

# **SHOP 'TILL THE FEES DROP**

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**A QUANTITATIVE STUDY ON STUDENTS' PERCEPTIONS AND  
ATTITUDES TOWARDS DELIVERY FEES**

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## **Shop 'till The Fees Drop: A quantitative study on students' perceptions and attitudes towards delivery fees**

### **Abstract:**

Due to the rapid technological developments in E-commerce, an increasing amount of the Swedish population resorts to online shopping for their necessities. Thus, the Swedish online grocery retail industry has established an online presence, leading to additional shipping and handling costs. This thesis investigates what impacts Swedish students' perceptions and attitudes towards delivery fees as they are price sensitive and frequent online shoppers. Furthermore, this thesis aims to empirically investigate the effects of different delivery fee pricing strategies' influence on students' attitudes and perceptions. A quantitative study is conducted using a 2 (Price Partitioning) x 2 (Amount Paid for Groceries) matrix study where students' Attitude Towards the Offer and Price Fairness Perception with regards to delivery fees are investigated. The study is made through a questionnaire distributed digitally and physically to Swedish students. The results indicate that students' Attitude towards the Offer and Price Fairness Perception is higher when a Non-Partitioned Pricing strategy is used. Similarly, attitudes and perceptions are higher when the relative size of the delivery fee compared to the Amount Paid for Groceries is smaller. Based on the results, implications and suggestions for future research are discussed.

### **Key words:**

Delivery fees, Online Grocery Retail Industry, Mental Accounting Theory, Price Partitioning, Amount Paid for Groceries, Attitude Towards the Offer, Price Fairness Perception

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## Definitions

**Delivery Fee Pricing Strategy:** The strategy an online retailer opts for to cover shipping and handling costs. Most common strategies include “free shipping” (non-partitioned pricing), partitioned pricing (Gümüş et al., 2013), and threshold shipping (Huang & Cheng, 2015).

**Price Partitioning:** The joint term for the choice between Partitioned and Non-Partitioned Pricing used in this thesis.

**Partitioned Pricing:** A delivery fee pricing strategy involving splitting the total price of a purchase into the base product price and other surcharges such as shipping (Barker & Brau, 2020).

**Non-Partitioned Pricing:** A delivery fee pricing strategy in which the base price of the products is higher to compensate for “free shipping” (Yao & Zhang, 2012).

**Amount Paid for Groceries:** The base price of the products, excluding any other surcharges (Greenleaf et al., 2016).

**Attitude Towards the Offer:** The attitude consumers have towards a presented offer (Mao, 2016).

**Price Fairness Perception:** The extent to which consumers consider the presented price as fair (Campbell, 2007).

**Price Familiarity:** The extent to which consumers are experienced with the typical prices on the market (Habel et al., 2016).

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# 1. Introduction

*In recent years, Swedish consumption has increased along with the rest of the world (Statistiska Centralbyrån, 2022). The saying to “shop ‘till you drop” is typically used to mirror this behavior. As an increasing amount of shopping is done online (Statista, 2022), however, the nature of shopping has changed. In this thesis, consumer perceptions and attitudes towards delivery fees are investigated to see whether delivery fees impact consumer’s willingness to shop ‘till they drop.*

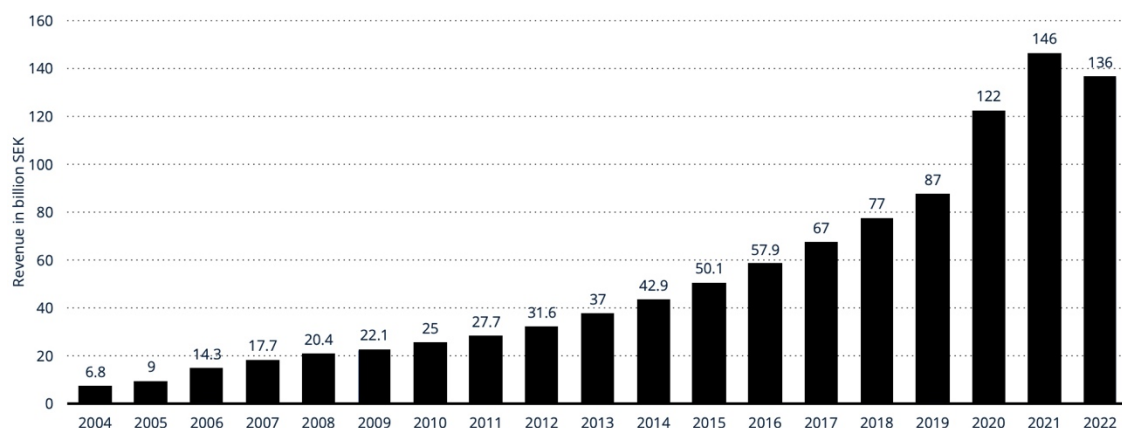
*In this section, a general background of the Swedish online grocery retail industry and economic situation is outlined. The problem area is also introduced before addressing the research purpose and questions with their implications and delimitations.*

## 1.1. Background

### 1.1.1. Swedish E-Commerce

Out of Sweden’s population of 10.52 million (Statistiska Centralbyrån, 2022), 96% report having bought something online within the last year (Postnord, 2021). In fact, Sweden has the highest penetration rate of online shopping in Europe (International Trade Administration, 2022). Swedish E-commerce has rapidly grown in the last few years, especially in 2020 with a 40% growth rate, likely due to the global COVID-19 pandemic (Statista, 2022). The industry grew additionally by 20% in 2021, then worth 146 billion SEK (Postnord, 2021). Although a wide age group reports buying goods online, the main demographic centers around people aged between 16-44 years old. There is generally an even split between men and women (Statista, 2022).

**Figure 1.** Annual Revenue of Swedish E-Commerce (BSEK)



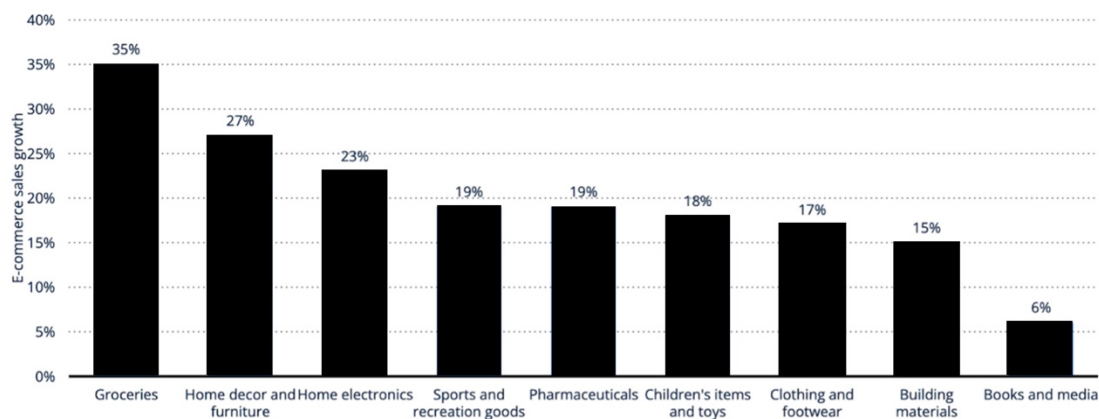
Source: (Statista, 2022)



## Swedish Grocery E-Commerce

Due to the pandemic, 63% of respondents in data collected by Statista (2022) reports switching to online grocery shopping in 2021. As of 2021, the Swedish grocery E-commerce accounted for 19 billion SEK in revenue, making it the second largest product category in Swedish E-commerce after home electronics. Furthermore, online grocery shopping is the fastest growing product segment, growing by 35% in 2021 (Statista, 2022). It thus accounts for a total of 7% of the total Swedish grocery retail.

**Figure 2.** B2C E-Commerce Sales Growth in Sweden in 2021, by Category (%)



Source: (Statista, 2022)

### 1.1.2. Swedish E-Commerce and Economic Uncertainty

During 2020, much of the E-commerce growth was an effect of the global COVID-19 pandemic (Postnord, 2022). As restrictions were enforced, people resorted to online shopping for most commodities to avoid physical stores. This resulted in a boom in online sales in Sweden, a growth which was expected to continue through 2022 and into 2023. However, 2022 became a year with vast economic uncertainty painted by war, inflation, and a recession. This resulted in the first year to date of negative growth in Swedish E-commerce history. The negative growth of -7% is likely due to several factors, but most can be boiled down to households' depreciating purchasing power (Postnord, 2022).

### Swedish Grocery E-Commerce and Economic Uncertainty

During 2022, Swedish food prices increased with 20% (Postnord, 2022). Thus, households have had to become more vary of their consumption choices. The report by Postnord (2022) further states that it is common for individuals to return to what is comfortable during times of uncertainty. There has consequently been a surge of online consumers returning to physical grocery stores throughout 2022. As a result, the grocery segment of E-commerce was hit with a negative growth of -17% (Postnord, 2022).

### 1.1.3. Background on Delivery Fees

With online retailing, there are unavoidable additional fees related to shipping and handling. Despite this, there are increasing expectations for free delivery (Barker & Brau, 2020), and 77% of Swedish E-shoppers view free shipping as one of the most important aspects of delivery (Postnord, 2022). Moreover, one of the most common reasons for Swedish consumers canceling their online purchases is due to delivery fees being perceived as too high (Postnord, 2021).

Amongst researchers, there is general consensus that delivery fee strategies are amongst the most important to consider when acquiring online consumers. Gümüş et al. (2013) outlines delivery fees as *the most* important attribute in shaping consumer preferences. Consequently, designing delivery fee pricing strategies is considered a highly non-trivial task as it involves determining the complex relationship between delivery fees and order size (Lewis et al., 2006). These later impact both order incidence and size as shipping fee schedules tend to involve nonlinear pricing, encouraging or penalizing specific order sizes.

Where clear discrepancy in research exists, however, is determining which the ultimate delivery fee pricing strategy is. Although 80% of consumers are more likely to make a purchase when offered free shipping (Huang & Cheng, 2015), it is often an unrealistic alternative for retailers. To avoid losing customers to high delivery fees, retailers have invented multiple delivery fee pricing strategies meant to entice customers. Alternatives, besides the traditional fixed delivery fee, include threshold shipping and fees dependent on order size (Leng & Becerril-Arreola, 2010). Others opt for more innovative pricing strategies, making individual products more expensive to compensate for the increased cost of delivery (Yao & Zhang, 2012).

## 1.2. Problem Area

Although the online grocery retail industry has flourished in the past, it is facing increasingly large challenges with regards to attracting and retaining customers. When shopping for groceries, 74% of households rely heavily on habits to decide where to shop (Postnord, 2022). These habits are amplified as the economic climate stays uncertain, making it increasingly difficult for retailers to get customers to discover alternative shopping channels.

For 2023, companies report through Postnord (2022) to aim primarily on increasing customer loyalty and setting prices appropriately. As companies navigate how to set optimal pricing to drive loyalty, managing shipping and handling costs becomes of central importance. These costs can account for more than 30% of the total costs in the grocery sector (Gümüş et al., 2013), making delivery fee pricing strategies increasingly critical.

The most price-sensitive consumers, according to Postnord (2022), are the younger generations. Young adults have less experience coping with economic fluctuations and fewer stable income sources, whilst also earning less than the average adult (Furnham, 1999). These generations do, however, shop online frequently, making them interesting subjects for the study (Postnord, 2022). Research on delivery fee pricing strategies have previously been directed towards the general market and seldom towards those who are impacted the most. Therefore, the online grocery retail industry and students are the focus for this thesis.

### 1.3. Research Purpose and Research Question

This thesis aims to empirically investigate the effects of different delivery fee pricing strategies' influence on students' attitudes and perceptions. As outlined above, this industry is particularly dependent on shipping and handling costs, but limited research has been conducted to conclude which delivery fee pricing strategy is perceived positively in this particular setting. Hence, this thesis is relevant within the field of marketing as it aims to further understand consumer behavior with regards to online grocery shopping. This thesis investigates said issues from an empirical standpoint by conducting a virtual questionnaire.<sup>1</sup>

The research questions used to address the aim of this study are as follows:

- 1) *To what extent does different types of delivery fee pricing strategies influence students' attitudes and perceptions of fairness?*
- 2) *To what extent does different levels of amount paid for groceries influence how students perceive different types of delivery fee pricing strategies?*

### 1.4. Delimitations

The empirical study in this thesis will be geographically limited to Sweden. As the market of interest is the Swedish online grocery retail industry, people outside of the country are not of value to the study. The time and resource restrictions of writing a bachelor thesis is further motivation to limit the scope of our research.

We recognize that the conscious decision to limit our sample to the Swedish student population narrows the extent to which the results can be generalized. The primary

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<sup>1</sup> Empirically investigating attitudes and perceptions in relation to delivery fee pricing strategies is of critical importance as they are proven predictors of consumer purchase intentions in accordance with studies by Greenleaf et al. (2016). In this study, attitude refers to respondents' attitude towards the presented offer in the study. The term perceptions are used to explain respondents' perception of fairness in relation to the offer they are presented with. The strength of conducting a study on these variables is the possibility of providing further support for the precedent nature of the variables to consumer behavior. The weaknesses, however, is the variables lack direct connection to the chosen theoretical framework. Consequently, investigating consumers' purchasing intention could have been a preferred variable of study.

reason for such a delimitation is in regard to students' general price sensitivity and active online shopping habits (Postnord, 2022). Focusing on this group thus allows the study to isolate the attitudes and perceptions of the particular target group and thus achieve a more homogenous sample. It can, however, be noted that using another target group comprising of different demographics could have resulted in stronger results.

Furthermore, the collection of responses in the empirical study is limited to a convenience sample. Responses were collected from those easily accessible through email and in person, although we recognize that a more versatile sample of the Swedish population would have been beneficial for the explanatory power.

Although we realize that grocery stores are dependent on other players in the market when setting their delivery fee pricing strategy, we delimit this thesis to a monopolistic situation where our hypothetical player's choice of strategy is indifferent and independent from other players in the market. This conscious delimitation enables the results to be based purely from a consumer behavior perspective, and it provides simplicity for the design of our study. On the contrary, it can potentially decrease the explanatory power of the research.

In our study, we use an anonymous grocery store to delimit the subjective bias that respondents may have towards particular online grocery stores. The study thus delimits any subjective norms and preferences customers might have.

