Empty Shelves, Divergent Choices

How Promotions and Product Type Shape Customer Stockout Reactions in Grocery Retailing

BSc Thesis in Retail Management
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Abstract

Price promotions are a double-edged sword for retailers – increasing short-term sales but also raising the likelihood that promoted items run out-of-stock. Motivated by the recent surge in promotional activity and the tendency of promoted items to run out of stock, this research paper examines how customer reactions differ between promotional and regular stockouts as well as hedonic and utilitarian products. The research investigates five customer reactions: 1) brand switch, 2) item switch, 3) store switch, 4) postponement, and 5) cancellation, previously researched by Verhoef and Sloot (2010), and applies them to a new context. Utilizing an experimental research design coupled with a quantitative approach, the results show that when a wanted item is unavailable during a promotion, customers are less likely to accept in-store substitutes and more inclined to engage in non-substitutional behavior by postponing the purchase or cancelling it altogether. Furthermore, the results also show that product type exerts an influence, where utilitarian products elicit a higher likelihood of brand switching, whereas hedonic products induce a higher likelihood of outright cancellation. Consequently, these findings underscore the importance for grocery retailers to align inventory management with promotional activities and calibrate it to the hedonic and utilitarian nature of each product.

Key Words: Customer Behavior, Out-Of-Stock (OOS) Reactions, Promotional Stockout, Stockout, Price Promotions, Grocery Retailing, Hedonic, Utilitarian, Brand Switch, Item Switch, Store Switch, Postponement, Cancellation

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1 Introduction

1.1 Background

Price promotions have become a central competitive lever in grocery retailing, shaping customers' behavior long before they enter the store. According to the Swedish Competition Authority's 2024 summary report, there is an "increased focus on promotional pricing and marketing in the grocery retail market", highlighting the critical role of promotions in surviving the increasingly competitive landscape (Swedish Competition Authority, 2024). Industry data reinforces this trend; in 2023, roughly 38.6 percent of all goods sold across Sweden's leading supermarket chains were subject to promotions (HUI Research, 2024), underscoring the sheer scale and pervasiveness of promotional campaigns in the sector.

Price promotions impact retailers and can increase stockpiling and purchase acceleration (Anderson and Fox, 2019; Van Heerde, Gupta and Wittink, 2003), whilst also being advantageous to retailers by incentivizing incremental store visits, leading to both planned and unplanned purchases (Anderson and Fox, 2019). However, even though promotions offer advantages, they are not without their drawbacks. Studies show that promoted items experience an out-of-stock (OOS) rate that is twice as high compared to non-promoted items (Corsten and Gruen, 2003). Thus, out-of-stock situations are detrimental to retailers as they not only entail a loss of sales but also potentially generate negative customer attitudes towards the retailer over time.

Despite the extensive research on customer reactions in regular stockouts, surprisingly little attention has been paid to the unique dynamics of promotional stockouts. Since the growing trend of price promotions plays a pivotal role in influencing customers' pre-shopping planning, by providing incentives that shape purchasing decisions even before entering the store (Xia and Monroe, 2009), it becomes important to investigate what impact promotional incentives have on customer behavior in out-of-stock scenarios and how they differ from regular stockouts.

Not only does the pre-purchase agenda shape how customers react when an item is unavailable, but the product's very nature also determines the in-store behavior during an OOS event. Planning to buy a utilitarian product, defined by its instrumental and functional attributes, creates a sense of immediate need, driving shoppers to find alternatives to meet their planned needs (Batra and Ahtola, 1991; Dhar and Wertenbroch, 2000). In contrast,

hedonic products require more psychological justification, since these purchases are motivated by indulgence or emotional gratification (Okada, 2005; Kivetz and Zheng, 2017). Thus, when a planned purchase of a hedonic item is OOS, customers may feel heightened disappointment and frustration, making them more prone to certain reactions.

Verhoef and Sloot (2010) classify the most common and severe customer reactions to OOS situations as two general reactional clusters: a) buying a substitute and b) not buying a substitute. The two clusters are central in understanding customers' OOS reactions as well as the implications for retailers, and are broken down further into five specific customer OOS reactions: *Brand switch, Item switch, Store switch, Postponement,* and *Cancellation,* which will be the standpoint of this research. Although there has been extensive research conducted on customers' OOS reactions, it remains unclear whether these reaction patterns hold or shift in intensity when the stockout coincides with pre-planned, promotion-driven purchases, across different product types.

For retailers, it becomes crucial to understand the nature and intensity of each of these reactions relative to the others, as each reaction carries different implications. While a substitutional reaction may not incur any direct revenue losses for the retailer, non-substitutional responses can result in direct sales losses for the retailer. (Verhoef and Sloot, 2010)

1.2 Purpose & Research Questions

The purpose of this research paper is to examine how the most common reactions to regular stockouts differ when customers are faced with promotional stockouts, as well as whether these differ across hedonic and utilitarian product types. Specifically, this study investigates the most common out-of-stock reactions: *Item switch, Brand switch, Store switch, Postponement,* and *Cancellation*. Drawing on existing literature on OOS reactions, price promotions, and customer decision-making differences between hedonic and utilitarian products, this study aims to provide insights into how stockout responses may vary with and without a promotional incentive, as well as for different product types. To empirically test these differences, an experiment is conducted in which participants are randomly assigned to one of four scenarios involving; 1) an OOS situation of a regular priced utilitarian item, 2) an OOS situation of a regular priced hedonic item, 3) an OOS situation of a utilitarian item on promotion, and 4) an OOS situation of a hedonic item on promotion.

The overarching research questions guiding this thesis are presented below as the following:

(1) How do regular versus promotional stockouts differently influence the likelihood of customers' most common out-of-stock reactions?

(2) How do utilitarian and hedonic products differently influence the likelihood of customers' most common out-of-stock reactions?

1.3 Contribution

This research paper expands on existing studies on OOS responses and further explores a rather unexplored, and called upon dimension (Sloot, Verhoef and Franses, 2005), by investigating whether the stockout type (regular versus promotional) and the product type (hedonic versus utilitarian) within a grocery environment affect the likelihood of different customer reactions. While prior research has mainly focused on regular stockouts across the two product types, this study aims to rejuvenate the field by accounting for the surge in promotional campaigns in the retail grocery sector. In doing so, this paper aims to investigate a timely yet underexplored context, offering the latest insights into how stockout type and product type shape consumer responses – *Brand switch, Item switch, Store switch, Postponement,* and *Cancellation.*

1.4 Delimitations

Several delimitations were established to clearly define the scope and focus of this study. While these decisions were necessary to ensure methodological clarity and feasibility, they may influence the generalizability of the findings.

To begin with, this study focused exclusively on monetary price promotions, specifically a 20% discount was chosen as the promotional mechanism. Other forms of promotional strategies, such as bundle deals (e.g., "buy one get one free") or loyalty-based incentives, were excluded, since they introduce additional psychological and logistical dynamics beyond the temporary markdowns studied in this paper.

Furthermore, the study was conducted exclusively within the context of Swedish grocery retailing and was limited to respondents in Sweden. This was done because the Swedish market has a relatively concentrated structure, characterized by a few dominant retail chains (Swedish Competition Authority, 2024). This unique market dynamic may influence

consumer behavior, brand loyalty, and responsiveness to promotional strategies in ways that differ from other national markets.

Moreover, specific brand names were excluded from the experimental scenarios. Instead, the placeholder "your favorite [product]" was used to personalize the scenarios while avoiding brand-related biases. This was intended to isolate the effects of price promotions and product type, ensuring that responses reflected these variables without being influenced by brand loyalty.

Finally, consistent with prior OOS research, customer responses were limited to the five reactions most frequently observed – *Brand switch, Item switch, Store switch, Postponement,* and *Cancellation* (Verhoef and Sloot, 2010).

These delimitations were made to streamline the research process and support internal validity, but they also represent important considerations when interpreting the results and their applicability beyond the studied context.

1.5 Structural Overview

The remainder of this thesis is organized into seven sections. The introduction (Section 1) has laid out the background, research objectives, delimitations, and key contributions of the study. Section 2 develops the theoretical framework, reviewing prior research on consumer reactions to out-of-stock situations and deriving the study's hypotheses. Section 3 describes the methodology and details the research design, experimental manipulations, sampling procedure, survey instrument, measurement development, as well as data collection. Section 4 presents the results, reporting manipulation checks, descriptive statistics, and two-way MANOVA outcomes. Section 5 discusses these findings in light of the theoretical framework, highlights both theoretical contributions and practical implications, acknowledges the study's limitations, and offers suggestions for future research. The thesis concludes with a complete list of references (Section 6) and relevant appendices (Section 7).

2 Theoretical framework

This research paper will examine the most commonly studied reactions to out-of-stock situations, and apply them to a called upon context: promotional stockouts (Sloot, Verhoef, and Franses, 2005). It will specifically investigate whether the nature and intensity of the established reactions to regular stockouts differ when customers encounter promotional stockouts across different product types, hedonic versus utilitarian.

Building on previous literature on customer response to OOS situations, Verhoef and Sloot (2010) have compiled the most common and severe consequences for retailers of out-of-stock situations. Adopting these reactions and building on the antecedents of this literature stream will help in producing comparable and relevant results. The OOS reactions are classified into two general clusters, i.e., substitutional and non-substitutional (Verhoef and Sloot, 2010). Both of these are broken down further to six specific customer reactions: *Item switch, Category switch, Brand switch, Store switch, Postponement,* and *Cancellation.* However, as noted by Sloot, Verhoef, and Franses (2005), category switch is a rare reaction and is thus not considered relevant for this study. Although cancellation is also a rarely seen reaction, it is included due to its potential increased relevance in the promotional stockout context, where the loss of promotional incentives may notably affect customer decision-making.

