsive buying behavior through underlying mechanisms?*
- *How do SNBL and BNPL differentially influence the relationship between impulsive buying behavior and post-purchase outcomes?*

To explore these, several hypotheses were formulated, and the conceptual model consisting of two separate modules was developed. Concludingly, this study discovered unexpected patterns in how SNBL and BNPL influence IBB. Contrary to initial expectations, SNBL was associated with higher IBB than BNPL. This unexpected outcome may be attributed to SNBL's "wishlisting" structure, the novelty of the concept prompting enthusiasm, or social desirability bias causing participants to underreport impulsivity linked to BNPL. Moreover, although UTB did not mediate the payment solution-IBB relationship, UTB emerged as a strong predictor of IBB. In contrast, POP was found to mediate the relationship, albeit in an unexpected direction: higher levels of POP were associated with increased IBB, possibly explained by cognitive dissonance or mental justification. Additionally, BNPL surprisingly evoked greater POP than SNBL, likely due to SNBL's greater control over the purchase process and its payment-before-consumption sequence, thus lowering POP. This sense of control and immediate payment may outweigh the aspects of BNPL, such as deferred payment and low transparency, that typically reduce POP. Finally, in terms of post-purchase behavior, the study revealed that SNBL resulted in less PPR and reduced RI compared to BNPL. This is likely due to the built-in deliberation period in SNBL, fostering greater purchase certainty. The following sections will delve

into the broader implications of our findings, highlighting their relevance for both theory and practice. Subsequently, we will address the limitations of this study and suggest directions for future research to further explore the nuanced dynamics of payment solutions and their impact on consumer behavior.

6.1 Theoretical Implications

This study provides various valuable and novel insights to the literature on consumer behavior and payment solutions. Notably, it is among the first to empirically examine SNBL as a standalone payment solution and to compare its behavioral effects to those of BNPL. As such, we offer unique insights and theoretical contributions to an unexplored area of research.

Firstly, this study contributes to theory concerning payment solutions and how they can influence spending behavior and IBB. Prior research has demonstrated that credit cards trigger spending more than cash (e.g., Hirschman 1979; Raghubir & Srivastava, 2008; Burg & Keil, 2023). Building on the similarities with credit cards, we hypothesized that BNPL's temporal decoupling and immediate gratification would generate higher IBB compared to SNBL. However, our study revealed a counterintuitive result, prompting a deeper exploration of the underlying mechanisms. Specifically, the extended consideration period inherent in SNBL seems to increase the psychological distance and abstractness regarding the purchase (Trope & Liberman, 2010), potentially explaining the observed higher levels of IBB. Nevertheless, the adaptability in real-life SNBL usage might mitigate this initial IBB, and consequently, this calls for future research, especially in the context of how SNBL and IBB interact over longer time spans. Furthermore, this study contributes to the UTB literature by highlighting that purely descriptive representations of payment solutions may be weaker consumption stimuli than more visual cues, such as logos of established payment providers or physical payment cues. Additionally, payment solutions may not function as strong stimuli on their own, with product features potentially playing a more dominant role in influencing consumer behavior.

Secondly, building on the findings regarding the unexpected lower POP associated with SNBL compared to BNPL, this study underscores the critical role of how and when to measure POP. While the perceived POP might be considered across various stages of the buying journey (Sheehan & Van Ittersum, 2018), the intensity of this pain will likely differ significantly depending on the timing within the journey. Our findings suggest that assessing POP solely based on the point of payment versus the point of purchase may not capture the entirety. For instance, measuring POP during a BNPL purchase (but before payment) likely shows modest levels of pain, consistent with the temporal decoupling effect (Rick, 2018). However, measuring POP during BNPL payment (post-purchase), could reveal higher pain, aligning with Zellermayer's (1996) initial conceptualization of POP as the discomfort of "parting with money". Conversely, SNBL might evoke more pain during the saving phase than at acquisition, where pre-saved funds could be perceived as "free money". This suggests that theoretical models must account for the possibility of POP shifting throughout the consumer journey as a consequence of different payment solutions' inherent structures concerning transparency, temporal decoupling, and perceived control.