## 1.5. Expected Contribution

As of currently, there is limited research on the appropriate delivery fee pricing strategy for the online grocery retail industry. Furthermore, other prior research within the subject consists of fragmented and divided conclusions, providing limited guidance in terms of which delivery fee pricing strategy to use. Previous studies have also primarily focused on financial performance as a measure of delivery fee pricing strategies' success. With this study, we hope to not only contribute to the existing research and expand it to cover the online grocery retail industry, but also to introduce other measures as determinants of delivery fee pricing strategies. By including consumer attitude and perception measures, we hope to additionally clarify how delivery fee strategies impact consumer behavior. In practice, this thesis hopes to provide guidance for online grocery retailers regarding which delivery fee pricing strategy to use and what impacts students' attitudes and perceptions.

## 2. Literature Review and Theoretical Framework

*To determine what impacts attitudes and perceptions towards delivery fees in the Swedish online grocery retail industry, research was conducted on previous studies in the field. The following section contains a literature review of relevant previous research, as well as an outline of Mental Accounting Theory, the main theoretical framework applied throughout this thesis. To gather research, the SSE library and the database Scopus Review were used. Literature was found with the help of keywords such as: \*Delivery fees, \*Free shipping, \*Online grocery retail industry, \*Mental Accounting Theory, \*Partitioned Pricing, \*Price Familiarity.*

### 2.1. Previous Studies on Delivery Fees

One of the earliest delivery fee strategies discussed, as online shopping emerged, was maintaining free shipping on all orders. Gümüş et al. (2013) introduced the “zero price effect” claiming that lowering the price to zero entices customers more than an equal drop in price between two price levels. Thus, it can be assumed that free shipping is highly correlated with purchase intention, something multiple articles confirmed. Ahmad and Callow (2018) claimed free shipping is more appealing to the customer than any other discounted price, and most customers prefer free shipping over free returns (Huang & Cheng, 2015). Free shipping further leads to an increased amount of positive product review ratings (Bansal & Muzatko, 2021). There are, however, significant risks with opting for free shipping. Although the strategy is effective for generating sales, the increased costs become highly unprofitable to online retailers (Lewis et al., 2006). As the additional shipping and handling costs are unavoidable, companies will have to increase the base price of groceries when offering free shipping to cover the expenses, often referred to as Non-Partitioned Pricing (Yao & Zhang, 2012). Frischmann et al. (2012) echoed the same point, stating that it is unfeasible to offer free delivery without a higher base product price.

As free shipping has several downsides, companies have searched for alternative strategies to cover the additional shipping and handling expenses. When investigating delivery fee strategies in E-commerce, several papers discussed the value of Partitioned Pricing in the retail setting. Partitioned Pricing involves splitting the total price of a purchase into the base product price and other potential surcharges that follow, most often shipping and handling surcharges (Barker & Brau, 2020). As Gümüş et al. (2013) pointed out, there are contrasting results from previous studies investigating Partitioned Pricing as a delivery fee pricing strategy. Companies using this strategy are often able to charge higher gross prices by increasing the Partitioned delivery fee more than they would otherwise increase product price to maintain free shipping, something leading to higher profits for the companies (Frischmann et al., 2012). Gümüş et al. (2013) echoed

the notion of higher profitability by proving that the total price becomes higher through Partitioned Pricing, despite the grocery base price being lower. This particular effect has also been proven in a grocery store setting (Gil et al., 2020). There are, however, negative mediating effects of surcharge magnitude on the effects of Partitioned Pricing as surcharges that are viewed as too high negatively affect Price Fairness Perception (Greenleaf et al., 2016). Meanwhile, Dertwinkel-Kalt et al. (2020) claimed that Partitioned Pricing has no significant effect on demand.

Another delivery fee pricing strategy discussed increasingly in recent years is threshold shipping. Threshold shipping entails free shipping over a certain order amount, but anything below is charged with a fixed shipping fee. This strategy can be an effective way to increase the average order size and profit (Han et al., 2022). Huang and Cheng (2015) and Tsai and Chang (2022) all supported this by proving that consumers are more likely to add additional items to their basket when threshold shipping is present, increasing the total order amount. Therefore, it is a common way to acquire customers with large order sizes (Leng & Becerril-Arreola, 2010). There are, however, clear downsides with threshold shipping. If a threshold is too high, consumers are less incentivized to add additional items to their order (Han et al., 2022) and it can increase the risk that customers abandon their baskets (Huang et al., 2019). In contrast, setting a threshold that is too low can impose high operational and shipping expenses on the company and hence also become a risk (Leng & Becerril-Arreola, 2010). Threshold shipping could also lead to consumers making riskier purchases, and thus making an increased number of strategic returns (Huang et al., 2019).

Another, less popular, delivery fee pricing strategy is partial shipping fees, as outlined by Tsai and Chang (2022). This strategy includes, rather than one threshold, three different thresholds where each one lowers the shipping fee incrementally. It incentivizes consumers to spend more, although it is rather complex to set up. Moreover, Leng and Becerril-Arreola (2010) introduced a delivery fee pricing strategy that increases with order size but drew the conclusion that it is ineffective for both consumer's willingness to spend and profitability for the company in question.

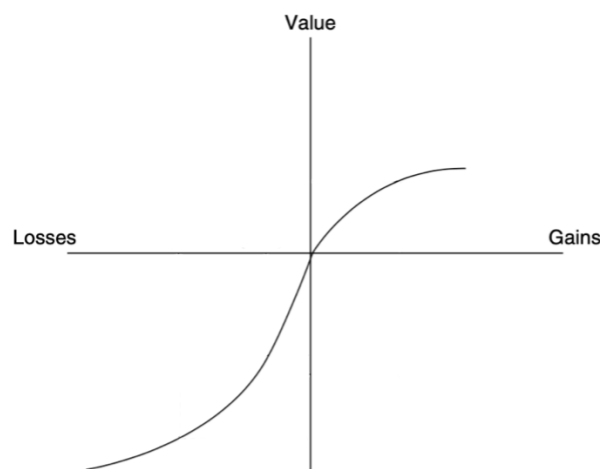
## 2.2. Mental Accounting Theory

Predicting consumer preferences towards delivery fee pricing strategies requires an understanding of their mental processes. To do this, Kahneman and Tversky (1984) sketched a theory that was further developed by Thaler (1985): Mental Accounting Theory. Mental Accounting Theory deviates from classical economic theory as it diverges from the rationality assumption, instead basing consumers' decision-making on constructed mental accounts (Kahneman & Tversky, 1984). These mental accounts remove the fungible value from currency, and instead value money based on its intended use.

### 2.2.1. Gains and Losses

When consumers make decisions, value is perceived through gains and losses relative to a reference point (Thaler, 1985). Thus, consumers tend to pay attention to sunk costs, even when inappropriate, whilst disregarding crucial opportunity costs in comparison to out-of-pocket expenses (Thaler, 1985). This creates a complex value function that differs from any rationality assumed in classical economic theory. Instead, the function is assumed to be concave for gains and convex for losses.

**Figure 3.** Visualization of Mental Accounting Theory's value curve of gains and losses



Source: Thaler (1985)

The convexity of the value curve for losses entails risk-seeking behavior and individuals tend to gamble on sure losses when dealing with improbable gains. In contrast, people are risk-averse when dealing with gains due to their concave nature, and generally prefer a smaller guaranteed win over a gamble with favorable odds (Kahneman & Tversky, 1984). Thaler (1985) expanded on this view of gains and presents the compounding rule for mental accounting. Individuals tend to be happier with a gain split into multiple parts, and it is thus desirable to segregate gains as much as possible. On the contrary, it is recommended to integrate losses to a maximized extent.

Thaler's (1985) argument regarding the presentation of gains and losses could be applied to delivery fee pricing strategies. As the perception of the offer is impacted by the way in which it is presented, it is reasonable to assume that presentation of the delivery fee is of importance to attitudes and perceptions. Thus, a logical strategy should be to integrate delivery fees with the price of the groceries as the presentation is more similarly in line with the explanation of gains in Mental Accounting (Kahneman & Tversky, 1984). This is due to the fact that the delivery fee is then included in the same mental compartment as the Amount Paid for Groceries rather than treated as a

separate mental account. In delivery fee pricing strategy terms, integrating delivery fees in the price is referred to as Non-Partitioned Pricing, while the opposite is referred to as Partitioned Pricing (Gümüő et al., 2013). For example, if a delivery fee pricing strategy is arranged according to a Partitioned Pricing scheme, the offer would be presented with the Amount Paid for Groceries and delivery fee separately. This would, according to the compounding rule (Thaler, 1985), be less efficient than a strategy where the delivery fee is integrated with the sum.

Thus, measuring consumer Attitude Towards the Offer and Price Fairness Perception, we propose the following hypotheses<sup>2</sup>:

**H1a:** Compared to Partitioned Pricing of delivery fees, Non-Partitioned Pricing of delivery fees will be associated with more positive Attitude Towards the Offer

**H1b:** Compared to Partitioned Pricing of delivery fees, Non-Partitioned Pricing of delivery fees will be associated with more positive Price Fairness Perception

#### 2.2.2. Mental Accounts

The psychological perceptions of value in terms of gains and losses are closely related to constructed compartments, a concept which is also introduced in Mental Accounting Theory. When faced with evaluating decisions, Thaler (1985) theorized that consumers group expenditures into categories and highlights the use of temporal constraints to facilitate decision-making. He further explained that these categories can be seen as accounts that are created inside the mind of consumers. Kahneman and Tversky (1984) clarified that mental accounts can be of three types: minimal, topical, or comprehensive. A minimal account only considers the differences, as opposed to shared features, between options in terms of gains or losses. The implications from a minimal account perspective are hence the financial consequence, with no other aspects considered (Kahneman & Tversky, 1984). Topical accounts, on the contrary, relates the displayed alternatives to a reference level that is determined by the context in which the choice arises. Finally, Kahneman and Tversky (1984) introduced comprehensive accounts, in which gains and losses are evaluated in relation to the entire context. For example, options could be evaluated based on savings and monthly expenses (Nguyen et al., 2019).

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<sup>2</sup> One may question the choice to investigate attitudes and perceptions rather than preferences with regards to delivery fee pricing strategies. According to the Theory of Reasoned Action (Ajzen, 1991), there is proven connection between attitudes/perceptions and consumer intention and behavior. Thus, investigating attitudes and perceptions could build further foundation to understand consumer decision making. Furthermore, attitudes and perceptions are proven to correlate (Kahneman et al., 1986).



After thorough research, Kahneman and Tversky (1984) concluded that topical accounts are the most important for consumer behavior as they guide consumer evaluations in relative rather than absolute terms. While a gain or loss of an absolute amount may be equal in respect to minimal and comprehensive accounts, topical accounts include other factors that potentially make the consumers evaluate the options differently. As an example, Kahneman and Tversky (1984) examined whether the original price of a product affected consumers' willingness to visit another store for a rebate. In both cases, the rebate was \$5, however, in one case the original price was \$125 and in the other it was \$15. The results indicated that the interest in saving \$5 on a \$15 purchase is significantly larger than on a \$125 purchase, confirming that surrounding circumstances have a significant impact on consumer decision-making.

Thus, relating to the notion of consumer decision-making and topical accounts, we predict that consumers will act differently based on the circumstances surrounding the delivery fee. As the example presented by Kahneman and Tversky (1984) describes, we hypothesize that the absolute delivery fee sum will be evaluated differently based on the Amount Paid for Groceries. Consequently, we believe that Attitude Towards the Offer and Price Fairness Perceptions will increase when the Amount Paid for Groceries is higher, making the delivery fee a smaller proportion of the total price. Our proposed hypotheses are as follows<sup>3</sup>:

**H2a:** When the difference between the delivery fee and Amount Paid for Groceries is smaller, the offer will be associated with a more positive Attitude Towards the Offer compared to when the difference is greater.

**H2b:** When the difference between the delivery fee and Amount Paid for Groceries is smaller, the offer will be associated with a more positive Price Fairness Perception compared to when the difference is greater.

### 2.2.3. Price Partitioning and Amount Paid for Groceries in Interaction

To determine the appropriate delivery fee pricing strategy, Price Partitioning and Amount Paid for Groceries could be investigated jointly as an interaction effect. In other words, the interaction effect between the two variables could indicate the appropriate delivery fee pricing strategy. In a similar study, Ahmad and Callow (2018) tested how a “dollar off” rebate or free shipping strategy interacts with the listing price of the product. They found that free shipping is more efficient than a “dollar off” promotion, and that the effect is amplified in the setting where a lower listing price is used.

As previously described in relation to Mental Accounting Theory, we hypothesize that Non-Partitioned Pricing will be preferred over Partitioned Pricing, and that a higher

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<sup>3</sup> See footnote 2 for an explanation and reasoning regarding the choice of variables for the study

Amount Paid for Groceries will be preferred over a lower sum. The Amount Paid for Groceries could, additionally, amplify the effects of Price Partitioning, creating an interaction effect between the variables. Consequently, the preferred alternative amongst consumers should be the combination of Non-Partitioned Pricing and a higher Amount Paid for Groceries. This is further supported by Kahneman and Tversky's (1984) theory of gains and losses. As the delivery fee is integrated with the Amount Paid for Groceries, it becomes less explicit for the consumer and is thus not evaluated as negatively. Furthermore, a higher Amount Paid for Groceries causes the integrated delivery fee to be seen as a smaller loss in the context, creating a synergetic positive effect. Thus, measuring Attitude Towards the Offer and Price Fairness Perception, we hypothesize the following<sup>4</sup>:

**H3a:** The interaction between Non-Partitioned Pricing and a higher Amount Paid for Groceries has a positive effect on Attitude Towards the Offer

**H3b:** The interaction between Non-Partitioned Pricing and a higher Amount Paid for Groceries has a positive effect on Price Fairness Perception

#### 2.2.4. Previous Research on Mental Accounting and Delivery Fees

Mental Accounting Theory has previously been used to theorize about consumer preferences for delivery fees. Nguyen et al. (2019) investigated consumer preferences for different delivery attributes in online retailing using Mental Accounting Theory, concluding that delivery fees are the most important attribute for decision-making. They utilized mental accounting from a financial perspective, similar to Thaler (1985), but argued that Mental Accounting Theory is applicable to both the time and convenience aspects of delivery as well. They did, however, conclude financial mental accounts as the most important. Moreover, some characteristics of the consumer, such as gender, could alter the results. It was, for example, found that convenience mattered more for men than for women, and that time mattered less if you belonged to a lower-income group (Nguyen et al., 2019).