The following section presents a comprehensive literature review of existing research on OOS reactions, price promotions, and product types. To structure the discussion, the review is organized around two categories of customer behavior: substitutional and non-substitutional. Given that many theoretical frameworks and empirical findings are relevant to multiple hypotheses, some overlap in the supporting arguments is to be expected. Note that no hypotheses about the interaction effect between stockout type and product type were formed. Nevertheless, to ensure completeness and rule out alternative explanations, the interaction effect will be empirically tested in section 4.

2.1 Out-of-Stock Reactions

2.1.1 Substitution

2.1.1.1 Brand Switch

In the existing out-of-stock literature, brand switching is defined as buying another brand within the same intended product category (Sloot, Verhoef, and Franses, 2005). In this research paper, the same definition was adopted but applied to specifically examine customer

responses across hedonic and utilitarian product types as well as regular and promotional stockout scenarios.

When an item is promoted, customers are typically motivated by the opportunity to save money rather than the utility of the acquired product (DelVecchio, 2005). Research conducted by Diels, Wiebach and Hildebrandt (2013) has found that customers faced with regular OOS situations predominantly switch to substitutes resembling the formerly preferred option on the respective considered attributes, which is also consistent with Campo, Gijsbrechts, and Nisol (2003) results. Thus, rather than leaving empty-handed, customers would be more likely to switch to a comparable brand to obtain their desired product (Khan and DePaoli, 2024). Further, when faced with promotional OOS, customers show different behavioral patterns. If the purchase is purely motivated by the price promotion, the immediate urgency or need for the product is likely to decrease, and customers would be more prone to wait for a restock, rather than switching to another full-priced substitute (Zinn and Liu, 2001).

The intended usage of the product and the customer's willingness to engage in substitutional behavior has previously been researched by Emmelhainz, Stock, and Emmelhainz (1991). The study found that 75% of customers chose to substitute when the product was for regular use, whereas only 40% did so when the item was intended for a special occasion. These findings suggest that utilitarian products, which typically fulfill a functional and instrumental need, are more likely to drive substitutional behavior than hedonic products that provide experiential and emotional value (Batra and Ahtola, 1991; Dhar and Wertenbroch, 2000). When customers seek hedonic items, they may be less willing to settle for an alternative brand, opting instead to delay or cancel the purchase altogether as the emotional value that hedonic products carry is higher compared to utilitarian ones (Sloot, Verhoef and Franses, 2005).

Furthermore, urgency also plays a crucial role in substitutional behavior (i.e., brand switching). The greater the urgency of acquiring a product, the more likely customers are to substitute (Zinn and Liu, 2001). When urgency is high, customers have limited time to consider alternative responses, such as delaying the purchase or seeking the item elsewhere. This aligns with Emmelhainz, Stock, and Emmelhainz (1991), who observed that a significant number of OOS-affected customers switched brands due to the immediate necessity of regularly used items. Thus, as utilitarian products typically carry higher urgency with their functional attributes (Batra and Ahtola, 1991; Dhar and Wertenbroch, 2000), the

likelihood of substituting a utilitarian product with another brand of the same product is greater.

The presence of promotional discounts, however, may alter customers' willingness to substitute differently for hedonic and utilitarian products. Promotional offers provide customers with psychological justifications to purchase hedonic products and reduce the feeling of guilt associated with hedonic purchases, thus when faced with a promotional stockout the guilt associated with hedonic purchases can no longer be justified without the promotion (Okada, 2005; Kivetz and Zheng, 2017), and the willingness to substitute for a brand at a regular price would be lower than if faced with a regular OOS situation. Additionally, as price promotions may cause stockpiling behavior (Anderson and Fox, 2019; Van Heerde, Gupta and Wittink, 2003), it can be assumed that some of the purchases are purely motivated by price promotions and not an immediate need for the item, hence diminishing the need for substitution.

Drawing from these insights, the following hypotheses are put forward:

H1a: Customers are more (vs. less) likely to switch brands in regular (vs. promotional) out-of-stock situations.

H1b: Customers are more (vs. less) likely to switch brands when the desired product is utilitarian (vs. hedonic) in out-of-stock situations.

2.1.1.2 Item Switch

In existing out-of-stock literature, item switching is defined as switching to another format or variety of the same brand (Sloot, Verhoef, and Franses, 2005). However, since this paper does not focus explicitly on the relationship between brand equity and OOS situations but rather on customer reactions to stockouts, item switching will be considered as selecting a different format or variety of the intended product, regardless of brand. This formulation would capture customers' consideration of substituting their intended purchase rather than forgoing it entirely.

Previous research distinguishes between voluntary and involuntary motivations for item switching. Campo, Gijsbrechts, and Nisol (2003) emphasize that when all items are available, customers typically switch items voluntarily, driven by positive incentives such as promotions or variety-seeking. Further, they also mention that in OOS situations, item

switching becomes an involuntary action, motivated by negative emotions to limit further complications such as switching stores or delaying the purchase.

When faced with a regular, unexpected stockout, Diels, Wiebach, and Hildebrandt (2013) found evidence that buyers tend to stay within the same product line of the intended purchase to avoid further complexity. Seeking substitutes, such as a different size or variant, could be seen to be pursued as a form of coping (Khan and DePaoli, 2024), to limit further complications such as switching stores or delaying the purchase (Campo, Gijsbrechts, and Nisol, 2003). This behavior tends to shift when the item out of stock is on promotion, and the purchase motivation is mainly grounded in the possibility of saving money, rather than the immediate need, which decreases the likelihood of feeling the need of acquiring a different item (Zinn and Liu, 2001).

Utilitarian products, characterized by their instrumental and functional attributes, typically generate higher urgency and greater substitutability (Batra and Ahtola, 1991; Dhar and Wertenbroch, 2000). Customers are more likely to switch to alternative product variants under involuntary, negative conditions associated with stockouts, driven primarily by the immediate functional necessity to avoid further inconvenience (Campo, Gijsbrechts and Nisol, 2003; Zinn and Liu, 2001).

Hedonic products, on the other hand, are characterized by their emotional, experiential, and pleasurable attributes (Dhar and Wertenbroch, 2000). Due to their specific experiential or emotional appeal, customers may have more difficulty finding the same specific attributes in an alternative product. Thus, customers facing stockouts of hedonic items may prefer postponing the purchase or switching stores rather than having to compensate to acquire their desired product.

Promotions act as positive incentives, enhancing customers' initial product selection, especially for hedonic products where promotions justify indulgent or emotionally driven choices (Okada, 2005; Kivetz and Zheng, 2017). Hence, during promotional stockouts, customers who are buying hedonic items lose the promotional justification, and switching to another item that may not even fully fulfill the same emotional and experiential needs would most probably not be justified. Although utilitarian items, with a certain functional and instrumental urgency, may be more commonly substituted in an OOS situation, the role of price promotion may challenge the motivation for such purchases. Specifically, the promotion

may encourage stockpiling behavior (Anderson and Fox, 2019; Van Heerde, Gupta and Wittink, 2003), with customers buying larger quantities to benefit from reduced prices rather than immediate consumption, hence diminishing the perceived urgency to substitute as there is no immediate necessity for the item. Under these conditions, customers become less inclined to switch items, as their motivation may be primarily cost-driven stockpiling rather than an immediate functional need.

Based on these insights, the following hypotheses are proposed:

H2a: Customers are more (vs. less) likely to switch items in regular (vs. promotional) out-of-stock situations.

H2b: Customers are more (vs. less) likely to switch items when the desired product is utilitarian (vs. hedonic) in out-of-stock situations.

2.1.2 Non-Substitution

2.1.2.1 Store Switch

According to Sloot, Verhoef, and Franses (2005), store switching is defined as visiting another store to purchase the out-of-stock product, all during the same day. For the purpose of this study, store switching is defined as visiting another store to purchase the intended product at the same price.

Promotions can draw "cherry-pickers", deal-seekers who purposely travel between retailers just to buy items on promotion (Levy, Weitz and Grewal, 2019, p.359). However, consumers are not only driven by the desire to save money but also by the excitement that arises when locating deals (Talukdar, Gauri and Grewal, 2010). When a promoted item is OOS, customers may be more willing to continue the search as money has an objective value, whereas time is ambiguous, thereby making spending time easier to rationalize for customers (Okada, 2005). In a regular-price stock-out, the promotional justification is absent, and the effort of travelling is unjustified, which makes store-switching less likely (Okada, 2005).

Prior research by Sloot, Verhoef, and Franses (2005) concludes that the likelihood of customers switching stores varies depending on product type, with customers exhibiting a higher propensity to switch stores when the out-of-stock product is hedonic. This behavior can be understood in the context of customer decision-making, where emotions play a consistent and significant role (Lerner et al., 2015). As indicated by Hirschman and Holbrook

(1982), the motivation behind the consumption of hedonic products is connected to customers' emotional arousal, which is experienced when purchasing such products. Building on this, Sloot, Verhoef, and Franses (2005) also suggest that hedonic products carry a higher emotional value, and this, in combination with customers developing a stronger attachment to hedonic benefits, would suggest a higher likelihood of store switching to hedonic products compared to utilitarian ones. Furthermore, research by Okada (2005) suggests that customers are relatively more willing to put in more time when purchasing hedonic products, whereas for utilitarian products, they are more inclined to pay a premium.

Given that customers have a greater need to justify purchases of hedonic products, the pain threshold for buying such products decreases when they choose to spend time instead of money to obtain them (Okada, 2005). As well as hedonic products carry a higher emotional value (Sloot, Verhoef and Franses, 2005), and customers purchasing hedonic products are more likely to invest additional time compared to utilitarian products, it is reasonable to assume that these customers are also more inclined to switch stores to obtain the product that is OOS. In contrast, as utilitarian products entail higher urgency to purchase (Batra and Ahtola, 1991; Dhar and Wertenbroch, 2000), and customers of utilitarian products are willing to pay a premium for convenience (Okada, 2005), one can assume that customers are less likely to switch stores to obtain the utilitarian product.