Moving on, several valuable theoretical contributions can also be drawn from findings in Module 2. Firstly, the positive relationship between IBB and RI is supported and congruent with prior research (Park & Choi, 2013; Lim et al., 2017). This reinforces the idea that characteristics of IBB, with its limited deliberation, makes these purchases more vulnerable to the desire of return. Secondly, this study contributes to the current literature by demonstrating the mediating effect of PPR in the relationship between IBB and RI. Although this relationship has been discussed in prior studies, this study contributes by establishing a statistically significant link between the three constructs. This indicates that IBB paves the way for PPR, as deliberate decision-making tends to be bypassed in unplanned purchases, ultimately leading to RI as a way to reverse the perceived poor decision.

Finally, our findings contribute to current theory through the conducted moderated mediation analysis. From this, it was revealed that PPR functions as a mediator regardless of payment solution used. However, the magnitude of PPR's mediating effect, and the direct relationship between PPR and

IBB, are moderated by the payment solution. Evidently, payment solution influences the mediation path such that BNPL users experience a greater chain reaction from IBB to RI, through PPR compared to SNBL users. Additionally, although marginally significant, it was denoted that payment solutions moderate the positive relationship between IBB and PPR, intensifying the feelings of regret for BNPL users compared to SNBL users. Concludingly, although further empirical studies are required to fortify these findings, they add to the current literature in these fields and underscore the complex interplay between IBB, PPR, and payment solutions in shaping RI.

6.2 Managerial Implications

Our findings provide several valuable insights for both regulators and practitioners. Given the rapid adoption and subsequent concerns faced by BNPL services, regulators should proactively examine emerging payment solutions like SNBL before widespread adoption to avoid potentially repeating past oversights in consumer protection. This study has positioned SNBL as a contrasting payment solution to the prevalent BNPL model to examine its relevance in addressing common criticism pointed towards BNPL. Notably, the results indicated slightly higher IBB among participants in the SNBL condition compared to BNPL. This unexpected finding warrants further consideration in real-word applications, although potentially explained by the novelty of SNBL and a "wishlisting effect". Turning the perspective to retailers, our findings demonstrate how IBB significantly increases RI through PPR. While this chain reaction was present for individuals in all conditions, it was more pronounced for BNPL users compared to SNBL users. This suggests that SNBL shopping generates statistically significantly lower levels of RI, compared to the popular BNPL model. Given the established link between RI and actual product returns, this indicates that SNBL could in turn also reduce returns. Consequently, this would directly translate to lower return processing costs, positively impacting retailers' bottom lines and contributing to more sustainable business practices.

As aforementioned, the SNBL model involves consumers saving towards a desired purchase through continuous deposits. The digital format enables gamification and notifications that aid consumers in reaching their goals, for which they are then incentivized. This inherent process is anticipated to

facilitate multiple touchpoints for retailers throughout the customer journey, from initial goal setting to final purchase, allowing for enhanced customer data collection. With this information, the retailer could personalize the customer experience with tailored offerings and product recommendations, enabling more targeted communications based on saving goals and progres. Ultimately, this could contribute to increased conversion rates by encouraging customers throughout their saving journey. This consistent and personalized engagement may in turn foster strengthened customer relationships, increasing customer loyalty and repeat purchases; aspects that are ever more important in a retailing landscape with declining consumer loyalty (Villa, 2023). Additionally, by monitoring SNBL users' savings goals in terms of product and time horizon, this enhanced data could provide valuable foresight into potential sales volumes for specific products, allowing for more accurate demand forecasting and enabling proactive adjustments to inventory levels to avoid stockouts and minimize overstocking. Hence, through SNBL, retailers could also gain valuable insights to estimate sales volumes and optimize inventory management.