Hossain and Morgan (2006) explored the segregation of shipping and handling fees on eBay using Mental Accounting Theory to explain why customers fail to act rationally. By conducting a 2 x 2 matrix experiment, they tested consumer reactions to different levels of delivery fees and opening bids in combination. Their results indicated that a high shipping cost was effective together with a low opening bid. This behavior is rationalized by individuals having separate mental accounts for delivery fees and the good in question, prioritizing the mental account evaluating the good. Finally, their

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<sup>4</sup> See footnote 2 for an explanation and reasoning regarding the choice of variables for the study

results showed that the relative importance of the accounts is dependent on the item sold, indicating decision-making based on topical accounts.

## 2.3. Price Familiarity

As mentioned in Section 1.1.1. Swedish E-commerce, 63% of Swedish citizens report shopping groceries online in 2021 (Statista, 2022). As delivery fees are relatively consistent across different online grocers, consumers have the potential to familiarize themselves with prices online over time. Thus, consumers' familiarity with delivery fees in the industry could have an effect on their Attitude Towards the Offer and Price Fairness Perception.

### 2.3.1. Price Familiarity in Previous Literature

In a study by Ahmed and Callow (2018), the effects of price discounts compared to free shipping on the variable offer evaluation were investigated. A significant effect between the variables were found, although with online shopping experience positively moderating the relationship. It was reasoned that as experienced shoppers are more accustomed to additional fees, they are more likely to accept delivery fees as a normal part of the shopping experience compared to those unfamiliar with shopping online (Ahmad & Callow, 2018).

Barker and Brau (2020) further theorized regarding Price Familiarity as a moderator. They concluded that the effect of Price Partitioning on perceived quality of a product is negatively moderated by online shopping experience.

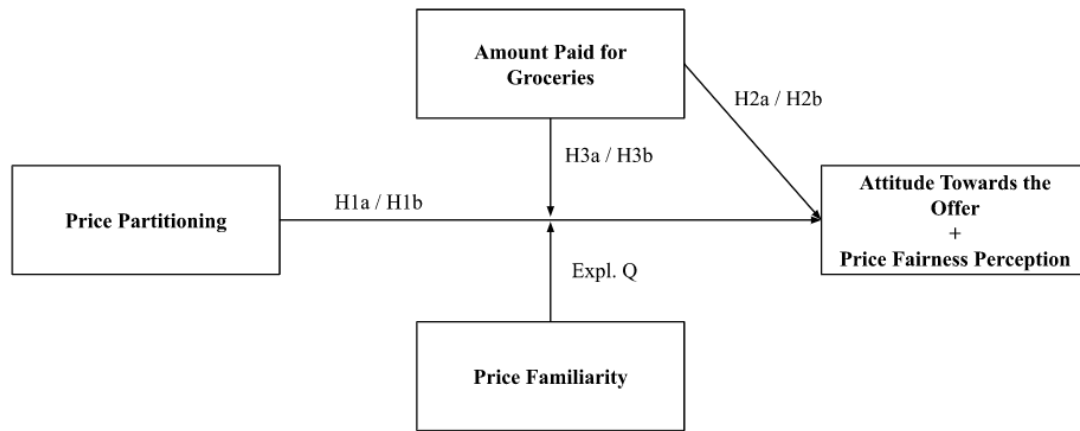
### 2.3.2. Explorative Question

As online experience is a precedent of Price Familiarity (Ahmed & Callow, 2018) and several studies have empirically supported a moderating effect of experience on Price Partitioning, there is a possibility of a similar interaction effect in this study. The direction of said interacting effect, however, is unclear, and a potential interaction is thus explored as a final section of this study.

## 2.4. Theoretical Model

To summarize the theoretical framework underlying the study of this thesis, a visualization of variables and corresponding hypotheses can be viewed in Figure 4.

**Figure 4.** Illustration of the theoretical framework and corresponding hypotheses



**Note:** All arrows indicate a positive influence on the dependent variables Attitude Towards the Offer and Price Fairness Perception

### 3. Methodology

*In this section, the chosen scientific approach for understanding the research questions is outlined. The methodology behind data collection, design, and analysis is reviewed. Furthermore, this section provides an explanation of measures taken to maximize reliability and validity.*

#### 3.1. Scientific Approach

This thesis is guided by the epistemological position of positivism. This position is informed by an objectivist ontological position, holding the assumption that an objective, external reality exists. Such a reality is measurable, and the study is thus conducted using a deductive approach (Bell et al., 2022). The main influential factor for the choice of method stems from prior research reviewed in Section 2. Literature Review and Theoretical Framework. Central studies within delivery fee research have been conducted using quantitative methods, inspiring this study to be executed in a similar manner.

Given that the aim of the study is to investigate the effects of different delivery fee pricing strategies with regards to students' Attitude Towards the Offer and Price Fairness Perception, an online questionnaire was deemed suitable. A questionnaire enabled the manipulation of test groups, creating differences that could then be measured. Furthermore, using questionnaires similar to previous studies enabled the use of legitimate scales. Pre-test measures were thus also possible, giving way to proper screening of the convenience sample used. It is recognized, however, that shortcomings of the chosen method include a limited understanding of students' thoughts as responses were constrained to the questions chosen by us.

##### 3.1.1. Alternative Approaches

Important to note is the availability of alternative methods for the study. Firstly, conducting a secondary quantitative analysis was deemed inappropriate as there is an absence of the key variables Attitude Towards the Offer and Price Fairness Perception in existing data. Considering the study's multivariate nature, this becomes particularly important, and existing data would not be applicable for the chosen area of study (Bell et al., 2022). Furthermore, our desired familiarity of data is considered to best be achieved using a questionnaire.

Alternatively, a qualitative analysis could be conducted. A common variant of qualitative research methods is content analysis of structured interviews. This method was ultimately ruled out as a quantitative approach works towards generalization to a higher extent (Bell et al., 2022). Furthermore, a quantitative approach using self-

completion interviews seemed the most suitable for testing any subconscious factors influencing consumer behavior. It also limits any interviewer effects affecting responses (Bell et al., 2022).

## 3.2. Pilot Studies

### 3.2.1. Focus Groups

Prior to formulating the questionnaire, two focus group sessions were performed. The purpose of the focus groups was to inform the choice of questions, variables, and alternatives for the questionnaire. Each of the two focus groups consisted of 10 students from various schools in the Stockholm region who met up in person to discuss their grocery purchases (see Appendix 1).

#### **Focus Groups Insights**

Through the focus groups, initial insights regarding online grocery purchase trends were collected, including variables such as shopping habits and general attitudes towards delivery fees. For example, discussions found that students typically make smaller frequent grocery shopping trips rather than larger bulk purchases. These insights were considered when choosing realistic Amount Paid for Groceries amounts for the questionnaire. A list of familiar online grocery stores was created to help guide the descriptive questions for the study. Furthermore, the open discussions indicated opinions regarding differences between online and physical shopping. The dialogue between the students created a clear baseline for what to be considered when creating the questionnaire. For a comprehensive account of the insights, see Appendix 1.

### 3.2.2. Pilot Questionnaire

Prior to distributing the questionnaire and collecting data, a pilot questionnaire was sent out to a number of students at the Stockholm School of Economics ( $N = 15$ ) to test the comprehension, flow, length, formulations, and relevance of questions asked. Furthermore, the pilot questionnaire acted as an additional check for errors and provided general areas of improvement. In order to get as thorough feedback as possible, our pilot respondents took the questionnaire alongside us, either in person or digitally, and provided their feedback in real time as the questionnaire was completed.

#### **Pilot Questionnaire Insights**

From the pilot questionnaire, a few alterations were made to the final questionnaire based on the given feedback. Firstly, two spelling errors were corrected. Secondly, two of the Likert scales used were reformulated to better capture the differences in each increment on the scales as respondents struggled to differentiate between available options. Finally, an estimate of the length of the questionnaire was made which could

then be inserted into the introduction of the questionnaire to provide further clarity to respondents. The questionnaire took less than 5 minutes to complete on average and was thus considered short enough to avoid any respondent fatigue (Bell et al., 2022). An additional change made post pre-study was the insertion of a bot detection as a small number of fake respondents were registered.

### 3.3. Main Study

#### 3.3.1. Questionnaire

For this thesis, the questionnaire was conducted using the questionnaire program Qualtrics. Qualtrics collects responses in an anonymous manner, ensuring GDPR guidelines are followed. The questionnaire consisted of six blocks of varying lengths: 1) Introduction; 2) GDPR; 3) Grocery Shopping Habits; 4) Attitude Towards the Offer and Price Fairness Perception (manipulation); 5) Price Familiarity; 6) Demographics and Questionnaire Evaluation (see Appendix 2 for the entire questionnaire).

The first block presented the purpose and aim of the study as well as introducing the authors. Additionally, the opportunity to enter a lottery to win 500 SEK at Mathem at the end of the questionnaire was outlined.<sup>5</sup> In block two, respondents were informed on GDPR guidelines and were asked to consent to the collection of their responses in accordance with GDPR. The respondents who did not agree to the terms were automatically redirected to the end of the questionnaire. Block three acted as a warm-up block where respondents were asked about their grocery shopping habits, including where they shop, how often, and for how much. Questions were also asked regarding what proportion of grocery shopping was done online to get an initial view of online shopping frequency.

Block four introduced the 2 x 2 matrix manipulation. The first dimension was Price Partitioning, followed by the Amount Paid for Groceries (see Section 3.4. Stimuli Development). Respondents were faced with one of four manipulated shopping scenarios and were then asked to respond to questions regarding their Attitude Towards the Offer and Price Fairness Perceptions based on the scenario presented. An attention check question was utilized as a part of the manipulation to validate their responses and to ensure that the respondent had thoroughly analyzed the scenario. At the end of the block, respondents were faced with an open-ended question where they could leave general comments regarding the manipulation. This question was the only optional question in the questionnaire, and respondents were free to skip the question if they

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<sup>5</sup> In order to ensure anonymity, respondents who wished to participate in the lottery were directed to another survey through a link. There, they could enter their email, ensuring that their email address could not be linked to their responses in the study.

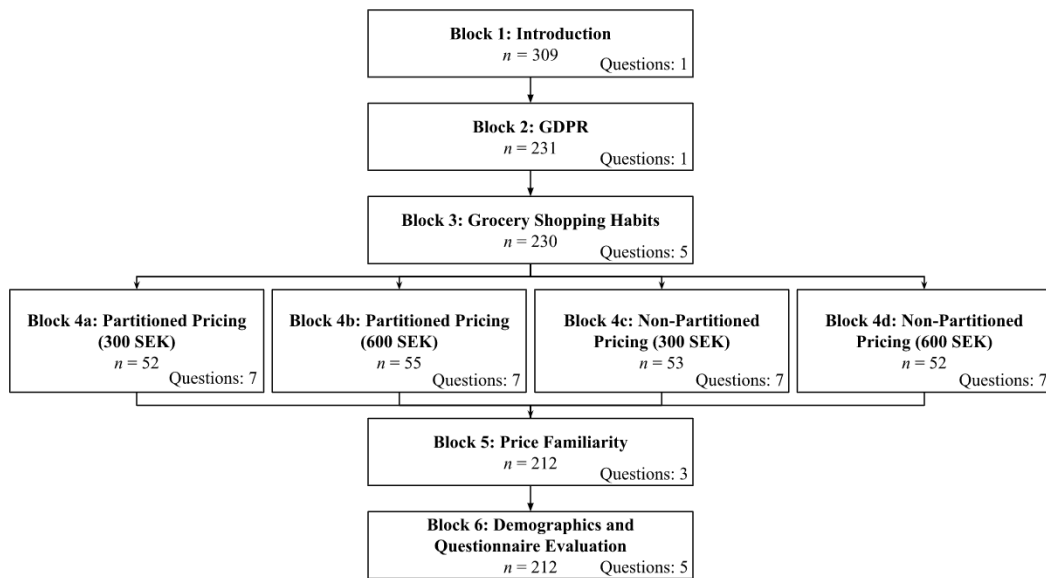
wished to do so. Open-ended questions have several advantages, one of which being prompting spontaneous, unbiased responses (Bell et al., 2022).

Block five contained three questions with a focus on Price Familiarity regarding delivery fees. The questions formed a three-item measure of Price Familiarity and was intentionally placed after the manipulation block to avoid impacting respondents' interpretation of the manipulation presented.

The final block consisted of demographical questions as well as the questionnaire evaluation. Respondents were required to answer "Yes" to the question "Are you a student?" to be considered a valid response. This block included an additional attention check question. Those responding incorrectly to the question is considered to not be paying attention to the questionnaire and thus excluded from the analysis.

### 3.3.2. Questionnaire Flow Illustration

**Figure 5.** Illustration of Questionnaire flow



## 3.4. Stimuli Development

As illustrated in the questionnaire flow, block four divided respondents into one of four scenarios. The scenario consisted of one of the two Price Partitioning alternatives and either a high or low Amount Paid for Groceries. This shapes a 2 x 2 matrix which enables a study of whether these independent variables impact students' attitudes and perceptions whilst also understanding which combination of the variables is the most optimal. The following section will outline the methodology behind the stimuli and matrix developments.



#### 3.4.1. Delivery Fee Pricing Strategy

As presented in the theoretical framework, consumers react differently based on the presentation of gains and losses (Kahneman & Tversky, 1984). The compounding rule, as outlined by Thaler (1985), results in individuals preferring segregating gains but integrating losses. 50% of respondents in a study by Lewis et al. (2006) lists delivery fees as the primary complaint about online retailing, indicating an overall loss mentality surrounding delivery fees. Consequently, the extent to which a delivery fee is integrated in the total price is an interesting area of study. Retailers have various alternatives for presenting their delivery fees, but for the sake of simplicity, this study will focus on two pricing strategies: Partitioned Pricing and Non-Partitioned Pricing.

Partitioned Pricing is commonly mentioned in prior research. Barker et al. (2020) defines Partitioned Pricing as a strategy in which the total price is separated into a base product price and a shipping surcharge. In the scenarios, Partitioned Pricing is replicated by partitioning the Amount Paid for Groceries and the delivery fee. The two are then added together as the total price at the bottom of the screen (see Appendix 2).