In the context of a promotional OOS situation, it can be posited that the likelihood of store switching for a utilitarian product remains largely indifferent compared to a regular stock-out situation. This is due to the functional characteristics of utilitarian products, where the purchase decisions are driven by necessity (Dhar and Wertenbroch, 2000), rather than promotional incentives. However, in the case of a hedonic product, it can be argued that a promotional OOS situation increases the likelihood of store switching more than a regular stockout. This increased likelihood can be attributed to the role of price promotions as a justification mechanism, which, according to Kivetz and Zheng (2017), alleviates customer guilt and facilitates the purchasing of hedonic products.

Consequently, the following hypotheses are formulated:

H3a: Customers are more (vs. less) likely to switch store in promotional (vs. regular) out-of-stock situations.

H3b: Customers are more (vs. less) likely to switch store when the desired product is hedonic (vs. utilitarian) in out-of-stock situations.

2.1.2.2 Postponement

Postponement or purchase delay refers to customers delaying their purchase decisions until the next shopping trip when faced with an out-of-stock situation involving a desired product (Sloot, Verhoef and Franses, 2005; Zinn and Liu, 2001). Promotions offer a psychological justification for spending, which increases consumers' willingness to delay their purchase in order to obtain both the desired product and the associated promotional benefit (Okada, 2005; Kivetz and Zheng, 2017). In contrast, when customers visit the store without a promotional incentive and with a specific product in mind, it suggests a greater sense of immediate need. This urgency makes substitution more appealing, as there is less flexibility to delay the purchase or leave the store without the item (Zinn and Liu, 2001).

Furthermore, price competitiveness significantly encourages postponement for both hedonic and utilitarian products, as customers anticipate financial benefits by waiting rather than seeking alternatives (Zinn and Liu, 2001). Yet, Zinn and Liu (2001) also found evidence that urgency plays a critical role for the customer to postpone the purchase. The likelihood of postponing a purchase is greater when the urgency to acquire the product is low. Utilitarian products typically carry higher urgency since they predominantly fill an instrumental and functional need (Batra and Ahtola, 1991; Dhar and Wertenbroch, 2000). Due to the higher urgency, it can be assumed that there is an inclined willingness to substitute rather than postpone these purchases.

Hedonic products, on the other hand, are characterized by experiential and emotional benefits (Batra and Ahtola, 1991; Dhar and Wertenbroch, 2000) and, therefore, offer greater emotional value to the customer. Customers shopping for a hedonic product will be more disappointed if the desired product is unavailable (Fitzsimons, 2000). Moreover, having already committed to the purchase in advance because of the promotional activation, it can only be assumed that the disappointment will be even greater. This aligns with Dhar and Wertenbroch (2000) findings that customers exhibit stronger emotional attachment to hedonic

benefits and will be less satisfied if they face inconveniences when purchasing hedonic products.

Furthermore, promotions are critical in customers' postponement decisions, particularly for hedonic purchases. Promotional discounts often serve as justifications for hedonic purchases by reducing the feelings of guilt associated with hedonic purchases (Okada, 2005; Kivetz and Zheng, 2017). As noted by Zinn and Liu (2001), customers who had a pre-visit agenda, driven by promotional offers, are especially inclined to delay their purchases until the item becomes available again. Given that promotions frequently serve as justification mechanisms, particularly for hedonic products (Okada, 2005), customers may be more willing to postpone hedonic purchases to maintain the emotional satisfaction and experiential quality initially intended. Likewise, if the purchase was motivated by the promotion, the willingness to postpone a utilitarian product would increase. However, if the promotion influences the purchase, and there is also an immediate need for the item, the likelihood of substituting the item becomes higher.

Considering these insights, the following hypotheses were developed:

*H4a***:** *Customers are more (vs. less) likely to postpone their purchase in promotional (vs. regular) out-of-stock situations.*

*H4b***:** *Customers are more (vs. less) likely to postpone their purchase when the desired product is hedonic (vs. utilitarian) in out-of-stock situations.*

2.1.2.3 Cancellation

Cancellation, defined as the decision to abandon a purchase entirely or postpone it for a longer time (Sloot, Verhoef, and Franses, 2005), represents one of the severe customer responses resulting from stockouts, which carry direct financial losses for both manufacturers and retailers (Campo, Gijsbrechts, and Nisol, 2003).

Customers are more likely to cancel a purchase when the desired item is out-of-stock during a promotion than when the same stockout occurs at a regular price, because the disappearance of the deal strips away the financial and psychological incentive that initially motivated the trip (Okada, 2005; Kivetz and Zheng, 2017). Additionally, when items are advertised and promoted, customer expectations tend to rise (Taylor and Fawcett, 2001), however, if those customers encounter a stockout, they are more likely to leave the store without purchasing, as

research shows that surprise plays a significant role in cancellation (Zinn and Liu, 2001). Specifically, a one-unit increase in the level of surprise due to a stockout raises the probability of a customer leaving the store by 14% (Zinn and Liu, 2001). Furthermore, Krishna, Currim and Shoemaker (1991) found that some customers are highly aware of promotion cycles and recognize that even if a deal becomes unavailable, it is likely to return. Building on this, Kalwani and Yim (1992) discovered that frequent promotions can lower customers' internal reference prices of the regularly discounted items, making customers more likely to postpone purchases until the next promotional cycle.

Furthermore, it is also likely that customers will have a different likelihood of canceling a purchase depending on what product type the item they intend to buy belongs to. Research indicates that the more urgent the need for an item is, the more likely customers are to substitute that item (Zinn and Liu, 2001). Given that utilitarian products in general encompass higher urgency, due to their practical and functional attributes, compared to hedonic products (Batra and Ahtola, 1991; Dhar and Wertenbroch, 2000), and that customers have restricted time to consider other options in urgent situations, it can be assumed that customers are more likely to not cancel the purchase of a utilitarian product compared to hedonic products. Combining the urgency of utilitarian products, together with the fact that customers are more willing to pay a premium for convenience when purchasing utilitarian products (Okada, 2005), it is also likely to assume that customers in an OOS situation are more prone to purchase a substitute compared to canceling their purchase when the product is utilitarian. In contrast, as hedonic products carry a higher emotional value compared to utilitarian products (Sloot, Verhoef and Franses, 2005), and customer are more inclined to spend time when purchasing such products compared to utilitarian ones (Okada, 2005), it is further reasonable to assume that customers are likely to be hesitant to act in a substitutional behavior in an OOS situation of hedonic products, and instead decide to cancel the purchase, postpone it or switch store.

Promotions serve as a justification mechanism, particularly for hedonic products, by alleviating customer guilt and rationalizing hedonic spending (Okada, 2005; Kivetz and Zheng, 2017). Hence, when a customer encounters a promotional stockout of a hedonic item, the disappearance of the promotion removes the physiological justification that previously facilitated the hedonic purchase. Consequently, the absence of this justification could sharply increase the likelihood of customers cancelling the hedonic purchase altogether, rather than substituting the purchase with a non-promoted item. In contrast, for utilitarian products, the

removal of promotional incentives is not as effective in justifying a specific purchase (Okada, 2005), hence, it may not lead to cancellation due to the inherent functional necessity and instead prompt substitutional behavior.

Considering these insights, the following hypotheses have been developed:

H5a: Customers are more (vs. less) likely to cancel their purchase in promotional (vs. regular) out-of-stock situations.

H5b: Customers are more (vs. less) likely to cancel their purchase when the desired product is hedonic (vs. utilitarian) in out-of-stock situations.

3 Methodology

This section discusses the research method used and details the selected approach for addressing the defined research questions.

3.1 Research Methodology

This research paper utilizes an experimental research design coupled with a quantitative approach. A quantitative approach was chosen as it is suitable for focusing on specific variables (Denscombe, 2017, p. 6). As this research paper investigates how promotions and product type affect customers' out-of-stock reactions, a quantitative approach was deemed appropriate as it allows for understanding customer attitudes and making generalizable inferences beyond the sample studied (Eliasson, 2013, p. 31). Furthermore, as the research focuses on multiple variables, the use of an experimental research design is advantageous as it enables a controlled environment in which causes and results can be accurately measured (Denscombe, 2017, p.80).

Furthermore, this research paper is, in accordance with many other quantitative studies, structured using a deductive approach. Consequently, the hypotheses are formulated based on previous theory and research in the field and are subsequently tested through an experiment (Bryman, 2018, p. 49-50).

3.2 Language

Both the pre-test and the main study surveys were conducted in English. Although the participants were based in Sweden, English was the chosen language to prevent discrepancies with previous research conducted by Sloot, Verhoef, and Franses (2005), which this research paper builds upon. Not translating the questions to Swedish ensured that any potential alterations in wording and meaning were prevented, which otherwise could negatively affect the validity and accuracy of the findings. Furthermore, to reduce the likelihood of language barriers and respondents misunderstanding the questions in the surveys, all participants were required to be fluent in English.

3.3 Pre-test

3.3.1 Purpose of Pre-test

A pre-test was conducted to validate the two independent factors of the main study: (1) to identify which products were perceived as the most hedonic and utilitarian, respectively, and

(2) to evaluate whether the scenarios were effectively formulated and perceived as promotional or non-promotional. This is particularly important when conducting a 2x2 factorial experiment (Auspurg and Hinz, 2015, p.82).

The pre-test included two treatment conditions, promotion versus no promotion, and eight different products that have been previously identified in the literature as either hedonic or utilitarian. The hedonic products tested were chocolate (Kuikka and Laukkanen, 2012), ice cream (Otterbring, Folwarczny and Gidlöf, 2023), potato chips, and candy (Huang and Lu, 2016), while the utilitarian products tested were pasta (Gaston-Breton and Duque, 2015), rice (O'Curry and Strahilevitz, 2001), bread (Otterbring, Folwarczny and Gidlöf, 2023), and yoghurt (Huang and Lu, 2016).