Finally, retailers should seriously consider implementing SNBL to diversify their payment offering for two main reasons. Firstly, a common reason for cart abandonment is the absence of a preferred payment solution for a specific purchase, where factors like product type, price, and the perceived likelihood of return are considered (Svea Bank, 2025). By extending the range of available options, this may help mitigate this issue and enhance overall customer satisfaction. Secondly, retailers could strategically integrate SNBL as a complementary payment solution to cater to segments of consumers seeking a more financially responsible approach to online shopping. By offering a payment solution that encourages saving before purchasing, retailers would actively contribute to more deliberate shopping habits, potentially reducing the risk of real-life IBB and financial strain for consumers, thereby fostering greater financial well-being.

6.3 Limitations & Future Research

Several limitations of this study warrant acknowledgement. One limitation may stem from the delimitation of using a consumer panel for survey distribution. A known concern with consumer panels is the presence of so-called "professional panelists". This can manifest as a tendency for participants to rush through surveys, resulting in less thoughtful and engaged responses, compromising data quality. Additionally, participating in numerous surveys can lead to survey fatigue, potentially impacting attentiveness and accuracy of answers (Hays et al., 2015). To address this and ensure higher data quality, the manipulation and attention checks were employed as key strategies. Furthermore, while the study aimed for a sample representative of the Swedish population, the desire for broad representativeness might have come at the cost of depth and specificity of findings. Therefore, future research could explore this study's research questions within specific customer segments to gain more targeted insights.

The experimental design is also subject to limitations. Firstly, the delimitation of a fictional webshop, rather than analysis of customer data from a real-world retailer, potentially compromises ecological validity of the findings. This artificial setting might not fully capture the nuances and complexities of actual online shopping decisions, where real financial consequences influence consumers' decision-making and behavior. Additionally, the broad but shallow product assortment, intended to cater to the diverse sample, might have reduced likelihood of IBB driven by immediate personal appeal. This likely contributed to the modest IBB levels, potentially obscuring statistically significant differences in nuances between the conditions. Future research could explore the contexts in which SNBL is most appropriate, regarding product types and price levels. Furthermore, the use of a self-completion survey introduces risks of dishonesty and various biases, including the social desirability bias discussed in section 5.1.1. Also, while the measurement of RI is considered a powerful proxy for future behavior, it does not perfectly reflect actual return behavior. Future research could thereby empirically analyze real-life data obtained from retailers to measure actual impulsivity and return behavior in relation to different payment solutions, to further establish the bottom-line effects of retailers.

Moreover, examining SNBL before it has become fully established in Sweden introduces another potential limitation. This unfamiliarity could have influenced participants' behavior and perceptions in ways that might differ once (and if) SNBL becomes a more common payment solution. Furthermore, the inherent nature of SNBL, with its extended payment period compared to other payment solutions, suggests that its effects on consumer behavior are best measured through longitudinal studies, prompting future research. Such long-term research could also shed light on how SNBL, with its engaging features, impacts customer loyalty over time. Future research could focus on exploring different formats of SNBL (e.g., varying incentives or terms) to understand which versions are most appealing and effective in driving adoption and influencing consumer behavior across diverse geographical markets.

Finally, considering that SNBL generally is provided through third parties, our study explored the scenario where retailers act as the provider. If this format gains traction, it poses questions of how the landscape would look like where retailers essentially could become financial institutions, fundamentally reshaping their business models.