The second delivery fee pricing strategy respondents could be faced with is Non-Partitioned Pricing, also commonly referred to as “free” shipping (Yao & Zhang, 2012). Using the term “free shipping” or showing the delivery fee as “0 SEK” has proven effective due to the zero-price effect (Gümüş et al., 2013). However, to compensate for the additional delivery costs, retailers adopting this strategy often increase the Amount Paid for Groceries (Yao & Zhang, 2012). In the questionnaire, this strategy was replicated by listing the delivery fee as 0 SEK, but instead increasing the Amount Paid for Groceries with an equal amount as the delivery fee presented in the Partitioned Pricing scenario. Below this sum, a note was added stating “\*incl slight upcharge from store prices for online services (e.g., delivery costs)”. The total price was the same as the partitioned alternative and the differences in the scenarios was limited to the way delivery costs are displayed (see Appendix 2).

No control group with entirely free shipping was included in the matrix as it is normally an unrealistic alternative for online grocery retailers. Furthermore, in accordance with Mental Accounting Theory, it is evident that consumers would always prefer an alternative in which there are no related losses (Kahneman & Tversky, 1984). A control group was thus deemed to not contribute with any additional value to the analysis.

#### 3.4.2. Amount Paid for Groceries

The second dimension included in the matrix manipulation was the Amount Paid for Groceries. As highlighted in the theoretical framework, Kahneman and Tversky (1984) determined topical accounts as the most important for consumer behavior. Kahneman and Tversky (1984) concluded that the magnitude of the Amount Paid for Groceries affects consumer attitudes towards rebates. Thus, two different Amount Paid for

Groceries are introduced in the questionnaire to measure whether context affects the result on Attitude Towards the Offer and Price Fairness Perception with regards to delivery fees.

Through the focus groups, it was determined that students' average grocery purchases cost between 250-750 SEK. Two different sums within this range, 300 SEK and 600 SEK were selected as appropriate Amount Paid for Groceries for the study in order to provide realism to the questionnaire (see Appendix 2). Moreover, as the alternatives are significantly different, they hopefully allow an assessment of the contextual effects of Amount Paid for Groceries.

#### 3.4.3. Delivery Fee Amount

Through thorough analysis of current delivery fee strategies in the Swedish online grocery retail industry, the delivery fee amount of 69 SEK was determined. The delivery fee reflects the median of the seven online grocery retailers in Sweden discussed in the conducted focus groups, thus realistically portraying an online shopping scenario.

### 3.5. Variables and Scales

#### 3.5.1. Indexed Dependent Variables

##### **Attitude Towards the Offer**

In a similar study by Ahmad and Callow (2018), the evaluation of the offer is used as a dependent variable to compare different kinds of delivery fees. Mao (2016) similarly utilizes Attitude Towards the Offer to compare promotional pricing strategies. Their study utilizes a nine-point Likert scale with three different measures to determine whether different promotional offers influence consumer attitudes. A replication of this dependent variable was created and adapted to fit the presented scenarios. Furthermore, the scale was decreased to a seven-point Likert scale to provide simplicity for respondents.

##### **Price Fairness Perception**

In a study by Greenleaf et al. (2016), it is empirically supported that higher surcharges contributed to decreased Price Fairness. Similarly, the variable Price Fairness is developed by Campbell (2007) in a study regarding the effect of price information on Price Fairness Perceptions. Campbell's (2007) seven-point Likert scale on three multi-item measures was adapted slightly to fit this study, and clarifications were made on the scale to differentiate between different levels of agreement.

### 3.5.2. Independent Variables

#### **Price Partitioning**

One of the main independent variables in this study is the choice of delivery fee pricing strategy: Partitioned Pricing or Non-Partitioned Pricing. A description of this variable is available under Section 3.4.1. Delivery Fee Pricing Strategy.

#### **Amount Paid for Groceries**

The second independent variable used is Amount Paid for Groceries. Two different levels were used (300 SEK and 600 SEK). A description of this variable is available under Section 3.4.2. Amount Paid for Groceries.

### 3.5.3. Other Variables

#### **Price Familiarity**

Ahmad and Callow (2018) is able to support the idea that online shopping experience impacts consumer perceptions. Similarly, Habel et al. (2016) creates a seven-point Likert scale to measure consumers' familiarity with the price of different products. This scale was mimicked in this study, although with an adapted scale for simplicity. Furthermore, price was defined as "delivery fees" in each question for additional clarification.

#### **Purchasing Retailer**

As this study focuses on grocery shopping in online channels, respondents' shopping habits are of interest. Thus, the questions "From which physical store do you normally purchase groceries?" and "From which online store do you normally purchase groceries?" were asked as part of the descriptive statistics. Each of the questions contained the grocery stores (online and physical) brought up in the conducted focus groups, an "other" alternative, as well as an "I don't shop in physical/online grocery stores" alternative.

#### **Purchasing Frequency and Purchasing Channel**

Another descriptive statistic of interest is the number of times the respondents shop for groceries in a month. The questions "How many times would you estimate you purchase groceries online in a month?" and "In total, how often do you purchase groceries in a month (online and offline)?" were asked to measure purchase frequency both overall and online. These questions could further provide insight into the proportion of grocery shopping runs which are done online.

## **Purchasing Amount**

The question “Approximately how much do you normally spend on groceries in a month?” was asked as part of understanding the respondents’ shopping habits for the descriptive statistics.

## **Demographics**

Two main demographics, Gender and Age, were asked in the questionnaire. These measures were asked to gain further insight into the consumer behavior in relation to online grocery shopping and delivery fees. Furthermore, they were used as control variables in the linear regressions.

## **3.6. Data Collection and Analysis**

### **3.6.1. Data Collection**

Before collecting any data, a pre-analysis plan was conducted to ensure proper collection and analysis (see Appendix 3). The self-completion questionnaire was distributed to students from multiple universities across Sweden, both physically and digitally, from the 30<sup>th</sup> of March to the 12<sup>th</sup> of April 2023. The majority of responses were gathered through email and our personal networks. Any remaining responses were collected through QR-codes presented to students at The Stockholm School of Economics and Stockholm University. In total, 309 responses were collected, of which 212 were valid responses used in the data analysis.

According to Bell et al. (2022), the sample used in the study is considered a convenience sample. Respondents consist to a large extent of students reachable through email or in person. Consequently, this study is not representable of the entire Swedish population of students. As students are the primary target group for the study, the pool of respondents is not seen as particularly harmful for validity. Caution is still, however, taken towards making general conclusions due to sampling errors.

As part of the data collection, independence of each observation was maximized through a randomization of the manipulations and order of questions in each block. Any respondent answering the questionnaire simultaneously as another could thus not compare responses, and each response is assumed to be independent. Any student approached by us personally with the QR code were further asked to respond alone and without our support to ensure that their true thoughts were reflected.

### **3.6.2. Drop-Out Analysis**

The first step in the drop-out analysis consisted of removing any incomplete responses. Thus, 76 of the 309 total responses were removed. Any respondents taking longer than 30 minutes to complete the questionnaire were excluded for data quality, which

excluded two additional responses. For responses to be considered valid, they had to consent to the GDPR terms outlined. One respondent did not consent and was automatically redirected to the end of the questionnaire. Each respondent was also faced with a control question as part of their manipulation. Three respondents were excluded by answering this question incorrectly. Furthermore, a second control question was asked in the demographics and questionnaire evaluation block, and an additional nine responses were excluded for answering incorrectly. Lastly, any respondents who answered “No” on the question “Are you a student?” were excluded as the study focuses solely on students as a target group. This excluded six more responses. Once the drop-out analysis had been conducted, 212 valid responses remained.

### 3.6.3. Data Analysis

Initially, the data was exported from Qualtrics into Microsoft Excel. There, the drop-out analysis was conducted, and any invalid responses were removed. Any additional cleans were done, and the Excel file was thereafter exported into the statistical program R where the statistical analysis was completed. Statistical analyses completed include two type III two-sided ANOVAs, two post-hoc Tukey’s HSD tests, two linear regressions, and an explorative regression regarding Price Familiarity.

### 3.6.4. GDPR Considerations

For this thesis, any personal data collected and analyzed follows the General Data Protection Regulation (EUR-Lex, 2016). Only the most necessary personal information was collected: Gender, Age, and Educational Occupation. Respondents were presented with a thorough outline of GDPR regulations and were asked to consent before proceeding with the questionnaire.

## 3.7. Reliability and Validity

### 3.7.1. Reliability

To assess the internal consistency of the multi-item measures used in the study, Cronbach’s alpha was utilized. Cronbach’s alpha is commonly used to test internal reliability and tests whether indicators relate to the same concept. As a rule of thumb, an alpha of 0.7 or higher is considered an acceptable level of internal reliability (Bell et al., 2022). As shown in Table 1, all measures used are above the acceptable level, and the conditions for internal reliability are considered met.

**Table 1.** Summary of indexed variables' Cronbach's alpha and observed alpha

Variable	No. of items	Cronbach's alpha <sup>a</sup>	Observed alpha <sup>b</sup>
Attitude Towards the Offer <sup>c</sup>	3	.84	.93
Price Fairness <sup>c</sup>	3	.93	.90
Price Familiarity	3	.95	.91

<sup>a</sup> The alpha observed by previous researchers using similar questions to measure the variable. If used in multiple experiments the lowest observed alpha is reported.

<sup>b</sup> The alpha observed in our experiment

<sup>c</sup> Dependent variable in the thesis

### 3.7.2. Validity

According to Bell et al. (2022), ensuring that a measure truly measures the intended concept is of crucial importance. Thus, two distinct measures have been used to confirm the validity of the variables used in the study.

Initially, content validity was examined by comparing used measurements to previously conducted studies and theories. Attitude Towards the Offer can be measured on a scale of “good” to “bad” or similar, as proven by Mao (2016) and others. The variable Attitude Towards the Offer is thus determined to examine content validity as the measures used all range from a negative attitude to a positive one. Price Fairness Perception is, per definition, the judgement or comparison of a price with a standard, reference, or norm (Xia et al., 2004). The comparison is rooted in whether alternatives are reasonable, acceptable, or just. Important to note is that Price Fairness Perception is unjustly perceived as the opposite to price unfairness, and it has further been assessed that these constructs are not exclusive to one another (Xia et al., 2004). Price Fairness Perception is hence rather measured on a scale from “not fair” to fair” or similar, which is ultimately in line with the measures used in this study. There is thus content validity for the variable Price Fairness Perception. Finally, construct validity was examined for the variable Price Familiarity. In a study by Ahmad and Callow (2018), shopping experience was evaluated from a scale of “novice” to “expert”. Similarly, the questions measuring Price Familiarity in this study scaled from “fully disagree” to “fully agree” where “fully disagree” indicated an unfamiliarity with delivery fees in the industry. In contrast, “fully agree” can be translated to delivery fee familiarity in the context. Consequently, content validity considered achieved for Price Familiarity.

Furthermore, nomological validity was determined through an analysis of previously confirmed correlations between the two dependent variables. Consumer Attitude Towards the Offer has previously been determined to be a component of Price Fairness Perception (Kahneman et al., 1986). An additional study by Greenleaf et al. (2016) supports the notion that consumers' Attitude Towards the Offer and Price Fairness

Perception are both part of a joint network of variables positively impacting consumer behavior. Moreover, Bürgin and Wilken (2022) tested both variables in a Price Partitioning experiment, providing additional support for the variables' correlation as part of a larger network. As the dependent variables used in the study has been proven multiple times to correlate, proving a similar correlation from the study would validate the existence of nomological validity (see Table 2).

To determine nomological validity for the variable Price Familiarity, the study by Ahmed and Callow (2018) was used. The authors empirically support a correlation between the variables online shopping experience and evaluation of offer. As these variables are used as the foundation for the variables in this study (see Section 3.5.1. Indexed Dependent Variables and Section 3.5.3 Other Variables), a similar correlation should be supported in this study.

All correlations between the variables mentioned above can be found in Table 2.

**Table 2.** Correlations between the variables relevant for validity

Variable	1	2	3
1. Attitude Towards the Offer <sup>a</sup>	1.00		
2. Price Fairness Perception <sup>b</sup>	0.82***	1.00	
3. Price Familiarity	0.31***	0.31***	1.00

Significance codes: '\*\*\*' < .001 '\*\*' < .01 '\*' < .05

<sup>a</sup> An indexed variable measured on a Likert scale from 1-7 where 1 means that you have a very negative Attitude Towards the Offer and 7 means that you have a very positive Attitude Towards the Offer

<sup>b</sup> An indexed variable measured on a Likert scale from 1-7 where 1 means that you have a very negative Price Fairness Perception and 7 means that you have a very positive Price Fairness Perception

As shown in Table 2, correlations between all variables are significant, and the study is thus considered to be nomologically validated.

### 3.7.3. Questionnaire Evaluations

In the final block of the questionnaire, respondents evaluated the questionnaire. Respondents were asked to rate four statements on a five-item Likert scale ranging from "No, definitely not" to "Yes, definitely". 87.4% of respondents considered questions to be clearly formulated. Moreover, 90.1% thought the answer alternatives were clearly formulated. 60.6% of respondents thought the questionnaire did not try to impact their responses in any way. Finally, 80.1% of respondents viewed the manipulation as realistic (see Appendix 4). These results are further discussed in Section 5.5.

Limitations and Suggestions for Future Research.

## 4. Results and Analysis

*The purpose of this study is to investigate what impacts students' attitudes and perceptions of delivery fees. In this section, the empirical findings of the study are presented. First, the sample demographics are outlined. Thereafter, two-sided ANOVAs and multivariate linear regressions are presented, along with their respective assumptions, to test the hypotheses of the thesis.*

### 4.1. Descriptive Statistics

#### 4.1.1. Sample Demographics

The majority of individuals in higher education in Sweden are between the ages of 20-24 years old (Statista, 2021), and the sample used in this study represents a similar Age demographic ( $M = 22.21$ ) (For a histogram of Age, see Appendix 5). The set of valid respondents consisted of 107 males (50.47%) and 105 females (49.53%) ( $N = 212$ ).

On average, respondents spend 2871.70 SEK ( $SD = 1438.64$ ) per month on groceries, and most of such purchases were made in person (92.00%). The respondents' most frequently visited physical grocery stores were ICA (72.16% of respondents), Coop (50.94% of respondents), and Hemköp (42.45% of respondents). For online purchases, ICA (ICA.se) continued to be the most favored channel (18.40% of respondents), thereafter Matmart.se (9.91% of respondents) and Mathem.se (8.96% of respondents). Important to note is that 128 respondents (60.38%) answered that they do not shop for groceries online at all (see Appendix 5 for descriptive statistics for the entire sample).