The intention was to determine which products are perceived most strongly as hedonic and utilitarian, recognizing that hedonism and utilitarianism are not two ends of a one-dimensional scale (Voss, Spangenberg and Grohmann, 2003), as products can be high or low in both hedonic and utilitarian attributes (Crowley, Spangenberg and Hughes, 1992). The two products showing the largest mean difference between hedonic and utilitarian ratings were selected for the main study. Additionally, both of the OOS treatments were tested in the pre-test to check the comprehensibility of the treatment and to determine whether there was sufficient information to ensure a uniform understanding of the different scenarios (Auspurg and Hinz, 2015, p.82).

3.3.2 Pre-test Design

The pretest was carried out as a digital survey within an experimental framework and analyzed using quantitative methods. Participants were randomly assigned to one of the two treatment groups and then presented with a stockout scenario. Following this, they were shown a brief description explaining the concept of hedonic and utilitarian products. Finally, respondents were asked to rate eight different products based on these dimensions.

The treatment consisted of two different purchase scenarios: one in which the product was on promotion and one in which it was not. To ensure the scenarios were realistic and closely aligned with those used in the main study, fruit was randomly chosen as the product featured in both scenarios and remained constant across conditions. The only difference between the two scenarios was the presence or absence of a promotional offer.

After having been exposed to one of the OOS scenarios, respondents were asked to answer two questions related to the scenario. The first question concerned the type of stockout and was phrased: *"Based on the scenario you just read, what best describes the situation?"*. Respondents could choose between four alternatives, combining purchase context (promotion/regular) and stock availability (out-of-stock/NOT out-of-stock). Only one of the options correctly reflected the scenario. The second question asked about the type of product featured in the scenario and was phrased: *"What type of product was the scenario about?"*. Respondents were given three product options, with only one corresponding to the product presented in the scenario.

In the next part of the survey, respondents were presented with a brief explanation of the key characteristics of hedonic and utilitarian products. Both explanations were adapted from Dhar and Wertenbroch (2000) and worded in the survey as follows:

> **Hedonic:** *"Hedonic products are items people buy mainly for pleasure, enjoyment, or fun."*
>
> **Utilitarian:** *"Utilitarian products are items people buy mainly for useful, practical, or functional purposes."*

Following this, respondents were asked to rate each of the eight products on two separate single-item scales: one for hedonism and one for utilitarianism. Responses were recorded using a 7-point Likert scale. As noted by Okada (2005), the use of single-item scale measurement has shown a significant and positive correlation with the more comprehensive multi-item scale measure of Voss, Spangenberg and Grohmann (2003). Therefore, to reduce the number of questions and simplify the survey experience for respondents, the single-item scale approach was deemed the most appropriate.

3.3.3 Pre-test Sample & Distribution

The pre-test sample consisted of 41 respondents, who were randomly allocated to one of two treatment groups ($N_1 = 20$, $N_2 = 21$). The survey was distributed digitally using a convenience sampling method, primarily to acquaintances within the authors' personal networks. Given the focus on validating perceived product attributes and scenario comprehensibility, the use of a convenience sample was deemed sufficient to identify directions and potential issues with the scenarios before conducting the main study.

3.3.4 Pre-test Results

A summary of the pre-test results can be found in *Appendix 1*. The results of the pre-test indicated that a bag of candy (M_Hedonic = 6.37, M_Utilitarian = 1.85, mean difference = 4.51, $p < .001$) was the hedonic product with the largest mean difference between hedonic and utilitarian ratings. Similarly, rice (M_Hedonic = 2.71, M_Utilitarian = 5.95, mean difference = 3.24, $p < .001$) was identified as the product with the greatest mean difference among the utilitarian products. The independent-samples t-test results support the selection of a bag of candy and rice as the two products for the main study, as they exhibit the most pronounced differentiation between hedonism and utilitarianism.

Additionally, the results of the pre-test indicated that the treatments were clearly formulated and effectively communicated to the respondents. Respondents demonstrated a high level of recall of the key information from the treatments, with an accuracy rate of 88% (N = 41) for correctly identifying the stockout scenario and 90% (N = 41) for correctly identifying the product type. These results suggest that the treatments were well understood by the respondents and appropriate to use in the main study.

3.4 Main Study

The main study was based on the results of the pre-study, which established that rice and a bag of candy were the products that the respondents of the pre-study deemed as most hedonic and utilitarian.

The main study was built upon a factorial research design in which the two factors were (1) the product type (i.e., hedonic or utilitarian) and (2) the stockout context (i.e., a regular or promotional stockout). The study was conducted through a role-playing experiment where the participants were assigned to a group with different treatments. In total, four treatment groups were examined. Each treatment group was subject to a scenario in which the stockout situation (regular or promotional) and product type (hedonic or utilitarian) changed. The study examined the likelihood of five different customer reactions to stockouts and how they differ between regular and promotional situations and utilitarian and hedonic products.

The purpose of the main study was to expand on previous research and investigate how promotions affect customers' OOS reactions, i.e., 1) brand switch, 2) item switch, 3) store switch, 4) postponement, and 5) cancellation.

3.4.1 Purchase Context

The main study consisted of four different purchase contexts. Each respondent was exposed to one of the following scenarios:

> **Scenario 1:** *"Imagine you have planned to purchase your favorite bag of candy during your next grocery store visit. However, once you arrive at the store, you realize that the product is out-of-stock."*
>
> **Scenario 2:** *"Imagine you have come across a 20% promotion for your favorite bag of candy and plan to purchase it during your next grocery store visit. However, once you arrive at the store, you realize that the product is out-of-stock."*
>
> **Scenario 3:** *"Imagine you have planned to purchase your favorite rice during your next grocery store visit. However, once you arrive at the store, you realize that the product is out-of-stock."*
>
> **Scenario 4:** *"Imagine you have come across a 20% promotion for your favorite rice and plan to purchase it during your next grocery store visit. However, once you arrive at the store, you realize that the product is out-of-stock."*

The variables changing between the scenarios were what type of product was being bought, and whether the item was on promotion or not. The promotion of 20% was set as this is the average price promotion in Swedish grocery retailing (Mazur, 2025).

3.4.2 Survey Design

The survey consisted of six parts. Part one included a short description of the survey, along with GDPR guidelines, as well as a consent form. Thereafter, in part two, each respondent was randomly allocated to one of four treatment groups (See Purchase Context 3.2.1). Before the scenario was presented, the respondent was instructed to read it carefully, as they would later answer questions related to it. In both part one and two, the description of the survey, the instructions, and the scenarios were written with deception by omission while still conveying sufficient information to the respondent. The purpose of utilizing deception by omission was to reduce the risk of hypothesis testing, which otherwise could negatively affect the results (Söderlund, 2018, p.195).

In part three, respondents were asked five different questions related to their out-of-stock reactions in the scenario that they were presented with. Each question was related to one of the out-of-stock reactions investigated:

1. **Item Switch:** *"How likely are you to purchase a different format or flavor of your favorite [Product: Bag of candy or rice]?"*
2. **Brand Switch:** *"How likely are you to purchase a similar [Product: Bag of candy or rice] from another brand?"*
3. **Store Switch:** *"How likely are you to go to a different store to purchase your favorite [Product: Bag of candy or rice] at the same price?"*
4. **Postponement:** *"How likely are you to wait until your next shopping trip to purchase your favorite [Product: Bag of candy or rice] at the same price?"*
5. **Cancellation:** "*How likely are you to completely abandon your purchase of your favorite [Product: Bag of candy or rice]?"*

The questions were formulated based on the previous research conducted by Sloot, Verhoef, and Franses (2005). However, Sloot, Verhoef, and Franses (2005) did not convey the exact questions used but instead their definition of each of the OOS reactions. These definitions laid the foundation for the questions used in this survey. Furthermore, given that Sloot, Verhoef, and Franses (2005) measured frequency, the questions for this study were adapted to a role-playing experiment and instead measured the likelihood of each OOS reaction. The questions were formulated using simpler words to reduce the risk of the respondents not understanding the questions. Additionally, the questions were measured on a 7-point Likert scale as it allows for the transformation of psychological attitudes into numerical data (Denscombe, 2017, p.279), thereby facilitating quantitative analysis.

In part four, the main study included two instructional manipulation checks (IMC). The first IMC questioned what best described the scenario presented to the respondent, while the second IMC questioned what product the scenario was about. The purpose of the manipulation checks was to ensure that the participant comprehended the context and was actively participating. The IMCs were placed in part four after the questions regarding the respondents' OOS behavior. The purpose of this was to reduce the potential risk of the IMCs affecting the effect variables (Söderlund, 2018, p.91). Those participants who answered the IMC wrong were disregarded from the analysis and results as they did not prove to understand or comprehend the factual context.

In part five, respondents were asked to answer the question: “How often do you plan your grocery shopping ahead of time?”. The purpose of this question was to examine how common forward planning is among grocery shoppers, thereby enriching the understanding of respondents' everyday grocery habits and providing additional context for the discussion.

Part six of the survey included questions about the respondents’ demographic background, comprising age and gender. Additionally, to capture not only quantitative relationships and demographics, an additional text-entry question was added to part six at the end of the survey. In this question, respondents could add their thoughts or questions regarding the survey and their answers. The purpose of this was to get a potentially deeper understanding of the relationship between promotions and customers' out-of-stock reactions.

3.4.3 Sample & Data Collection

The main study sample consisted of 241 respondents, whereof 222 participants were eligible for the analysis of the results. 19 respondents were excluded due to failing the manipulation check. The participants were randomly assigned to one of four treatment groups ($N_1 = 54$, $N_2 = 54$, $N_3 = 54$, $N_4 = 54$). The survey was distributed via the online research platform Prolific.