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Appendix

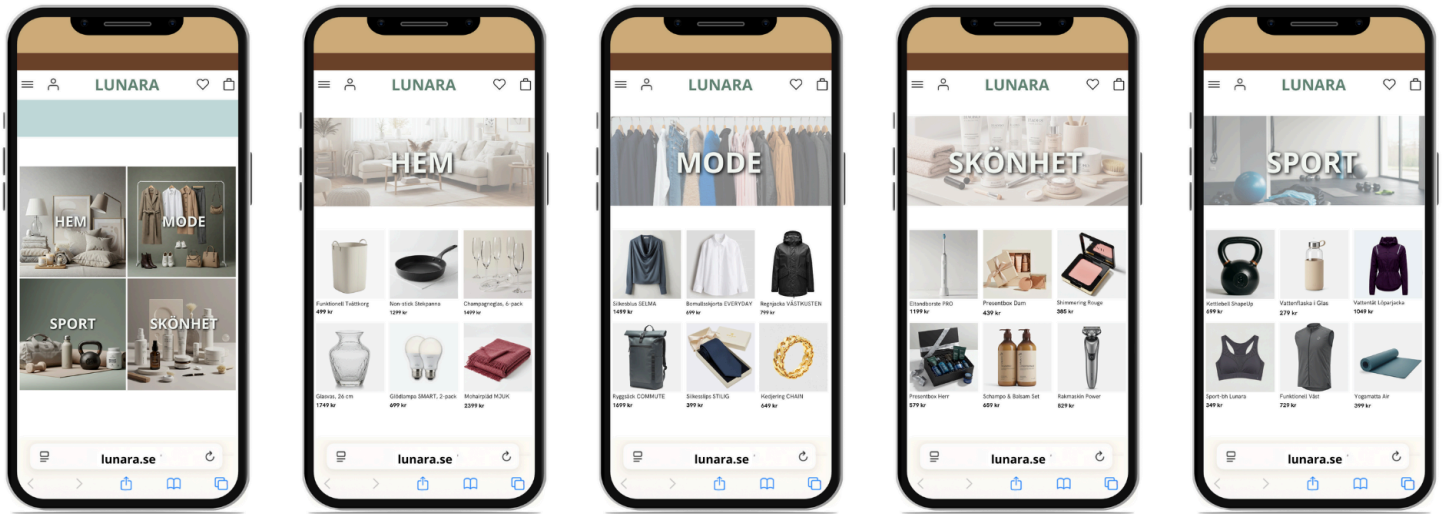
Appendix A: Complete Table of Descriptives

Gender, Age & Trait	**Total**	**Control**	**SNBL**	**BNPL**	**p-value**
n	871*	280	283	308	
Women % (n)	55.8% (488)	32.6%(159)	30.9% (151)	36.5% (178)	0.529
Men % (n)	43.8% (383)	31.6% (121)	34.5% (132)	33.9% (130)	
Age, mean	48	47	49	48	0.402
IP, mean	2.57	2.52	2.64	2.56	0.633
USO, mean	4.96	4.97	4.97	4.95	0.955
HSO, mean	2.69	2.58	2.66	2.82	0.155
Income					
0-200,000 sek	5.5%	5.9%	4.8%	5.8%	0.560
201,000-300,000 sek	8.6%	9.6%	5.9%	10.2%	
301,000-500,000 sek	25.4%	25.1%	27.8%	23.5%	
501,000-100,000 sek	34.5%	34.7%	33.3%	35.5%	
> 1,000,000 sek	10.6%	12.2%	10.7%	8.9%	
Prefer not to say	15.3%	12.5%	17.4%	16.0%	
Educational Attainment					
Compulsory school or equivalent	5.2%	3.7%	5.9%	5.8%	0.318
Upper secondary school diploma or equivalent	29.4%	28.0%	27.4%	32.4%	
Post-secondary education, not university/higher education	12.2%	14.4%	13.0%	9.6%	
Studies at university/higher education	12.9%	16.2%	12.6%	10.2%	
Degree from university/higher education	39.4%	37.3%	40.0%	41.0%	
Prefer not to say	0.8%	0.4%	1.1%	1.0%	