#### 4.1.2. Respondents Price Familiarity

As previously stated under Section 3.5.3. Price Familiarity, respondents were asked three questions about their Price Familiarity of delivery fees. The sample reports an average Price Familiarity slightly below the neutral alternative presented in the scale ( $M = 3.78$ ,  $SD = 1.80$ ) (see Appendix 5).

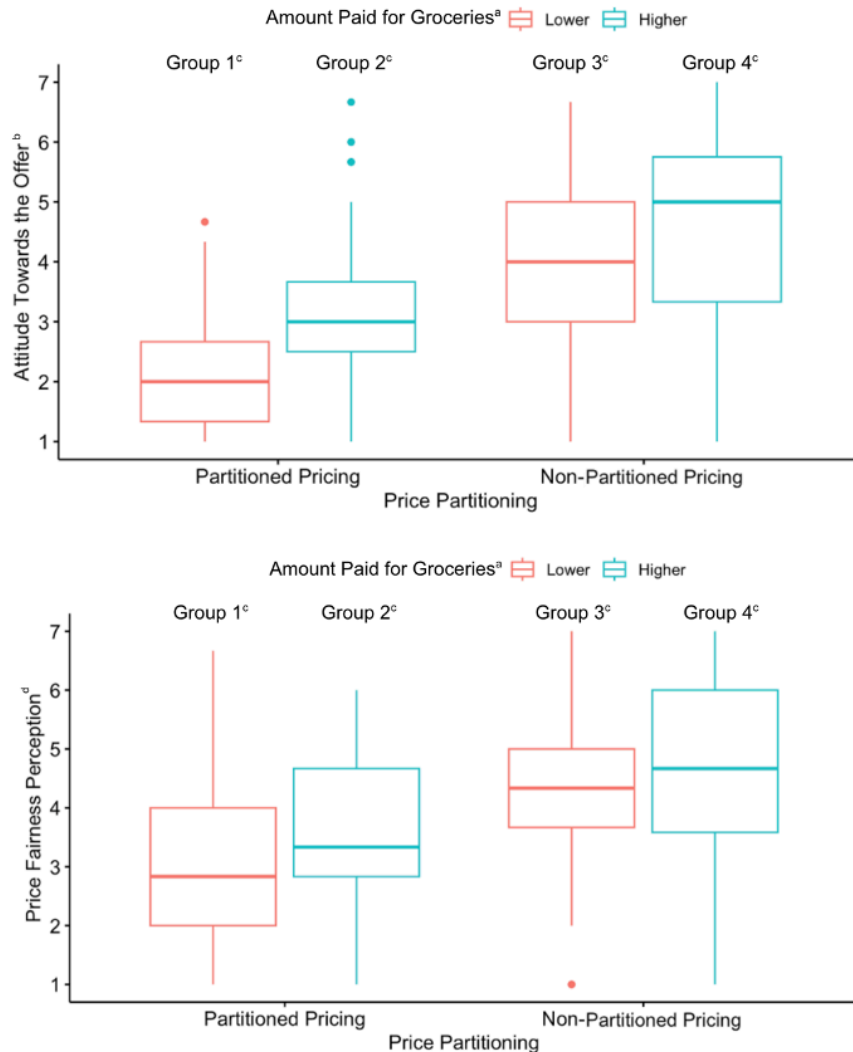
#### 4.1.3. Descriptive Statistics for Each Manipulation Group

In order to view specific differences between the different manipulation groups, descriptive statistics on variables were separated by group (see Appendix 6). The four manipulation groups were the following: group 1 with Partitioned Pricing and lower Amount Paid for Groceries ( $n = 52$ ), group 2 with Partitioned Pricing and higher Amount Paid for Groceries ( $n = 55$ ), group 3 with Non-Partitioned Pricing and lower Amount Paid for Groceries ( $n = 53$ ), and group 4 with Non-Partitioned Pricing and higher Amount Paid for Groceries ( $n = 52$ ). The groups exhibit similar values for the demographic variables. The main differences between groups regard Attitude Towards



the Offer and Price Fairness Perception. The mean Attitude Towards the Offer for manipulation group 1 was 2.09 ( $SD = 1.00$ ), for group 2 it was 3.25 ( $SD = 1.20$ ), for group 3 it was 2.96 ( $SD = 1.45$ ), and for group 4 it was 4.49 ( $SD = 1.76$ ). In terms of means for Price Fairness Perception, group 1 had a score of 3.04 ( $SD = 1.40$ ), group 2 had a score of 3.62 ( $SD = 1.27$ ), group 3 had a score of 4.34 ( $SD = 1.38$ ), and group 4 had a score of 4.53 ( $SD = 1.68$ ). A visual representation of the differences for these variables per group is shown in Figure 6.

**Figure 6.** Boxplot of Attitude Towards the Offer and Price Fairness Perception per group



<sup>a</sup> Measured as an independent dummy variable where the participants was presented with either a lower Amount Paid for Groceries (300 SEK) or a higher Amount Paid for Groceries (600 SEK)

<sup>b</sup> An indexed dependent variable measured on a Likert scale from 1-7 where 1 means that you have a very negative Attitude Towards the Offer and 7 means that you have a very positive Attitude Towards the Offer

<sup>c</sup> Group 1: Partitioned Pricing with lower Amount Paid for Groceries, Group 2: Partitioned Pricing with higher Amount Paid for Groceries, Group 3: Non-Partitioned Pricing with lower Amount Paid for Groceries, Group 4: Non-Partitioned Pricing with higher Amount Paid for Groceries

<sup>d</sup> An indexed dependent variable measured on a Likert scale from 1-7 where 1 means that you have a very negative Price Fairness Perception and 7 means that you have a very positive Price Fairness Perception

#### 4.1.4. Open-Ended Question Responses

Once respondents had completed the questions related to Attitude Towards the Offer and Price Fairness Perception, they were presented with an open-ended question

regarding their general opinions on the scenario. In total, 95 respondents answered this question, and the comments could be grouped into six different categories. The categories and example answers can be found in Appendix 7.

## 4.2. ANOVA and Tukey's HSD Test

### 4.2.1. Analyzing the Data

To analyze whether the independent variables Price Partitioning and Amount Paid for Groceries have an effect on the dependent variables Attitude Towards the Offer and Price Fairness Perception, two two-way unbalanced Analysis of Variance (ANOVAs) and two Tukey's Honest Significance Difference (HSD) tests are conducted to determine differences between the manipulation groups used in the study. For this section, p-values with a significance level of 5% ( $p < .05$ ) will be used to determine the significance for all tests unless specified otherwise.

### 4.2.2. ANOVA Assumptions

In order to conduct an ANOVA analysis on a dataset, several assumptions need to be met. The first assumption is normality of the dataset. Two Shapiro-Wilk tests were made to ensure normality with regards to both Attitude Towards the Offer and Price Fairness Perception. To reject the null hypothesis and assume normality, the p-value needs to exceed .05. The data is assumed to be normally distributed for both Attitude Towards the Offer ( $p = .06$ ) and Price Fairness Perception ( $p = .26$ ).

Secondly, the dataset needs to exhibit homoskedasticity. This assumption is tested using a Levene's test for each variable where the data rejects the null hypothesis of homoskedasticity at a 5% significance level. Homoskedasticity is observed for Price Fairness Perception ( $p = .29$ ). The data is, however, heteroskedastic for Attitude Towards the Offer ( $p < .001$ ). For any ANOVA analysis conducted on this variable, robust standard errors are used to adjust for any heteroskedastic characteristics. Test results for the assumptions can be found in Appendix 8.

Lastly, independence of observations is ensured through methods of data collection and design (see Section 3.6.1. Data Collection).

### 4.2.3. ANOVA and Tukey's HSD Test on Attitude Towards the Offer

#### **ANOVA Test**

A type III two-way ANOVA test is conducted to examine whether differences in Attitude Towards the Offer is dependent on the factors Price Partitioning and Amount Paid for Groceries. The test is made to determine whether there are any significant

variances between groups. The results of the ANOVA for Attitude Towards the Offer are displayed in Table 3.

**Table 3.** Results of the type III two-way ANOVA test for Attitude Towards the Offer

Variable	<i>Df</i>	<i>F-value</i>	<i>p</i>
(Intercept)	1	224.07	< .001***
Price Partitioning <sup>a</sup>	1	58.62	< .001***
Amount Paid for Groceries <sup>b</sup>	1	29.03	< .001***
Price Partitioning : Amount Paid for Groceries <sup>c</sup>	1	2.68	.10

Significance codes: '\*\*\*' < .001 '\*\*' < .01 '\*' < .05

<sup>a</sup> Measured as a dummy variable where 1 = Partitioned Pricing and 2 = Non-Partitioned Pricing

<sup>b</sup> Measured as a dummy variable where 1 = Lower Amount Paid for Groceries (300 SEK) and 2 = Higher Amount Paid for Groceries (600 SEK)

<sup>c</sup> The interaction between Price Partitioning and Amount Paid for Groceries

The results indicate that the Price Partitioning effect was significant,  $F(1, 208) = 58.62$ ,  $p < .001$ . Furthermore, the main effect of Amount Paid for Groceries was also significant,  $F(1, 208) = 29.03$ ,  $p < .001$ . However, no significant difference in means for the interaction between Price Partitioning and Amount Paid for Groceries is found ( $p = .10$ ). There is thus no empirical support found for H3a.

<b>H3a</b>	The interaction between Non-Partitioned Pricing and a higher Amount Paid for Groceries has a positive effect on Attitude Towards the Offer	<b>Not Empirically Supported</b>
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### Tukey's HSD Test

To determine which groups exhibits significant differences in Attitude Towards the Offer, a post-hoc Tukey's HSD test is conducted. The results of the Tukey's HSD test are shown in Table 4.<sup>6</sup>

<sup>6</sup> Despite significant differences between groups in the Tukey's HSD test, there was an absence of significant interaction effects between Price Partitioning and Amount Paid for Groceries in the ANOVA model. Potential reasonings behind these results could be the lack of sufficient data to support an interaction. Furthermore, the differences between the groups could be due to other factors not covered by the model used in the study.

**Table 4.** Results of Tukey's HSD test for differences in Attitude Towards the Offer between groups

Compared groups <sup>a</sup>	<i>diff</i>	<i>lwr</i>	<i>upr</i>	<i>p adj.</i>
3 and 1	1.87	1.18	2.57	< .001***
2 and 1	1.16	0.47	1.85.	< .001***
4 and 1	2.40	1.70	3.10	< .001***
2 and 3	-0.71	-1.40	-0.03	.03*
4 and 3	0.53	-0.17	1.23	.20
4 and 2	1.25	0.55	1.94	< .001***

Significance codes: '\*\*\*' < .001 '\*\*' < .01 '\*' < .05

<sup>a</sup> Group 1: Partitioned Pricing with lower Amount Paid for Groceries Purchased, Group 2: Partitioned Pricing with higher Amount Paid for Groceries, Group 3: Non-Partitioned Pricing with lower Amount Paid for Groceries, Group 4: Non-Partitioned Pricing with higher Amount Paid for Groceries

As shown in Table 4, all groups exhibit significant differences in means except the pairwise comparison between group 3 (Non-Partitioned Pricing with lower Amount Paid for Groceries) and group 4 (Non-Partitioned Pricing with higher Amount Paid for Groceries) ( $p = 0.20$ ). A visualization of the confidence intervals for the differences between groups can be found in Appendix 9.

#### 4.2.4. ANOVA and Tukey's HSD Test on Price Fairness Perception

##### ANOVA Test

Similarly to Attitude Towards the Offer, a type III two-way ANOVA test is conducted to determine whether there are any differences in Price Fairness Perception between the groups. The results are displayed in Table 5.

**Table 5.** Results of the type III two-way ANOVA-tests for Price Fairness Perception

Variable	<i>Df</i>	<i>F-value</i>	<i>p</i>
(Intercept)	1	241.93	< .001***
Price Partitioning <sup>a</sup>	1	22.59	< .001***
Amount Paid for Groceries <sup>b</sup>	1	4.94	.03*
Price Partitioning : Amount Paid for Groceries <sup>c</sup>	1	0.94	.33

Significance codes: '\*\*\*' < .001 '\*\*' < .01 '\*' < .05

<sup>a</sup> Measured as a dummy variable where 1 = Partitioned Pricing and 2 = Non-Partitioned Pricing

<sup>b</sup> Measured as a dummy variable where 1 = Lower Amount Paid for Groceries (300 SEK) and 2 = Higher Amount Paid for Groceries (600 SEK)

<sup>c</sup> The interaction between Price Partitioning and Amount Paid for Groceries

The results indicate that the Price Partitioning effect was significant,  $F(1, 208) = 22.59$ ,  $p < .001$ . Furthermore, the main effect of Amount Paid for Groceries was also

significant,  $F(1,208) = 4.94$ ,  $p = .03$ . No significant interaction effect is supported by the data ( $p = .33$ ), and there is thus no empirical support found for H3b.

<b>H3b</b>	The interaction between Non-Partitioned Pricing and a higher Amount Paid for Groceries has a positive effect on Price Fairness Perception	<b>Not Empirically Supported</b>
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### Tukey's HSD Test

A post-hoc Tukey's HSD test is further conducted for the Price Fairness Perception variable to examine which groups exhibits significant differences. The results for this test are displayed in Table 6.<sup>7</sup>

**Table 6.** Results of Tukey's HSD-test for differences in Price Fairness Perception between groups

Compared groups <sup>a</sup>	<i>diff</i>	<i>lwr</i>	<i>upr</i>	<i>p adj.</i>
3 and 1	1.30	0.57	2.03	< .001***
2 and 1	0.58	-0.14	1.30	.16
4 and 1	1.49	0.76	2.22	< .001***
2 and 3	-0.72	-1.44	-0.01	.05*
4 and 3	0.19	-0.53	0.92	.90
4 and 2	0.91	0.19	1.63	< .001***

Significance codes: '\*\*\*' < .001 '\*\*' < .01 '\*' < .05

<sup>a</sup> Group 1: Partitioned Pricing with lower Amount Paid for Groceries, Group 2: Partitioned Pricing with higher Amount Paid for Groceries, Group 3: Non-Partitioned Pricing with lower Amount Paid for Groceries, Group 4: Non-Partitioned Pricing with higher Amount Paid for Groceries

As shown in Table 6, no significant differences are found between groups 1 (Partitioned Pricing with lower Amount Paid for Groceries) and 2 (Partitioned Pricing with higher Amount Paid for Groceries) ( $p = .16$ ) or 3 (Non-Partitioned Pricing with lower Amount Paid for Groceries) and 4 (Non-Partitioned Pricing with higher Amount Paid for Groceries) ( $p = .90$ ). A visualization of the confidence intervals for the differences between groups can be found in Appendix 9.