The sample size was deemed sufficient based on the central limit theorem, which suggests that for a sufficiently large sample (e.g., $n > 50$), the sampling distribution of the mean approximates a normal distribution (Newbold, Carlson, and Thorne, 2022, p.262-263). To further ensure the robustness of this assumption, a target of 250 respondents was set, allowing for over 50 respondents per group and accounting for potential dropouts. Due to time constraints, the data collection ended after 3 days (April 6th-8th, 2025), at which point 241 responses were collected.

The inclusion criterias that qualified individuals for participating in the survey were: (1) being at least 18 years old, (2) located in Sweden, and (3) being fluent in English. These criteria aimed to ensure that participants could comprehend the survey content and had familiarity with the structure of the Swedish grocery retail sector. No additional criteria for demographics or personal characteristics were required.

4 Results

This section presents the results from the analyses conducted to test the hypotheses regarding customers' OOS reactions (brand switch, item switch, store switch, postponement, and cancellation) under varying stockout conditions (regular versus promotional) and different product types (utilitarian versus hedonic). Firstly, the results from the manipulation check will be presented to confirm that participants accurately perceived their assigned scenarios. Secondly, the results from the descriptive statistics on the respondents' purchase-planning habits will be presented. Lastly, the results from the two-way multivariate analysis of variance (MANOVA) used to test the hypotheses will be presented.

Statistical significance was set at the 5% level for the hypothesis testing, consistent with standard academic research practices (Söderlund, 2018, p.156). A summary of the hypotheses is presented in *Table 1*.

	OOS Reaction	**Stockout type**	**Product type**
Substitution	Brand Switch	*(H1a)* Supported	*(H1b)* Supported
	Item Switch	(*H2a)* Supported	*(H2b)* Not Supported
Non-substitution	Store Switch	(*H3a)* Not Supported	*(H3b)* Not Supported
	Postponement	(*H4a)* Supported	*(H4b)* Not Supported
	Cancellation	(*H5a)* Supported	*(H5b)* Supported

Table 1: Summary of hypotheses

4.1 Manipulation Checks

The results from the manipulation checks, based on descriptive analysis, indicated a high level of accuracy in the treatment conditions that the respondents were exposed to. 92% (N = 222) of respondents correctly identified the treatment conditions they had been exposed to. This indicates that the respondents maintained awareness of the treatments while completing the survey, making their answers eligible for inclusion in further analysis. The remaining 8% (N = 19) who answered the manipulation checks incorrectly were excluded from further analysis, as it could not be confidently concluded that they had recalled the treatment scenarios when providing their answers. Thus, the succeeding analysis consists of 222 responses.

4.2 Descriptive Statistics

Regarding the question about how often customers plan their purchases in advance, the most common response was “Often” (N = 106; 47.7%), followed by “Always” (N = 48; 21.6%) and “Sometimes” (N = 43; 19.4%). Only 10.4% (N = 23) answered “Rarely” planning ahead, and virtually none stated they “Never” plan their purchases ahead (N = 2; 0.9%). Overall, 69.3% of the participants plan their purchase in advance either “Often” or “Always”, whereas just 11.3% do so “Rarely” or “Never”.

4.3 Hypothesis Testing

To assess whether the main effects of stockout type, product type, or their interaction influenced each customer reaction, a two-way MANOVA was performed, testing all dependent variables simultaneously. Preliminary assumption testing was conducted to check for normality, univariate and multivariate outliers, homogeneity of variance-covariance matrices, multicollinearity, and linearity.

The results of the MANOVA (Exhibit Appendix 2) indicated that there was a statistically significant main effect between stockout type (regular and promotional) on the combined dependent variables, $F(5, 214) = 7.537$, $p < .001$, Wilks'Lambda = .850, partial $\eta^2 = .150$. Additionally, there was also a statistically significant main effect between product type (hedonic and utilitarian) on the combined dependent variables, $F(5, 214) = 7.249$, $p < .001$, Wilks'Lambda = .855, partial $\eta^2 = .145$. However, there was no significance for the interaction effect of Product Type × Stockout Type, $F(5, 214) = .438$, $p = .882$, Wilks'Lambda = .990, partial $\eta^2 = .010$. Overall, it can be concluded that there is a significant difference for the main effects, and the mean scores for each dependent variable can be found in *Table 2*.

		Product Type		*Main Effects*
		Hedonic	**Utilitarian**	
Stockout Type	**Regular**	*Brand Switch, M* = 4.98 *Item Switch, M* = 5.11 *Store Switch, M* = 3.20 *Postponement, M* = 3.43 *Cancellation, M* = 3.17	*Brand Switch, M* = 5.66 *Item Switch, M* = 4.86 *Store Switch, M* = 3.32 *Postponement, M* = 3.68 *Cancellation, M* = 2.43	***Brand Switch, M* = 5.33** ***Item Switch, M = 4.98*** ***Store Switch, M* = 3.26** ***Postponement, M* = 3.55** ***Cancellation, M* = 2.79**
	Promotion	*Brand Switch, M* = 3.91 *Item Switch, M* = 4.00 *Store Switch, M* = 3.52 *Postponement, M* = 3.91 *Cancellation, M* = 3.75	*Brand Switch, M* = 4.36 *Item Switch, M* = 3.80 *Store Switch, M* = 4.02 *Postponement, M* = 4.62 *Cancellation, M* = 3.25	***Brand Switch, M = 4.13*** ***Item Switch, M = 3.90*** ***Store Switch, M* = 3.77** ***Postponement, M* = 4.27** ***Cancellation, M* = 3.50**
Main Effects		***Brand Switch, M* = 4.44** ***Item Switch, M* = 4.55** ***Store Switch, M* = 3.36** ***Postponement, M* = 3.67** ***Cancellation, M* = 3.46**	***Brand Switch, M* = 5.01** ***Item Switch, M* = 4.33** ***Store Switch, M* = 3.67** ***Postponement, M* = 4.15** ***Cancellation, M* = 2.84**	

Table 2: Cell Means and Marginal Means for Main Effects

As shown in *Table 2*, the mean OOS reaction scores differ across both stockout type and product type. To confirm or reject the hypotheses, the mean scores from *Table 2* will be tested for statistical significance through the main effects of each dependent variable.

4.3.1 Brand Switch

Brand switching was examined as the first substitution reaction, defined as the likelihood of customers purchasing a different brand within the same product category. The analysis of the MANOVA revealed a significant main effect of stockout type on brand switching, $F(1, 218) = 32.11$, $p < .001$, partial $\eta^2 = .128$. Participants were more likely to switch brands in regular stockout situations ($M = 5.33$, $SD = 1.31$) than in promotional stockout situations ($M = 4.13$, $SD = 1.81$), thus supporting *H1a*. The main effect of product type was also significant, $F(1, 218) = 7.22$, $p = .008$, partial $\eta^2 = .032$. Specifically, customers were more likely to switch brands when the desired product was utilitarian ($M = 5.01$, $SD = 1.56$) than when it was hedonic ($M = 4.44$, $SD = 1.77$), in support of *H1b*.

4.3.2 Item Switch

Item switching was the second substitution reaction examined, referring to the likelihood of customers switching to another format or variety of the intended product. Results showed a significant main effect for the stockout type on the item switch, $F(1, 218) = 23.50$, $p<.001$, partial $\eta^2 = .097$. Participants were more likely to switch items in regular stockout situations ($M = 4.98$, $SD = 1.684$) than in promotional stockout situations ($M = 3.90$, $SD = 1.742$) in support of *H2a*. The main effect for product type (hedonic vs. utilitarian) did not reach statistical significance on item switching, $F(1, 218) = 1.02$, $p = .314$, partial $\eta^2 = .005$, with the mean scores for hedonic items ($M = 4.55$, $SD = 1.69$) and utilitarian items ($M = 4.33$, $SD = 1.79$) being rather similar in terms of item switching, thus rejecting *H2b.*

4.3.3 Store Switch

Store switching, as a non-substitutional customer reaction, is defined as visiting another store to purchase the out-of-stock product at the same price. The results did not reveal a significant main effect of stockout type on store switching, $F(1, 218) = 3.39$, $p = .067$, partial $\eta^2 = .015$, that is because customers were only marginally more likely to switch stores when faced with a promotional stockout ($M = 3.77$, $SD = 2.12$) compared to a regular one ($M = 3.26$, $SD = 1.97$). Similarly, the main effect for product type was also non-significant, $F(1, 218) = 1.27$, $p = .261$, partial $\eta^2 = .006$, as mean scores for store switching were comparable for utilitarian items ($M = 3.67$, $SD = 2.07$) and hedonic items ($M = 3.37$, $SD = 2.03$). Hence, these results did not support *H3a* or *H3b*.

4.3.4 Postponement

Postponement, referring to the delay of purchase until the next shopping occasion, was investigated as the second non-substitution reaction. The analysis uncovered a significant main effect of stockout type on postponement, $F(1, 218) = 8.84$, $p = .003$, partial $\eta^2 = .039$, with postponement being more likely in promotional stockout scenarios ($M = 4.27$, $SD = 1.82$) than in regular stockout situations ($M = 3.35$, $SD = 1.80$), supporting *H4a*. Additionally, a significant main effect of product type existed, $F(1, 218) = 4.03$, $p = .046$, partial $\eta^2 = .018$, as there was a greater tendency to postpone the purchase of utilitarian products ($M = 4.15$, $SD = 1.82$) compared to hedonic products ($M = 3.67$, $SD = 1.83$), however, since the mean was greater for utilitarian products, this goes against *H4b*, which consequently makes it unsupported.