Appendix B: Scenarios

Control	*SNBL*	*BNPL*
Föreställ dig följande scenario: Du har länge funderat på att köpa en ny stekpanna som kostar 1299 kr. Du besöker en välkänd onlinebutik som erbjuder just denna stekpanna som du vill ha men även ett brett sortiment av andra produkter. **Ditt shoppingmål är att köpa stekpannan**, men du är även fri att utforska hela sortimentet och köpa vad du vill om något annat fångar ditt intresse. Titta noggrant på bilderna och följ din spontana instinkt, precis som du skulle göra i verkligheten. Den **betallösning** som onlinebutiken erbjuder är att betala med ditt **bankkort.**	**Föreställ dig följande scenario:** Du har länge funderat på att köpa en ny stekpanna som kostar 1299 kr. För tillfället har du inte dessa pengar men du förväntar dig att kunna betala det om 30 dagar. Du besöker en välkänd onlinebutik som erbjuder just denna stekpanna som du vill ha men även ett brett sortiment av andra produkter. **Ditt shoppingmål är att köpa stekpannan**, men du är även fri att utforska hela sortimentet och **köpa vad du vill** om något annat fångar ditt intresse. Titta noggrant på bilderna och följ din spontana instinkt, precis som du skulle göra i verkligheten. Den **betallösning** som onlinebutiken erbjuder är ***Spara Först, Köp Sen.*** **Hur fungerar "*Spara Först, Köp Sen*"?** Med "Spara Först, Köp Sen" öppnar du ett sparkonto hos onlinebutiken där kan du välja att spara pengar i förväg för framtida köp från denna onlinebutik. Du väljer själv din sparhorisont och hur stora insättningar du gör. Ditt saldo är inte låst, så du kan när som helst ta ut dina sparade pengar. När du har sparat ihop tillräckligt kan du genomföra köpet och få hem dina varor, räntefritt och utan ytterligare avgifter.	**Föreställ dig följande scenario:** Du har länge funderat på att köpa en ny stekpanna som kostar 1299 kr. För tillfället har du inte dessa pengar men du förväntar dig att kunna betala det om 30 dagar. Du besöker en välkänd onlinebutik som erbjuder just denna stekpanna som du vill ha men även ett brett sortiment av andra produkter. **Ditt shoppingmål är att köpa stekpannan**, men du är även fri att utforska hela sortimentet och köpa vad du vill om något annat fångar ditt intresse. Titta noggrant på bilderna och följ din spontana instinkt, precis som du skulle göra i verkligheten. Den **betallösning** som onlinebutiken erbjuder är ***"Betala Senare".*** **Hur fungerar "Betala Senare"?** Med "Betala Senare" kan du genomföra ditt köp idag och få hem dina varor men vänta med betalningen upp till 30 dagar, räntefritt och utan ytterligare avgifter.

Appendix C: Website and Product Pictures



Note: All photos are AI generated (see Appendix D)

Appendix D: AI Usage

This thesis has utilized artificial intelligence, adhering to the Stockholm School of Economics GenAI guidelines for thesis writing. It employed three distinct AI tools for specific purposes. The following section will elaborate on the specific ways in which AI was utilized, its impact on enhancing the thesis's quality, what risks it entails and what risk mitigation strategies were employed, as well as the insights derived from employing AI in the thesis writing process.

Firstly, Gemini was used for generating artificial product images, as well as in brainstorming names for the fictional webshop. This strategy was employed to ensure compliance with trademark and copyright regulations. Moreover, it simultaneously served the purpose of mitigating the influence of pre-existing brand biases in the experiment, thus eliminating potential confounding factors and allowing for a more controlled testing of the intended manipulation variable, namely payment solution. However, despite specific prompts, achieving the precisely desired image proved challenging. For instance, unintended elements could appear, and aesthetic inconsistencies were evident in the design. Additionally, Gemini was also used in the translation of established measurement items from English into Swedish, particularly when complexities arose in preserving the original meaning and ensuring linguistic fluency through direct translation. This strategy aimed to ensure that the translated questions conveyed the same intended meaning as the original English measurement items, thereby enhancing the validity and reliability of the collected data. However, since AI translations are not always accurate, additional discussions among us, as authors, took place to ensure the most appropriate translation.

Secondly, Grammarly was used throughout the thesis writing process to identify spelling mistakes and grammatical errors, thereby enhancing the overall quality of the study. However, as with any AI tool, there is a risk of incorrect outputs or misleading suggestions that could potentially lower the quality of the work if not carefully reviewed. To mitigate this risk, all AI-generated suggestions were evaluated critically before making any changes.

Finally, ChatGPT-4o mini was employed to enhance clarity of meaning when formulation problems were encountered. In such instances, the original sentence was copied into the AI tool, along with the prompt "How can this sentence be improved for clarity?". Importantly, recognizing the risk of sharing sensitive or identifiable data with AI tools, no confidential or personal information was included in these queries to ensure compliance with ethical principles and data protection regulations.