<sup>7</sup> Despite significant differences between groups in the Tukey's HSD test, there was an absence of significant interaction effects between Price Partitioning and Amount Paid for Groceries in the ANOVA model. Potential reasonings behind these results could be the lack of sufficient data to support an interaction. Furthermore, the differences between the groups could be due to other factors not covered by the model used in the study.

## 4.3. Linear Regression

### 4.3.1. Analyzing the Data

A multiple linear regression model is conducted to analyze any individual relationships between the variables used in the study. A significance level of 5% ( $p < .05$ ) is considered significant in this model unless stated otherwise. The dependent variables Attitude Towards the Offer and Price Fairness Perception are modelled against the independent variables Amount Paid for Groceries and Price Partitioning, as well as other control variables used in the study to maximize the explanatory power of the model.

### 4.3.2. Linear Regression Assumptions

Similar to conducting an ANOVA analysis, linear regressions require various assumptions. Normality is equally assumed for this regression using two Shapiro-Wilk tests for both Attitude Towards the Offer ( $p = .36$ ) and Price Fairness Perception ( $p = .12$ ).

A Breusch-Pagan test is conducted to find homoskedasticity for both Attitude Towards the Offer and Price Fairness Perception. For Breusch-Pagan tests, significance levels of 5% indicate heteroskedasticity for the variables. The data is observed to be heteroskedastic for both Attitude Towards the Offer ( $p = .10$ ) and Price Fairness Perception ( $p = .88$ ). There is thus no need to make any adjustments for robust standard errors in the linear regressions. All assumptive tests can be found in Appendix 10.

Statistical independence of observations is ensured through methods of data collection and design (see Section 3.6.1. Data Collection).

Another assumption of linear regressions is linearity. To validate this assumption, the data is visualized using a Residuals Versus Fits (RVF) plot. As the lines are approximately linear and no clear patterns could be detected, linearity is assumed for both dependent variables through this visualization (DHSC Analysts, 2022) (see Appendix 10).

In order to investigate the correlations between the variables in the model and further support linearity, a Pearson Correlation Matrix was made. The results of the Pearson Correlation Matrix can be found in Table 7.

**Table 7.** Pearson Correlation Matrix with respective significance levels

Variable	1	2	3	4	5	6	7
1. Attitude Towards the Offer <sup>a</sup>	1.00						
2. Price Fairness Perception <sup>b</sup>	0.82***	1.00					
3. Price Partitioning <sup>c</sup>	0.47***	0.36***	1.00				
4. Amount Paid for Groceries <sup>d</sup>	0.25***	0.12	-0.02	1.00			
5. Age <sup>e</sup>	-0.02	-0.09	0.02	0.09	1.00		
6. Gender <sup>f</sup>	-0.02	0.02	0.08	-0.06	0.06	1.00	
7. Price Familiarity <sup>g</sup>	0.31***	0.31***	0.15*	-0.03	0.20**	0.10	1.00

Significance codes: '\*\*\*' < .001 '\*\*' < .01 '\*' < .05

<sup>a</sup> An indexed dependent variable measured on a Likert scale from 1-7 where 1 means that you have a very negative Attitude Towards the Offer and 7 means that you have a very positive Attitude Towards the Offer

<sup>b</sup> An indexed dependent variable measured on a Likert scale from 1-7 where 1 means that you have a very negative Price Fairness Perception and 7 means that you have a very positive Price Fairness Perception

<sup>c</sup> An independent variable measured as a dummy variable where 1 = Partitioned Pricing and 2 = Non-Partitioned Pricing

<sup>d</sup> An independent variable measured as a dummy variable where 1 = Lower Amount Paid for Groceries (300 SEK) and 2 = Higher Amount Paid for Groceries (600 SEK)

<sup>e</sup> The age as reported by the respondents of the survey

<sup>f</sup> Measured as a dummy variable where 1 = Male and 2 = Female

<sup>g</sup> An indexed variable measured on a Likert scale from 1-7 where 1 means that you are very unfamiliar with regular delivery fee levels and 7 means that you are very familiar with regular delivery fee levels

As shown in Table 7, there is significant correlation between the independent variables and the dependent variables. Price Fairness Perception and Amount Paid for Groceries do, however, lack strong significance. Despite this, the correlation is significant on a 10% significance level ( $p = .12$ ). Furthermore, there is limited correlation between the control variables Age and Gender to the dependent variables. There are significant correlations between Price Familiarity and Price Partitioning as well as Price Familiarity and Gender.

The regressions are additionally tested for multicollinearity using a VIF-test. A VIF-score exceeding either 5 or 10 indicates a problematic amount of multicollinearity (DHSC Analysts, 2022). No problematic amounts of multicollinearity are observed for the variables (see Appendix 10).

#### 4.3.3. Linear Regression for Attitude Towards the Offer

The multiple linear regression model used to assess Attitude Towards the Offer is the following:

$$\text{Attitude Towards the Offer} = \beta_0 + \beta_1(\text{Price Partitioning}) + \beta_2(\text{Amount Paid for Groceries}) + \beta_3(\text{Age}) + \beta_4(\text{Gender}) + \beta_5(\text{Price Familiarity}) + u_i$$



The result of the linear regression is found in Table 8.

**Table 8.** Results of the linear regression analysis on Attitude Towards the Offer

Variable	<i>B</i>	<i>Std. Error</i>	<i>p</i>
(Intercept)	1.03	0.99	.30
Price Partitioning <sup>a</sup>	1.44	0.18	< .001***
Amount Paid for Groceries <sup>b</sup>	0.89	0.18	< .001***
Age <sup>c</sup>	-0.08	0.04	.07
Gender <sup>d</sup>	-0.20	0.18	.27
Price Familiarity <sup>e</sup>	0.25	0.05	< .001***

Significance codes: '\*\*\*' < .001 '\*\*' < .01 '\*' < .05

<sup>a</sup> Measured as a dummy variable where 1 = Partitioned Pricing and 2 = Non-Partitioned Pricing

<sup>b</sup> Measured as a dummy variable where 1 = Lower Amount Paid for Groceries (300 SEK) and 2 = Higher Amount Paid for Groceries (600 SEK)

<sup>c</sup> The age as reported by the respondents of the survey

<sup>d</sup> Measured as a dummy variable where 1 = Male and 2 = Female

<sup>e</sup> An indexed variable measured on a Likert scale from 1-7 where 1 means that you are very unfamiliar with regular delivery fee levels and 7 means that you are very familiar with regular delivery fee levels

As shown in Table 8, Price Partitioning has a positive effect on Attitude Towards the Offer with a beta coefficient of 1.44, adjusted  $R^2 = .35$ ,  $F(5, 206) = 23.68$ ,  $p < .001$ . Results are interpreted as Non-Partitioned Pricing leading to an Attitude Towards the Offer increase of 1.44 on the Likert scale of 1 to 7. Consequently, there is empirical support for H1a.

<b>H1a</b>	Compared to Partitioned Pricing of delivery fees, Non-Partitioned Pricing of delivery fees will be associated with more positive Attitude Towards the Offer	<b>Empirically Supported</b>
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Moreover, Amount Paid for Groceries has a positive effect on Attitude Towards the Offer with a beta coefficient of 0.89, adjusted  $R^2 = .35$ ,  $F(5, 206) = 23.68$ ,  $p < .001$ . A higher Amount Paid for Groceries increases Attitude Towards the Offer with 0.89 points on the Likert scale. H2a is empirically supported through these results.

<b>H2a</b>	When the difference between the delivery fee and Amount Paid for Groceries is smaller, the offer will be associated with a more positive Attitude Towards the Offer compared to when the difference is greater.	<b>Empirically Supported</b>
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In terms of control variables, neither Age ( $p = .07$ ) nor Gender ( $p = .27$ ) has any significant effects on Attitude Towards the Offer. Price Familiarity has a positive significant effect with a beta coefficient of 0.25 ( $p < .001$ ). As respondents become more familiar with delivery fees online, their Attitude Towards the Offer increases with 0.25 points on the Likert scale.

#### 4.3.4. Linear Regression for Price Fairness Perception

The multiple linear regression model used to assess Price Fairness Perception is the following:

$$\text{Price Fairness Perception} = \beta_0 + \beta_1(\text{Price Partitioning}) + \beta_2(\text{Amount Paid for Groceries}) + \beta_3(\text{Age}) + \beta_4(\text{Gender}) + \beta_5(\text{Price Familiarity}) + u_i$$

The results of the regression can be found in Table 9.

**Table 9.** Results of the linear regression analysis on Price Fairness Perception

Variable	<i>B</i>	<i>Std. Error</i>	<i>p</i>
(Intercept)	3.40	1.02	< .001***
Price Partitioning <sup>a</sup>	0.98	0.19	< .001***
Amount Paid for Groceries <sup>b</sup>	0.45	0.19	.02*
Age <sup>c</sup>	-0.12	0.04	< .001***
Gender <sup>d</sup>	-0.04	0.19	.82
Price Familiarity <sup>e</sup>	0.26	0.05	< .001***

Significance codes: '\*\*\*' < .001 '\*\*' < .01 '\*' < .05

<sup>a</sup> Measured as a dummy variable where 1 = Partitioned Pricing and 2 = Non-Partitioned Pricing

<sup>b</sup> Measured as a dummy variable where 1 = Lower Amount Paid for Groceries (300 SEK) and 2 = Higher Amount Paid for Groceries (600 SEK)

<sup>c</sup> The age as reported by the respondents of the survey

<sup>d</sup> Measured as a dummy variable where 1 = Male and 2 = Female

<sup>e</sup> An indexed variable measured on a Likert scale from 1-7 where 1 means that you are very unfamiliar with regular delivery fee levels and 7 means that you are very familiar with regular delivery fee levels

Price Partitioning has a positive effect on Price Fairness Perception with a beta coefficient of 0.98, adjusted  $R^2 = .22$ ,  $F(5, 206) = 13.04$ ,  $p < .001$ . Results indicate that Non-Partitioned Pricing raises Price Fairness Perception with 0.98 on the Likert scale ranging from 1 to 7. There is thus empirical support for H1b.

<b>H1b</b>	Compared to Partitioned Pricing of delivery fees, Non-Partitioned Pricing of delivery fees will be associated with more positive Price Fairness Perception	<b>Empirically Supported</b>
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The effect of Amount Paid for Groceries was also positively influential for Price Fairness Perception with a beta coefficient of 0.45, adjusted  $R^2 = .22$ ,  $F(5, 206) = 13.04$ ,  $p = .02$ . The higher Amount Paid for Groceries increases Price Fairness Perception with 0.45 points on the Likert scale, providing empirical support for H2b.

<b>H2b</b>	When the difference between the delivery fee and Amount Paid for Groceries is smaller, the offer will be associated with a more positive Price Fairness Perception compared to when the difference is greater.	<b>Empirically Supported</b>
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With regards to the control variables included in the regression, a significant beta coefficient of -0.12 is found for Age ( $p < .001$ ). This result indicates that for every year increase in Age, Price Fairness Perception decreases. Furthermore, Price Familiarity has a significant effect with a beta coefficient of 0.26 ( $p < .001$ ). There is no significant effect found for Gender ( $p = .82$ ).

#### 4.4. Explorative Question on Price Familiarity

##### 4.4.1. Price Familiarity and Attitude Towards the Offer

To address the explorative question with regards to a potential interaction effect between Price Familiarity and Price Partitioning on Attitude Towards the Offer, a regression is created with the interaction in mind. The regression is as follows:

$$\text{Attitude Towards the Offer} = \beta_0 + \beta_1(\text{Price Partitioning}) + \beta_2(\text{Price Familiarity}) + \beta_3(\text{Price Partitioning} * \text{Price Familiarity}) + u_i$$

The results of the regression can be found in Table 10.

**Table 10.** Results of the linear regression for the interaction between Price Familiarity and Price Partitioning on Attitude Towards the Offer

Variable	<i>B</i>	<i>Std. Error</i>	<i>p</i>
(Intercept)	2.42	0.30	< .001***
Price Partitioning <sup>a</sup>	0.41	0.45	0.36
Price Familiarity <sup>b</sup>	0.07	0.08	0.34
Price Partitioning : Price Familiarity	0.27	0.11	0.01*

Significance codes: '\*\*\*' < .001 '\*\*' < .01 '\*' < .05

<sup>a</sup> Measured as a dummy variable where 1 = Partitioned Pricing and 2 = Non-Partitioned Pricing

<sup>b</sup> An indexed variable measured on a Likert scale from 1-7 where 1 means that you are very unfamiliar with regular delivery fee levels and 7 means that you are very familiar with regular delivery fee levels

As shown in Table 10, there is a significant interaction effect between Price Partitioning and Price Familiarity with a beta coefficient of 0.27, adjusted  $R^2 = .29$ ,  $F(3, 208) = 29.82$ ,  $p = .01$ . Results suggest that, as the level of Price Familiarity increases by 1 point on the Likert scale, the effect of Price Partitioning on Attitude Towards the Offer increases by 0.27. The variables, however, individually lack significance in this model ( $p > .05$ ).

#### 4.4.2. Price Familiarity and Price Fairness Perception

A similar explorative linear regression is conducted to explore the potential interaction between Price Familiarity and Price Partitioning on Price Fairness Perception. The regression is as follows:

$$\text{Price Fairness Perception} = \beta_0 + \beta_1(\text{Price Partitioning}) + \beta_2(\text{Price Familiarity}) + \beta_3(\text{Price Partitioning} * \text{Price Familiarity}) + u_i$$

The results of the regression can be found in Table 11.

**Table 11.** Results of linear regression for the interaction effect of Price Familiarity and Price Partitioning on Price Fairness Perception

Variable	<i>B</i>	<i>Std. Error</i>	<i>p</i>
(Intercept)	2.85	0.31	< .001***
Price Partitioning <sup>a</sup>	0.33	0.45	0.47
Price Familiarity <sup>b</sup>	0.14	0.08	0.09
Price Partitioning : Price Familiarity	0.17	0.11	0.11

Significance codes: '\*\*\*' < .001 '\*\*' < .01 '\*' < .05

<sup>a</sup> Measured as a dummy variable where 1 = Partitioned Pricing and 2 = Non-Partitioned Pricing

<sup>b</sup> An indexed variable measured on a Likert scale from 1-7 where 1 means that you are very unfamiliar with regular delivery fee levels and 7 means that you are very familiar with regular delivery fee levels

As shown in Table 11, there is no significant interaction effect between Price Partitioning and Price Familiarity, adjusted  $R^2 = .19$ ,  $F(3, 208) = 17.93$ ,  $p = .11$ . Furthermore, the individual variables also lack significance ( $p > .05$ ).