4.3.5 Cancellation

Finally, for cancellation, defined as the complete abandonment or indefinite postponement of the purchase, a significant main effect of stockout type on cancellation, $F(1, 218) = 9.41$, $p = .002$, partial $\eta^2 = .041$) was present, as customers were more likely to cancel their purchase in promotional stockout situations ($M = 3.50$, $SD = 1.79$) than in regular stockout situations ($M = 2.79$, $SD = 1.66$), thus supporting *H5a*. Additionally, the main effect of product type was also significant, $F(1, 218) = 7.31$, $p = .007$. partial $\eta^2 = .032$. There was a greater likelihood of cancelling hedonic purchases ($M = 3.46$, $SD = 1.80$) compared to utilitarian ones ($M = 2.84$, $SD = 1.67$), supporting *H5b*.

5 Discussion

5.1 Summary of Main Findings

The purpose of this research paper was to examine the independent effects of stockout type (regular versus promotional) and product type (hedonic vs utilitarian) on five consumer OOS reactions (brand switch, item switch, store switch, postponement, and cancellation). Accordingly, two research questions were formulated:

(1) *How do regular versus promotional stockouts differently influence the likelihood of customers' out-of-stock responses?*
(2) *How do utilitarian and hedonic products differently influence the likelihood of customer responses in out-of-stock situations?*

The research questions explored whether the stockout type and the product type independently influenced the likelihood of various customer reactions. Together, they also raised the question of whether they interact to influence customer reactions. That is, whether the effect of stockout type on customer reactions depends on whether the product is hedonic or utilitarian.

Our results indicated no interaction effect between stockout type and product type. The absence of a significant interaction suggests that their effects on customer reactions are additive rather than multiplicative. That is, each variable appears to exert an independent influence, with no evidence that the impact of one depends on the level of the other. Although not every customer reaction differed significantly across conditions, we found that stockouts of items on promotion tended to suppress substitutional behaviors (i.e., brand switch and item switch) while amplifying non-substitutional behaviors (i.e., postponement and cancellation) compared to stockouts of regularly priced items. However, store switch was found to be non-significant. Furthermore, we hypothesized that substitutional behaviour would be more likely for utilitarian products, whereas non-substitutional behavior would be more likely for hedonic products. The results partially supported this, as we could reveal that utilitarian products foster greater brand switching, and hedonic products were more prone to cancellation. The hypotheses for product type regarding item switching and store switching were not supported, as no significant differences were observed for these reactions. Interestingly, however, postponement was significantly more likely for utilitarian products, which contradicts our initial hypothesis.

5.2 Theoretical Contributions

This thesis contributes to the research area of retail marketing and develops the understanding of customer behavior by investigating how pre-purchase incentives in the form of promotions and product types shape substitutional and non-substitutional responses under scarcity. Furthermore, the research also contributes to the research area of pricing strategy through investigating how promotions affect coping behaviors in OOS situations.

Although prior research has investigated consumer reactions in regular OOS situations and the separate effects of price promotion and product types, there is to the authors' knowledge, no study that has integrated these factors to understand how promotional OOS situations shape consumer reactions. Through experimentally combining product type (utilitarian vs hedonic) and stockout type (regular vs promotional), this thesis expands the understanding of the five out of six primary OOS reactions contextualized by Sloot, Verhoef, and Franses (2005).

Our research contributes to the existing theory and models by demonstrating that promotions are an additional antecedent to consumers' OOS reactions and reconfigure downstream substitutional and non-substitutional behavior during OOS situations. The findings reveal that when an item on promotion is OOS, reactions such as brand switch and item switch are dampened, whilst postponement and cancellation are heightened. Thereby, the findings suggest that a planned purchase induced by a promotion can lead to consumers having more committed and narrow decision-making, meaning that those customers with specific promotion-oriented plans are less flexible when the items are unavailable. In such cases, customers instead seem to be more prone to engage in a non-substitutional behavior to find the item elsewhere. This can be due to consumers experiencing a pronounced sense of a lost opportunity or "missed deal", as according to the Prospect Theory (Kahneman and Tversky, 1979), customers experience losses more intensely than equivalent gains.

Thus, what can be seen is that consumers facing an item on promotion that is out-of-stock are more likely to turn to a non-substitutional response, in contrast to consumers facing an item not on promotion that is out-of-stock, who instead are more prone to act in a substitutional behavior. Therefore, the concept of a promotional OOS situation bears behavioral implications as it likely invokes customers with a stronger negative attitude and disappointment, which in turn could negatively affect the retailer. Consequently, promotions not only act as an incentive which shapes purchasing decisions before entering the store (Xia

and Monroe, 2009), but also the in-store customer reactions to products OOS. By differentiating between regular and promotional OOS situations, this research expands OOS research and suggests that OOS situations of items on promotion are not only a logistical issue, but also affect consumer behavior, whilst opening up for future research on consumer satisfaction and retailer loyalty in such situations.

Furthermore, by integrating the extra dimension of planned purchases in customer behavior during OOS situations, this study aligns OOS research with contemporary modern promotional shopping, in which a majority of customers, according to our findings, often or always make planned purchases before going grocery shopping. Thereby, this study adds a dimension to OOS theory by suggesting that the origin of a consumer's decision (planned vs unplanned) influences their subsequent reactions to OOS situations. Therefore, the study also contributes to research by connecting research on promotions with research on OOS reactions, consequently providing a better understanding of consumer decision making from intention formation to outcome.

Additionally, the research contributes to the research on how product type affects consumer reactions to products OOS. Interestingly, however, the findings do not at all times align with prior research conducted by Sloot, Verhoef, and Franses (2005). Firstly, we hypothesized that customers would be more prone to switch brands when the item purchased was utilitarian compared to hedonic. Our results support this hypothesis, whilst Sloot, Verhoef, and Franses (2005) could not. Secondly, the research by Sloot, Verhoef, and Franses (2005) also suggested and found support for that the hedonic level of a product increases the probability of store switching. In contrast, our findings do not support this. However, the different results could be due to different research methods, where our research investigates likelihood, whilst Sloot, Verhoef, and Franses (2005) investigate frequency. Nevertheless, the findings nuance prior research and suggest that there is a more complex relationship than anticipated.

Finally, another interesting finding in our study was the reversal of our hypothesis regarding postponement. In contrast to Zinn and Liu's (2001) assertion that the level of urgency a product entails affects the likelihood of postponement, we observed that respondents were significantly more likely to postpone their purchase when confronted with a stockout of a utilitarian product compared to a stockout of a hedonic product. Therefore, despite utilitarian products in general carrying a higher urgency (Batra and Ahtola, 1991; Dhar and Wertenbroch, 2000), urgency alone does not seem to reliably predict postponement behavior.

One thing which could explain this discrepancy is that, given the functional need which utilitarian products entail, it could be assumed that respondents perceive substitutes to utilitarian products as inadequate, consequently, instead opting for postponing rather than substituting. However, this somewhat goes against the other findings of our research, suggesting that respondents were more likely to switch brands when purchasing a utilitarian product that is OOS, thereby advocating for further research. Theoretically, this finding extends existing OOS research whilst also nuancing the customer behavior related to utilitarian and hedonic products by showing that the relation between product type and OOS reaction is not straightforward and requires further research. This study therefore, extends existing OOS theory by establishing promotions as an antecedent of stockout reactions and by further demonstrating how product type shapes customers' responses.

5.3 Practical Implications

Although retailers use promotions to attract customers, increase stockpiling, and purchase acceleration (Anderson and Fox, 2019; Van Heerde, Gupta and Wittink, 2003), it is also important to recognize the drawbacks and potential pitfalls that the over-reliance on them can cause. Based on our findings, it is evident that customers are more likely to take non-substitutional actions when faced with a stockout of an item on promotion compared to a stockout of a regular-priced item. Therefore, in OOS situations of products on promotion, grocery retailers not only lose the sale of the specific SKU, but might also lose overall store traffic and basket-building effects, given that customers instead opt to switch to another store, postpone their purchase, or cancel it altogether. Furthermore, the loss of sales and store traffic is only a short-term consequence. In the long term, it is possible that the OOS situation of an item on promotion amplifies the negative attitudes towards the retailer, as previous research has, e.g., established that customers are less inclined to return to a store in which they have previously experienced a stockout (Fitzsimons, 2000). However, the effects of promotional stockouts, compared to regular stockouts, on customer attitudes, loyalty, and satisfaction towards the retailer still require further investigation.

Given the above, it is therefore suggested that retailers should, during promotions of products, have an additional safety stock to ensure that they do not run out of products. However, these findings make it harder for retailers, given the strategic use of promotions. At times, promotions are used to drive inter alia store traffic, but they can nonetheless also be used to clear out old inventory. Here, retailers face a dilemma since they will likely have a

limited amount of the products on promotion. Potential strategies for mitigating the non-substitutional behavior could be to offer a similar promotion on a substitute product or offer extra loyalty points on purchases to nudge consumers into completing a purchase in the store instead of, e.g., cancelling it.

Retailers also need to have in mind which product type each item belongs to. Our results show that respondents were both more likely to switch brands and postpone their purchase of utilitarian products. In this way, the results do not present a clear path forward as to how retailers should approach or reason around OOS situations of utilitarian products. However, the decision customers make in store when a utilitarian product is OOS is likely dependent on the context. If customers do not have the possibility to switch to another brand with a similar product fulfilling the same needs, the customer will likely opt to postpone their purchase. However, if customers do face a choice and have access to an alternative product that meets their needs, the path forward is ambiguous, as the results do not clearly indicate whether the customer will postpone their purchase or switch brands. Regardless, the practical suggestion is that grocery retailers should offer substitute products whenever a utilitarian item is out-of-stock to capture their willingness to acquire a similar product or brand immediately rather than pursuing non-substitutional actions. In doing so, the retailer can help prevent lost sales and might mitigate the possible negative customer perceptions that could arise when products are unavailable in-store. While this ambiguity opens up for future research, these practical implications also show grocery retailers how customers react when promoted or utilitarian items are OOS, guiding them in planning promotions and deciding how to respond when utilitarian products are unavailable, in turn helping protect the customer experience even when supply fails to meet demand.