## 5. Discussion and Analysis

*This section discusses the results outlined in previous sections of this thesis. The linear relationships, as well as interaction effects of Price Partitioning and Amount Paid for Groceries, are discussed, as well as the results of the explorative question. Finally, limitations of the study and suggestions for future research are presented.*

### 5.1. Price Partitioning

As theorized by Kahneman and Tversky (1984), customers will be more positively inclined towards scenarios where losses are integrated to a maximized extent. Similar conclusions are empirically supported in this study as linear positive effects are found between Non-Partitioned Pricing and both Attitude Towards the Offer and Price Fairness Perception (see Table 8 and Table 9). This is contrary to prior research which praises Partitioned Pricing as the preferred delivery fee alternative. Important to note, however, is that previous studies regarding Partitioned Pricing focuses primarily on effects on profits, something not investigated in this study. This study thus provides an additional perspective to the delivery fee pricing strategy dilemma, focusing on consumer attitudes and perceptions rather than economic profits.

Consequently, the results indicate that online grocery stores in Sweden should opt for Non-Partitioned Pricing to increase Attitude Towards the Offer and Price Fairness Perception for students. As students are amongst the most price sensitive in society (Postnord, 2022), it can be speculated that they view delivery fees similarly to the definition of losses in Mental Accounting Theory (Kahneman & Tversky, 1984). 41 open-ended responses claims that delivery fees are too high (see Appendix 7), indicating that delivery fees are a large pain point for students who grocery shop online. It thus makes sense to integrate these unavoidable losses into the price to make the delivery seem “free”, in other words utilizing Non-Partitioned Pricing.

### 5.2. Amount Paid for Groceries

The results of the linear regressions further indicate a significant effect of Amount Paid for Groceries (see Table 8 and Table 9) on the dependent variables Attitude Towards the Offer and Price Fairness Perception. Higher Attitude Towards the Offer and Price Fairness Perception is observed when the Amount Paid for Groceries is higher, aligning with the theories about topical accounts by Kahneman and Tversky (1984). As hypothesized, respondents' relative comparison between the Amount Paid for Groceries and the delivery fee/upcharge impacts their Attitude Towards the Offer and Price Fairness Perception, favoring the alternatives in which the delivery fee is a smaller proportion of the total price.

The practical implications of these results are to consider the relative size of the delivery fee/upcharge compared to the total price. Making larger purchases in an online grocery setting might seem more profitable for students as the delivery fee is then smaller in relative terms. Thus, to maximize Attitude Towards the Offer and Price Fairness Perception for this group, our research suggests that online grocery retailers should attempt to increase individual order sizes to make the delivery fee/upcharge relatively smaller.

### 5.3. The Relationship Between Price Partitioning and Amount Paid for Groceries

No empirical support is found for the hypothesized interaction between Price Partitioning and Amount Paid for Groceries for either Attitude Towards the Offer or Price Fairness Perception (see Table 3 and Table 5). The result can be further interpreted using the Tukey's HSD tests where differences between groups provide further insight (see Table 4 and Table 6). For the variable Attitude Towards the Offer, it can be noted that groups presented with Non-Partitioned Pricing obtain no significant differences regardless of Amount Paid for Groceries. When regressing Price Fairness Perception, the Amount Paid for Groceries creates no significant differences between the two groups presented with Non-Partitioned Pricing. Similarly, there is no identified significant difference between the two groups presented with Partitioned Pricing for Price Fairness Perception.

The insignificant differences between groups of different Amount Paid for Groceries could explain the lack of significant interaction effect. It seems, by the empirical results, that Price Partitioning causes a larger difference between groups than Amount Paid for Groceries. One fault for this outcome could be the choice of sums for the study. Perhaps, a larger difference between sums, for instance by increasing the higher Amount Paid for Groceries from 600 SEK to 1 000 SEK, could cause a significant interaction effect as discrepancies between alternatives become larger.

Further speculation around the lack of interaction effect between the variables could be that variables are too different to be considered simultaneously. Perhaps, students either find Price Partitioning or the delivery fee/upcharge relative to the Amount Paid for Groceries to be of importance, but considering these in conjunction does not further increment their Attitude Toward the Offer or Price Fairness Perception. Any synergetic interactive effects between the variables cannot be supported in this setting, however conducting the study with different variables or context could potentially change this outcome.

## 5.4. Explorative Question on Price Familiarity

The independent linear effect of Price Familiarity was significant (see Table 8 and Table 9). Results suggest that the more familiar respondents are with delivery fee prices, the more positively inclined they will be in terms of Attitude Towards the Offer and Price Fairness Perception. Furthermore, a potential interaction effect was explored between Price Partitioning and Price Familiarity. This explorative question mirrors results from the study made by Ahmed and Callow (2018) who found that experienced shoppers are more likely to accept delivery fees as a normal part of the experience.

The existence of a positive interaction effect is empirically supported for Attitude Towards the Offer, yet not for Price Fairness Perception. The results empirically support that the combination of Non-Partitioned Pricing and being more familiar create an amplified effect on Attitude Towards the Offer. The practical implications of these results suggest that retailers looking for positive Attitude Towards the Offer among students should pursue Non-Partitioned Pricing and focus their efforts on increasing students' Price Familiarity. As an increase in familiarity enhances the positive effect of Non-Partitioned Pricing, it can be speculated that converting consumers and familiarizing them with online shopping could make them more positively inclined to delivery fees. Further expanding on the interaction effect, it could be speculated that unfamiliar online student shoppers are likely to have an even further reduced Attitude Towards the Offer when presented with Partitioned Pricing. When attempting to convert students to online shopping, it can thus be hypothesized to be severely disadvantageous to use Partitioned Pricing.

Important to note, however, is that when introducing an interaction term into the regression, the individual effects of the variables Price Partitioning and Price Familiarity are not significant ( $p > .05$ ). This makes the model increasingly unstable and difficult to draw conclusions from, something worth considering when interpreting the results of the model. The interaction effect seemingly cancels out the individual effects of the variables, and additional research would have to be conducted in order to explain this relationship in further detail.

## 5.5. Limitations and Suggestions for Future Research

Like any study, several limitations can be noted. Firstly, critique can be directed towards the choice of data collection method. The choice to email the questionnaire link and asking individuals around university campuses limits the extent to which the study represents the complete Swedish student population. The sample size is a further reason for critique as a larger sample size would increasingly reflect reality.

Closely connected to the limitations related to sample size is the choice of segmentation. Although students are highly relevant as they shop online frequently and

are subject to economic uncertainty, it can be debated whether they are the optimal target group as only 39.62% shop online. Perhaps, segmenting the study to those who frequently purchase groceries online could increase the validity and provide more precise recommendations for an appropriate delivery fee pricing strategy. Simultaneously, an analysis purely with those unfamiliar to online shopping could be interesting to uncover ways to attracting new customers.

Although providing significant results, this study paints far from the entire picture regarding delivery fee strategies. To improve the explanatory power in any future research, a thorough analysis of other variables affecting Attitude Toward the Offer and Price Fairness Perception should be considered. Had we replicated the study, a potential additional variable is Proximity to Nearest Physical Grocery Store as it is commonly referred to as a reason to not shop online by the respondents in the open-ended question (see Appendix 7).

Additionally, we recognize that Price Familiarity and Price Partitioning significantly correlate (see Section 4.3.2. Linear Regression Assumptions). These correlations could be considered problematic and there is potential spillover between these variables. As no issues with multicollinearity were found, however, this correlation is not considered significantly impactful for the results of the study.

Moreover, 39% of respondents thought the study attempted to impact their decisions, and it can be considered a potential source of error in the study. This was, however, the only inverted question amongst a set of positively posed questions. Thus, in hindsight, there was a high risk of misinterpretation, and it is possible that answers to this question is unreliable. Although we recognize the potential complication of these results, we deem it reasonable to assume that responses do not reflect the true thoughts of the respondents. The result of this question is thus not seen as particularly harmful for the outcome of the study.

Important to note is that this study approaches Mental Accounting Theory and research on delivery fee pricing strategies from an alternative angle compared to other studies. Multiple other studies involve presenting several alternatives alongside each other and allowing respondents to choose their preferred alternative. Such an approach could have provided deeper insights to this study as it would further explain the importance of relative measures for the effect on attitudes and perceptions. On the contrary, such a design could make respondents more aware of the purpose of the study, thus impacting their answers.

Finally, it is observed that several of the mean scores of the dependent and independent variables approach the neutral alternative of 4 for some manipulation groups, for example Group 4 (see Appendix 6). This potentially lowers the power of the results as scores close to the neutral alternative lack clear direction. This is important to note for the interpretation of the results of the study as the dependent and independent variables



seemingly failed to create an effect strong enough to deviate from the neutral alternative in some cases.

## 6. Conclusion

This thesis aims to empirically investigate the effects of different delivery fee pricing strategies' influence on students' attitudes and perceptions. It was empirically supported through the linear regressions that both Price Partitioning and Amount Paid for Groceries impacts student attitudes and perceptions of delivery fees. It is further supported that Swedish students are more positively inclined towards Non-Partitioned delivery fees, in other words the perceived “free” shipping alternative. Moreover, a positive relationship between the dependent variables and Amount Paid for Groceries is found. Students thus generally view delivery fees as less negative when they have purchased for a larger sum. No empirical support was found for the interaction between Price Partitioning and Amount Paid for Groceries, hence finding a limited need for online grocery retailers to consider these variables jointly. An explorative question regarding the interactive effects of Price Familiarity on Price Partitioning was also investigated, and although empirical support was found for a potential interaction, additional research would have to be conducted to validate the effects.

To conclude this thesis, it should be known by the Swedish online grocery retail industry that students will shop ‘till they drop, but increasingly so if the delivery fees seem dropped.

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## 8. Appendices

### APPENDIX 1. Focus Group Questions and Insights

#### Focus Group Questions

1. Which online grocery stores are you familiar with?
2. Do you or anyone else in your household purchase groceries online?
3. Which factors influence your choice of online grocery store?
4. What do you think in terms of delivery fees when shopping for groceries online?
5. How much do you think is a reasonable delivery fee?
6. How price sensitive are you in terms of groceries? Do you always choose the cheapest store/product?
7. Do you act differently when shopping online compared to in physical stores? With regards to pricing/promotion comparisons?
8. Are you as comfortable shopping groceries online as in a physical store?
9. How much do you normally spend on a single purchase of groceries?

#### Notes from Focus Group 1 (22<sup>nd</sup> March 2023)

- Students are familiar with Ica, Coop, Hemköp, Willys, Matmart, and Lidl. Lidl does not actually have an online grocery store, but could still be included in the question regarding physical grocery stores
- 3 students shopped online, the others did not.
- The ones that shopped online chose their grocery store based on which was the cheapest. Delivery fees were not appreciated. The ones that did not shop online claimed that they lived close enough to a physical grocery store. They saw no point in shopping online
- Discussions around delivery fees were rather negative, and some said that there was no “reasonable” delivery fee. Others understood that there is extra work that goes into online orders and that they are fine spending a bit of money on delivery fees. Overall, students mentioned delivery fee sums around 39-69 SEK to be reasonable
- Many students use store-brands such as ICA basic whenever possible to save money, but most also cared about the quality of the groceries, thus sometimes choosing more expensive products.
- Those who shop online think there is no difference shopping online compared to shopping in person. The main difference is that they were able to see their total price all the time, making them more conscious of how much they were spending. All say that they are comfortable shopping online
- 7 students said that they rarely shop for larger sums as they prefer to make multiple smaller shops throughout the week of about 300-400 SEK. Others preferred to make weekly or even monthly shops for about 750-1500 SEK.



### **Notes From Focus Group 2 (23<sup>rd</sup> March 2023)**

- Students were familiar with Ica, Coop, Hemköp, Willys, Lidl, City Gross, and Mathem. One student also suggested Foodora, but since this is not a grocery store in itself, it won't be included in the questionnaire
- 2 students shopped online regularly, 5 said that they had done it at some point but that it was not something they did regularly
- The ones that were shopping online chose the store based on the availability of the products that they desired and the one offering the best prices. Delivery fees were mentioned as an influential factor for the choice of store
- Most participants talked negatively about delivery fees and preferred to shop online when the delivery fee was free. Discussions ended up in that a delivery fee up to 99 SEK could be reasonable depending on the amount of groceries purchased
- Most participants said that they try to opt for the cheapest products, but that the choice of store mostly depends on proximity. In some cases they would choose a more expensive product, for example to avoid additional sugar
- The ones shopping online said that they tend to try to make larger purchases when shopping online as compared to when shopping in physical stores
- One person thought that it was harder to search for products and found it troubling to not walk around in the store as that usually made the person remember things that they need to buy. Another person said that they like to touch products before buying them, for example they would not trust another person to pick out apples for them
- People were generally shopping for around 250-700 SEK when visiting a grocery store either physically or online

## APPENDIX 2. Questionnaire and Manipulations

### Block 1: Questionnaire introduction

The purpose of this survey is to evaluate consumer attitude in terms of online grocery shopping.

The data will be used as a basis for a bachelor's thesis at Stockholm School of Economics and the research is conducted by Magda Liljedahl and Ronja Svensson.

It will take you **around 5 minutes** to answer.

At the end you will have the possibility to enter a lottery for the chance to **win a gift card of 500 kr at Mathem**. You will be presented a hypothetical shopping scenario, and then be asked to answer a couple of questions based on the scenario.

All of your answers are anonymous and will be treated according to GDPR. If you have any questions regarding the survey, feel free to contact 25117@student.hhs.se (Ronja Svensson). Finally, we want to thank you for participating in our study!

Magda Liljedahl & Ronja Svensson

## Block 2: Consent to GDPR

### Consent to participation in student's survey

The student's project. As an integral part of the educational program at the Stockholm School of Economics, enrolled students complete an individual thesis. This work is sometimes based upon surveys and interviews connected to the subject. Participation is naturally entirely voluntary, and this text is intended to provide you with necessary information about that may concern your participation in the study or interview. You can at any time withdraw your consent and your data will thereafter be permanently erased.

**Confidentiality.** Anything you say or state in the survey or to the interviewers will be held strictly confidential and will only be made available to supervisors, tutors and the course management team.