5.4 Limitations & Future Research

The research conducted in this study provides retailers with valuable insights. Nevertheless, the study has its limitations, which must be taken into account and simultaneously open up for further research.

To begin with, this study is based on an experiment in a controlled, artificial setting in which respondents were subject to a hypothetical scenario. While such a setting can help identify behavioral patterns and offer insights into how customers might respond in real-world situations, it cannot fully replicate the complexity of actual shopping experiences. Additionally, to represent hedonic and utilitarian products, only one product was used for

each: a bag of candy and rice, respectively. These products were selected based on pre-test results identifying them as the most strongly perceived examples of each category. While this approach reduced survey length and complexity, it is important to acknowledge that consumer reactions may vary across different products of the same product type. Moreover, it should be noted that hedonic and utilitarian attributes are not two ends of a one-dimensional scale (Voss, Spangenberg and Grohmann, 2003), and products can be high or low in both hedonic and utilitarian attributes (Crowley, Spangenberg and Hughes, 1992), thus leading to that a certain product can be utilitarian for some customers and hedonic for others. Lastly, Verhoef and Sloot (2010) emphasize that customer behavior toward non-food items can differ from behavior toward food products, suggesting further caution in extending these findings beyond the food context studied in this paper.

To address these limitations, future research should be conducted in a physical grocery-store setting and include multiple items (both food and nonfood) from each product type. By observing how customers respond to OOS situations, both with and without promotions, as well as with multiple utilitarian and hedonic products, researchers can compare intended behavior (from survey responses) to actual behavior in store. This is of interest because Zinn and Liu (2008) suggest that customers' intended behavior can differ from their actual behavior in OOS situations. Consequently, this approach will also help verify whether the findings in our study accurately reflect customers' reactions to OOS situations of items on promotion versus not on promotion, and hedonic versus utilitarian products, in practice.

In addition, given that our study did not examine customer satisfaction or customer loyalty, future research should also investigate how customer satisfaction is affected after OOS situations of items on promotion, both in the short- and long-term. Here, it is also suggested to examine how customer loyalty towards the retailer is impacted by these OOS situations, and whether, as well as to what extent, the number of times a customer experiences an OOS event at the same retailer affects their loyalty.

Furthermore, according to Chandon, Wansink and Laurent (2000), different types of promotions (monetary vs non-monetary) affect the hedonic versus utilitarian benefits differently. The researchers conclude that monetary promotions yield stronger utilitarian benefits. Therefore, because the scenarios involved a promotion of 20%, a limitation of the study is that the use of a monetary promotion could skew the results by being more biased towards utilitarian considerations. Consequently, to establish whether the type of promotion,

i.e., non-monetary or monetary, affects consumers' OOS reactions, further research should be conducted and tests, e.g., bundle-deals such as "buy two, get one free". Moreover, given that the scenarios only included a 20% price promotion, further research can also investigate what impact the size of the discount has on customers' OOS reactions. In a real-world setting, promotions rarely remain uniform, neither in discount rate nor discount type. Therefore, future research should investigate whether the size of the discount (e.g., above or below 20%) affects customers' OOS reactions. This is suggested as the magnitude of the discount likely has a big effect on customers' willingness to, e.g., switch stores, given that the incentive might be higher if the discount is larger and vice versa.

Additionally, another limitation of the study lies in how the questions in the survey were asked. The survey questions included "your favorite…[product]". The purpose of this was to ensure that respondents thought of a specific product of rice and a bag of candy instead of the products in general. However, asking respondents to consider their favorite product might have introduced a bias as participants could naturally choose items they like more than the average category offering, thereby inflating their positive reactions and potentially limiting the study's ability to reliably capture respondents' OOS behavior for utilitarian and hedonic products. As a consequence, we recommend that future studies avoid framing questions in terms of "favorite" product and instead use a more natural tone. By testing for a more neutral scenario, the validity of the findings and conclusions about customers' OOS reactions can be strengthened.

Besides these limitations, future research can further investigate the potential interaction effect between product type (hedonic and utilitarian) and stockout type (promotional and regular). Although this study tested for interaction effects between product type and stockout type, and did not yield any statistical significance in these tests, the observed mean difference could be an indication that the sample size was too small to detect a significant interaction effect. Therefore, it is proposed to conduct a similar study with a larger sample size to determine whether an interaction effect exists.

This study compared the likelihood of OOS reactions between regular and promotional stockouts, without pinpointing which of the five customer reactions is most likely in frequency. Future research should also investigate which OOS reaction predominates in a promotional stockout scenario alone, compared to in a regular stockout. Doing so would further refine the findings and give retailers more nuanced practical implications and

understanding of the consequences of promotional stockouts and how they differ compared to regular stockouts.

Lastly, supplemental research should be made to examine what factors influence whether customers opt to postpone their purchase versus switch brands in OOS situations of utilitarian products. As of now, we can only reason that customers' decisions in such situations are likely context-dependent, but further research needs to be carried out to examine how customer responses are affected when they have the option to both postpone and substitute, to develop more targeted and effective retail strategies.

6 References

Anderson, E.T. and Fox, E.J. (2019). How price promotions work: A review of practice and theory. *Handbook of the Economics of Marketing*, 1, pp.497–552. doi:https://doi.org/10.1016/bs.hem.2019.04.006.

Auspurg, K. and Hinz, T. (2015). *Factorial survey experiments*. Los Angeles : SAGE Publications.

Batra, R. and Ahtola, O.T. (1991). Measuring the Hedonic and Utilitarian Sources of Consumer Attitudes. *Marketing Letters*, [online] 2(2), pp.159–170. doi:https://doi.org/10.2307/40216210.

Bryman, A. (2018). *Samhällsvetenskapliga metoder*. 3rd ed. Stockholm: Liber.

Campo, K., Gijsbrechts, E. and Nisol, P. (2003). The impact of retailer stockouts on whether, how much, and what to buy. *International Journal of Research in Marketing*, 20(3), pp.273–286. doi:https://doi.org/10.1016/s0167-8116(03)00037-5.

Chandon, P., Wansink, B. and Laurent, G. (2000). A Benefit Congruency Framework of Sales Promotion Effectiveness. *Journal of Marketing*, [online] 64(4), pp.65–81. doi:https://doi.org/10.2307/3203478.

Corsten, D. and Gruen, T. (2003). Desperately seeking shelf availability: an examination of the extent, the causes, and the efforts to address retail out‐of‐stocks. *International Journal of Retail & Distribution Management*, 31(12), pp.605–617. doi:https://doi.org/10.1108/09590550310507731.

Crowley, A.E., Spangenberg, E.R. and Hughes, K.R. (1992). Measuring the Hedonic and Utilitarian Dimensions of Attitudes toward Product Categories. *Marketing Letters*, [online] 3(3), pp.239–249. doi:https://doi.org/10.2307/40216261.

DelVecchio, D. (2005). Deal-prone consumers' response to promotion: The effects of relative and absolute promotion value. *Psychology and Marketing*, 22(5), pp.373–391. doi:https://doi.org/10.1002/mar.20064.

Denscombe, M. (2017). *The good research guide : for small-scale social research projects*. 6th ed. London: Open University Press.

Dhar, R. and Wertenbroch, K. (2000). Consumer choice between hedonic and utilitarian goods. *Journal of Marketing Research*, 37(1), pp.61–71.

Diels, J.L., Wiebach, N. and Hildebrandt, L. (2013). The impact of promotions on consumer choices and preferences in out-of-stock situations. *Journal of Retailing and Consumer Services*, 20(6), pp.587–598. doi:https://doi.org/10.1016/j.jretconser.2013.04.009.

Eliasson, A. (2013). *Kvantitativ metod från början*. 3rd ed. Lund: Studentlitteratur.

Emmelhainz, M.A., Stock, J.R. and Emmelhainz, L.W. (1991). Consumer Responses to Retail Stock-Outs. *Journal of Retailing*, 67(2).

Fitzsimons, G.J. (2000). Consumer Response to Stockouts. *Journal of Consumer Research*, 27(2), pp.249–266. doi:https://doi.org/10.1086/314323.

Gaston-Breton, C. and Duque, L.C. (2015). Utilitarian and hedonic promotional appeals of 99-ending prices. *European Journal of Marketing*, 49(1/2), pp.212–237. doi:https://doi.org/10.1108/ejm-09-2012-0556.

Hirschman, E.C. and Holbrook, M.B. (1982). Hedonic Consumption: Emerging Concepts, Methods and Propositions. *Journal of Marketing*, 46(3), pp.92–101.

Huang, L. and Lu, J. (2016). The Impact of Package Color and the Nutrition Content Labels on the Perception of Food Healthiness and Purchase Intention. *Journal of Food Products Marketing*, 22(2), pp.191–218. doi:https://doi.org/10.1080/10454446.2014.1000434.

HUI Research (2024). *Coop Retailer Profile 2024*. *https://www.dlf.se/rapporter/dlf-kundprofiler---coop-sverige*. DLF.

Kahneman, D. and Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, [online] 47(2), pp.263–292. doi:https://doi.org/10.2307/1914185.

Kalwani, M.U. and Yim, C.K. (1992). Consumer Price and Promotion Expectations: An Experimental Study. *Journal of Marketing Research*, 29(1), pp.90–100. doi:https://doi.org/10.2307/3172495.

Khan, U. and DePaoli, A. (2024). Brand loyalty in the face of stockouts. *Journal of the Academy of Marketing Science*, [online] 52, pp.44–74. doi:https://doi.org/10.1007/s11747-023-00924-8.

Kivetz, R. and Zheng, Y. (2017). The effects of promotions on hedonic versus utilitarian purchases. *Journal of Consumer Psychology*, 27(1), pp.59–68.

Krishna, A., Currim, I.S. and Shoemaker, R.W. (1991). Consumer Perceptions of Promotional Activity. *Journal of Marketing*, 55(2), pp.4–16. doi:https://doi.org/10.2307/1252233.

Kuikka, A. and Laukkanen, T. (2012). Brand loyalty and the role of hedonic value. *Journal of Product & Brand Management*, 21(7), pp.529–537. doi:https://doi.org/10.1108/10610421211276277.

Lerner, J.S., Li, Y., Valdesolo, P. and Kassam, K.S. (2015). Emotion and Decision Making. *Annual Review of Psychology*, 66, pp.799–823. doi:https://doi.org/10.1146/annurev-psych-010213-115043.

Levy, M., Weitz, B.A. and Grewal, D. (2019). *Retailing management*. 10th ed. New York : McGraw-Hill Education.

Mazur, U. (2025). *Average Promotions in Swedish Grocery Retailing*. [Telephone conversation].

Newbold, P., Carlson, W.L. and Thorne, B.M. (2022). *Statistics for business and economics*. Harlow, England Pearson.

O'Curry, S. and Strahilevitz, M. (2001). Probability and Mode of Acquisition Effects on Choices Between Hedonic and Utilitarian Options. *Marketing Letters*, 12(1), pp.37–49. doi:https://doi.org/10.1023/a:1008115902904.

Okada, E.M. (2005). Justification Effects on Consumer Choice of Hedonic and Utilitarian Goods. *Journal of Marketing Research*, [online] 42(1), pp.43–53. doi:https://doi.org/10.2307/30162355.

Otterbring, T., Folwarczny, M. and Gidlöf, K. (2023). Hunger effects on option quality for hedonic and utilitarian food products. *Food Quality and Preference*, 103. doi:https://doi.org/10.1016/j.foodqual.2022.104693.

Pallant, J. (2020). *SPSS survival manual : A step by step guide to data analysis using IBM SPSS*. 7th ed. London : Open University Press, McGraw-Hill.

Sloot, L.M., Verhoef, P.C. and Franses, P.H. (2005). The impact of brand equity and the hedonic level of products on consumer stock-out reactions. *Journal of Retailing*, 81(1), pp.15–34. doi:https://doi.org/10.1016/j.jretai.2005.01.001.

Söderlund, M. (2018). *Experiments In Marketing.* Studentlitteratur AB Lund.

Swedish Competition Authority (2024). *Summary of the Swedish Competition Authority's inquiry into the food industry 2023–2024*. *Konkurrensverket.se*.

Talukdar, D., Gauri, D.K. and Grewal, D. (2010). An Empirical Analysis of the Extreme Cherry Picking Behavior of Consumers in the Frequently Purchased Goods Market. *Journal of Retailing*, 86(4), pp.336–354. doi:https://doi.org/10.1016/j.jretai.2010.06.002.

Taylor, J.C. and Fawcett, S.E. (2001). Retail on-shelf performance of advertised items: An assessment of supply chain effectiveness at the point of purchase. *Journal of Business Logistics*, 22(1), pp.73–90.

Van Heerde, H.J., Gupta, S. and Wittink, D.R. (2003). Is 75% of the Sales Promotion Bump Due to Brand Switching? No, Only 33% Is. *Journal of Marketing Research*, [online] 40(4), pp.481–491. doi:https://doi.org/10.2307/30038880.

Verhoef, P.C. and Sloot, L.M. (2010). Out-of-Stock: Reactions, Antecedents, Management Solutions, and a Future Perspective. In: M. Krafft and M.K. Mantrala, eds., *Retailing in the 21st Century*. Berlin, Heidelberg: Springer Berlin Heidelberg, pp.239–253. doi:https://doi.org/10.1007/978-3-540-72003-4.

Voss, K.E., Spangenberg, E.R. and Grohmann, B. (2003). Measuring the Hedonic and Utilitarian Dimensions of Consumer Attitude. *Journal of Marketing Research*, [online] 40(3), pp.310–320. doi:https://doi.org/10.2307/30038861.

Xia, L. and Monroe, K.B. (2009). The influence of pre‐purchase goals on consumers' perceptions of price promotions. *International Journal of Retail & Distribution Management*, 37(8), pp.680–694. doi:https://doi.org/10.1108/09590550910966187.

Zinn, W. and Liu, P.C. (2001). CONSUMER RESPONSE TO RETAIL STOCKOUTS. *Journal of Business Logistics*, 22(1), pp.49–71. doi:https://doi.org/10.1002/j.2158-1592.2001.tb00159.x.

Zinn, W. and Liu, P.C. (2008). A COMPARISON OF ACTUAL AND INTENDED CONSUMER BEHAVIOR IN RESPONSE TO RETAIL STOCKOUTS. *Journal of Business Logistics*, 29(2), pp.141–159. doi:https://doi.org/10.1002/j.2158-1592.2008.tb00090.x.

7 Appendices

Appendix 1: Summary Pre-Test Results

Product Type	Product	Scale	Mean	Mean Difference	Significance
Hedonic	Chocolate	Hedonic	6.15	3.732	<.001
		Utilitarian	2.41		
	Ice Cream	Hedonic	6.37	3.951	<.001
		Utilitarian	2.41		
	Potato Chips	Hedonic	6.05	4.024	<.001
		Utilitarian	2.02		
	Bag of Candy	Hedonic	6.37	4.512	<.001
		Utilitarian	1.85		
Utilitarian	Pasta	Hedonic	3.54	1.317	<.001
		Utilitarian	4.85		
	Rice	Hedonic	2.71	3.244	<.001
		Utilitarian	5.95		
	Crispbread	Hedonic	3.34	1.073	.008
		Utilitarian	4.41		
	Yoghurt	Hedonic	4.05	.732	.076
		Utilitarian	4.78		

Appendix 2: MANOVA Results

OOS Reaction	Independent Variable	Type	*N*	Mean (SD)	mean difference
Brand Switch	Stockout type	Regular	110	5.33 (1.31)	1.19
		Promotion	112	4.13 (1.81)	
	Product Type	Hedonic	110	4.44 (1.77)	.573
		Utilitarian	112	5.01 (1.56)	
Item Switch	Stockout type	Regular	110	4.98 (1.65)	1.08
		Promotion	112	3.90 (1.68)	
	Product Type	Hedonic	110	4.55 (1.69)	.215
		Utilitarian	112	4.33 (1.79)	
Store Switch	Stockout type	Regular	110	3.26 (1.97)	.504
		Promotion	112	3.77 (2.12)	
	Product Type	Hedonic	110	3.36 (2.03)	.306
		Utilitarian	112	3.67 (2.07)	
Postponement	Stockout type	Regular	110	3.55 (1.80)	.713
		Promotion	112	4.27 (1.82)	
	Product Type	Hedonic	110	3.67 (1.83)	.479
		Utilitarian	112	4.15 (1.82)	
Cancellation	Stockout type	Regular	110	2.79 (1.66)	.713
		Promotion	112	3.50 (1.79)	
	Product Type	Hedonic	110	3.46 (1.80)	.624
		Utilitarian	112	2.84 (1.67)	

Mean Differences Stockout Type & Product Type

Dependent Variable	Levene's Test (F)	df_1, df_2	p-value
Brand Switch	8.870	3, 218	< .001
Item Switch	1.157	3, 218	.327
Store Switch	1.111	3, 218	.346
Postponement	0.234	3, 218	.872
Cancellation	1.470	3, 218	.224

Levene's Test of Equality fo Error Variances

Dependent Variable	Factor	df_1, df_2	F	p-value	partial η^2
Brand Switch	Stockout type	1, 218	32.11	< .001	.128
	Product type	1, 218	7.22	.008	.032
	Interaction	1, 218	0.31	.579	.001
Item Switch	Stockout type	1, 218	23.50	< .001	.097
	Product type	1, 218	1.02	.314	.005
	Interaction	1, 218	0.02	.898	.000
Store Switch	Stockout type	1, 218	3.39	.067	.015
	Product type	1, 218	1.27	.261	.006
	Interaction	1, 218	0.49	.487	.002
Postponement	Stockout type	1, 218	8.84	.003	.039
	Product type	1, 218	4.03	.046	.018
	Interaction	1, 218	0.92	.339	.004
Cancellation	Stockout type	1, 218	9.41	.002	.041
	Product type	1, 218	7.31	.007	.032
	Interaction	1, 218	0.27	.604	.001

Test of Between Subject Effects

Appendix 3: AI Disclaimer

The AI tool ChatGPT was used during the writing of this thesis to enhance the clarity, coherence, and overall language quality. The use of the tool was confined to language-level refinement, such as rephrasing sentences, improving sentence structure, and suggesting synonyms to avoid unnecessary repetition. ChatGPT also provided light support in reorganizing existing arguments to ensure logical flow and readability. It was not used to find sources, generate original ideas, or conduct research. All academic interpretations, theoretical contributions, and research analyses are the original work of the authors.

Furthermore, only using AI to improve writing also allowed for greater focus on the substance and originality of the thesis. By adopting this approach, we also upheld both the academic integrity and the critical thinking that academic research demands, qualities that AI itself cannot replicate.

However, it is important to bear in mind that AI tools are not always dependable and may produce inaccuracies, such as providing unreliable sources. Other potential risks include the possibility of AI altering the meaning of sentences. To mitigate this, the improved language suggested by AI was carefully examined to ensure that the facts and arguments remained intact. In summary, ChatGPT has been a useful tool in this process, but has been used with caution to avoid the potential risks associated with AI.