**Secured storage of data.** All data will be stored and processed safely by the SSE and will be permanently deleted when the project is completed.

**No personal data will be published.** The thesis written by the students will not contain any information that may identify you as a participant to the survey or interview subject.

**Your rights under GDPR.** You are welcome to visit <https://www.hhs.se/en/about-us/data-protection/> in order to read more and obtain information on your rights related to personal data.

**Consent:** I have read the information above and consent to participate in this study.

Yes. Write today's date (YYYYMMDD) and your initials to proceed to the survey

☐

No. I wish to not participate in the survey

☐

### Block 3. Grocery Shopping Habits

How many times would you estimate you purchase groceries **online** during a month? (answer with a number)

In total, how often do you purchase groceries during a month (**online** and **offline**)? (answer with a number)

From which **physical grocery store** do you normally purchase groceries?

ICA	<input type="checkbox"/>
Coop	<input type="checkbox"/>
Willys	<input type="checkbox"/>
Lidl	<input type="checkbox"/>
City Gross	<input type="checkbox"/>
Hemköp	<input type="checkbox"/>
I don't shop for groceries in physical stores	<input type="checkbox"/>
Other, please specify:	<input type="checkbox"/>
<input type="text"/>	

From which **online grocery store** do you normally purchase groceries?

Hemköp.se	<input type="checkbox"/>
Mathem.se	<input type="checkbox"/>
Coop.se	<input type="checkbox"/>
Citygross.se	<input type="checkbox"/>
ICA.se	<input type="checkbox"/>
Willys.se	<input type="checkbox"/>
Matsmart.se	<input type="checkbox"/>
I don't shop for groceries in online stores	<input type="checkbox"/>
Other, please specify	<input type="checkbox"/>

Approximately how much do you normally spend on groceries in a month? (Answer with a number)

--

## Block 4. Manipulation

Note: For the manipulation the respondents were presented with 1 out of 4 scenarios. This example shows the manipulation that Group 3 was presented with. All 4 scenarios can be found below.

Imagine that you've been shopping for groceries online (**for a store price of 300 SEK**) and are about to proceed to checkout to pay for your purchase.

**Basket**

Groceries

369:00 SEK\*

\*incl slight upcharge (69 SEK) from store prices for online services (e.g. Delivery costs)

Delivery fee ⓘ

0 SEK

Total

369:00 SEK

Step 1 / 2  
Basket

Proceed to checkout

How attractive does the deal appear to you?

Very unattractive	Mostly unattractive	Somewhat unattractive	Neutral	Somewhat attractive	Mostly attractive	Very attractive
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In your opinion, does the total price suggest a good or bad deal overall?

A very bad deal	A bad deal	A somewhat bad deal	Neutral	A somewhat good deal	A good deal	A very good deal
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How likely are you to buy the groceries?

Definitely will not	Will not	Likely will not	Neutral	Likely will	Will	Definitely will
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rank the following statements regarding the total price

	Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
The total price is fair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The total price is acceptable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The total price is right	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Would you like to give a general comment about your answers to the questions in this section?

How much is the total price in the scenario? (Answer with a number)

## Block 5. Price familiarity

Please rate the following statements

	Fully disagree	Disagree	Partly disagree	Neutral	Partly agree	Agree	Fully agree
I am familiar with the regular delivery fee levels for groceries online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know what one usually has to pay in delivery fees for groceries online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know what an adequate price level for groceries online would be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Block 6. Demographics and Questionnaire evaluation

Finally, we would like to ask some questions about you and your perception of this survey

How old are you?

What gender do you identify with?

Male	<input type="radio"/>
Female	<input type="radio"/>
Non-binary / third gender	<input type="radio"/>
Prefer not to say	<input type="radio"/>

Are you a student?

Yes	<input type="radio"/>
No	<input type="radio"/>

Please tell us what you think about this survey

	No, definitely not	No, partly not	Neutral	Yes, partly	Yes, definitely
Were the questions clearly formulated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Were the answer options clearly formulated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you think that the questions were formulated to impact your answer in any direction?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you think that this experiment was realistic?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's important that you pay attention to this survey. Please tick "No, definitely not"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Block 7. End of Questionnaire

This is the end of the survey and your answers have been recorded.

Thank you for contributing to our research. If you wish to participate in the lottery with a chance to win 500 kr at Mathem, click [HERE](#) to fill in your email. When you click the link, you are redirected to a new page, and your answers can thus not be linked to your email. This is to ensure your anonymity. If you don't want to participate in the lottery, you can now close this tab. We wish you a nice day!

Magda & Ronja



## Manipulated Scenarios

Basket	
Groceries	300:00 SEK
Delivery fee ⓘ	69 SEK
<hr/>	
Total	369:00 SEK
<div>Step 1 / 2 Basket <span>Proceed to checkout</span></div>	

Group 1

Basket	
Groceries	600:00 SEK
Delivery fee ⓘ	69 SEK
<hr/>	
Total	669:00 SEK
<div>Step 1 / 2 Basket <span>Proceed to checkout</span></div>	

Group 2

Basket	
Groceries	369:00 SEK*
<small>*incl slight upcharge (69 SEK) from store prices for online services (e.g. Delivery costs)</small>	
Delivery fee ⓘ	0 SEK
<hr/>	
Total	369:00 SEK
<div>Step 1 / 2 Basket <span>Proceed to checkout</span></div>	

Group 3

Basket	
Groceries	669:00 SEK*
<small>*incl slight upcharge (69 SEK) from store prices for online services (e.g. Delivery costs)</small>	
Delivery fee ⓘ	0 SEK
<hr/>	
Total	669:00 SEK
<div>Step 1 / 2 Basket <span>Proceed to checkout</span></div>	

Group 4

## APPENDIX 3. Pre-survey Analysis Plan

### 1) Data collection. Have any data been collected for this study already?

No, no data have been collected for this study yet.

### 2) Hypothesis. What's the main question being asked or hypothesis being tested in this study?

The study consists of three pairs of hypotheses, measuring two different dependent variables. The primary hypothesis is:

H1a: Non-Partitioned Pricing has a positive effect on consumer Attitudes Towards the Offer (H1b: Price Fairness Perception)

The secondary hypotheses are:

H2a: A higher Amount Paid for Groceries will have a positive effect on consumer Attitude Towards the Offer (H2b: Price Fairness Perception)

H3a: The interaction between Price Partitioning and Amount Paid for Groceries has a positive effect on Attitude Towards the Offer (H3b: Price Fairness Perception)

**3) Dependent variable. Describe the key dependent variable(s) specifying how they will be measured.**

Attitude Towards the Offer: Will be measured as an indexed variable based on three questions. The questions originate from previous studies with a high Cronbach's alpha.

Price Fairness Perceptions: Will be measured as an indexed variable that is based on three questions. The questions originate from previous studies with a high Cronbach's alpha.

**4) Conditions. How many and which conditions will participants be assigned to?**

Participants will be randomly assigned to 1 out of 4 manipulation groups.

**5) Analyses. Specify exactly which analyses you will conduct to examine the main question/hypothesis.**

H1a/b and H2a/b will be analyzed using linear regressions. First the assumptions for a linear regression will be tested, and then the linear regression model will be conducted. Intuitively, the regression will look like this: Dependent variable ~ Price Partitioning + Amount Paid for Groceries + Age + Gender + Average of Price Familiarity

H3a/b will be tested using ANOVA. First the assumptions for ANOVA will be tested, and then the ANOVA will be conducted. Intuitively, the ANOVA will look like this: Dependent variable ~ Price Partitioning + Amount Paid for Groceries + Price Partitioning \* Amount Paid for Groceries

A Tukey Test will also be conducted to determine differences between the groups.

**6) Outliers and Exclusions. Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.**

We will exclude those that answer the attention checks wrong. We will exclude those that answer the survey too slowly (>30 minutes). We will exclude those that do not comply with GDPR. We will exclude those that are not students.

**7) Sample Size. How many observations will be collected or what will determine sample size?**

We aim for 200 valid observations, creating 4 groups of at least 50 participants. To achieve this, we estimate that we will need approximately 300 answers, to then be able to exclude all responses that do not reach the requirements and still have more than 200 answers to analyze.

## 8) Other. Anything else you would like to pre-register?

Our study also includes an explorative question, looking at if there's an interaction between Amount Paid for Groceries and Price Partitioning on consumer Attitude Towards the Offer.

## 9) Type of study

Survey

## 10) Data source

Field experiment / RCT

## APPENDIX 4. Questionnaire evaluation

### Summarized results of Questionnaire evaluation

Question <sup>a</sup>	No, definitely not	No, partly not	Neutral	Yes, partly	Yes, definitely
Question form. <sup>b</sup>	1.9%	2.4%	6.6%	26.4%	62.7%
Answer options form. <sup>c</sup>	1.4%	2.8%	3.3%	23.6%	68.9%
Impacted answers <sup>d</sup>	41.0%	23.1%	18.3%	5.7%	11.8%
Realism of experiment <sup>e</sup>	1.9%	1.9%	15.6%	32.1%	48.6%

N = 212

<sup>a</sup> Percentages may not total 100 due to rounding

<sup>b</sup> Question asked: Were the questions clearly formulated?

<sup>c</sup> Question asked: Were the answer options clearly formulated?

<sup>d</sup> Question asked: Do you think that the questions were formulated to impact your answer in any direction?

<sup>e</sup> Question asked: Do you think that this experiment was realistic?

## APPENDIX 5. Descriptive Statistics for the Entire Sample

### Descriptive statistics for the sample (N = 212)

#### Panel A: Gender

Gender <sup>a</sup>	<i>n</i>	%
Male	107	50.47%
Female	105	49.53%

#### Panel B: Age

Variable	<i>M</i>	<i>SD</i>	<i>Med</i>	<i>Min</i>	<i>Max</i>
Age <sup>b</sup>	22.21	2.22	22	17	29

---

**Panel C: Grocery shopping habits**

---

Variable	<i>M</i>	<i>SD</i>	<i>Med</i>	<i>Min</i>	<i>Max</i>
Average Spend <sup>c</sup>	2871.70	1438.64	3000.00	0	8000.00
Monthly Grocery Store Visits <sup>d</sup>	9.55	5.76	8.00	0	40.00
Proportion of Purchases Online <sup>e</sup>	8.00%	15.00%	0.00%	0.00%	100%

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**Panel D: Physical grocery store preferences**

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Physical grocery store	<i>n</i> <sup>f</sup>	% <sup>g</sup>
ICA	153	72.17%
Coop	108	50.94%
Willys	62	29.25%
Lidl	52	24.53%
Citi Gross	13	6.13%
Hemköp	90	42.45%
Don't shop in physical stores	1	0.47%
Other	2	0.94%

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**Panel E: Online grocery store preferences**

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Online grocery store	<i>n</i> <sup>f</sup>	% <sup>g</sup>
ICA.se	39	18.40%
Coop.se	10	0.47%
Willys.se	6	2.83%
Citigross.se	0	0.00%
Hemköp.se	5	42.45%
Mathem.se	19	2.36%
Matsmart.se	21	9.91%
Don't shop in online stores	128	60.38%
Other	15	7.07%

---

**Panel F: Price Familiarity statistics**

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Variable	<i>M</i>	<i>SD</i>	<i>Med</i>	<i>Min</i>	<i>Max</i>
Price Familiarity <sup>h</sup>	3.78	1.80	3.67	1.00	7.00

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<sup>a</sup> Measured as a dummy variable where 1 = Male and 2 = Female

<sup>b</sup> The Age as reported by the respondents of the survey

<sup>c</sup> The average spend on groceries per month as reported by the respondents of the survey

<sup>d</sup> The average number of grocery store visits (online and offline) per month as reported by the respondents of the survey

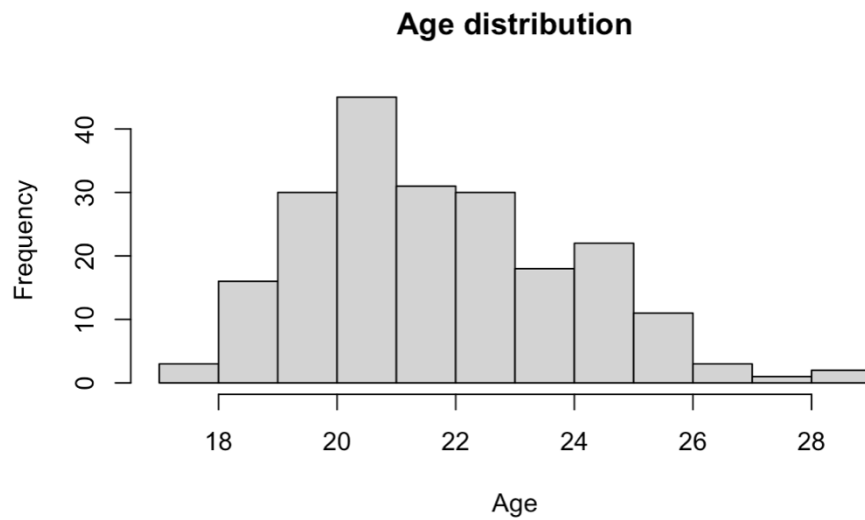
<sup>e</sup> The average number of online grocery store purchases per month as reported by the respondents of the survey

<sup>f</sup> The *n* will not sum to 212 and as participants could choose multiple options

<sup>g</sup> The percentages will not sum to 100% as participants could choose multiple options

<sup>h</sup> An indexed variable measured on a Likert scale from 1-7 where 1 means that you are very unfamiliar with regular delivery fee levels and 7 means that you are very familiar with regular delivery fee levels

## Histogram of Age distribution of sample



## APPENDIX 6. Descriptive statistics per manipulation group

### Descriptive statistics per manipulation group

**Panel A:** Descriptive Statistics Group 1: Partitioned pricing with lower Amount Paid for Groceries  
(*n* = 52)

Variable	<i>M</i>	<i>SD</i>	<i>Med</i>	<i>Min</i>	<i>Max</i>
Attitude Towards the Offer <sup>a</sup>	2.09	1.00	2.00	1.00	4.67
Price Fairness Perception <sup>b</sup>	3.04	1.40	2.83	1.00	6.67
Age <sup>c</sup>	21.85	2.12	22	18	28
Gender <sup>d</sup>	1.54	N/A	N/A	N/A	N/A
Average Spend <sup>e</sup>	2636.54	1243.81	2450.00	300.00	6000.00
Monthly Grocery Store Visits <sup>f</sup>	9.40	5.12	10.00	0.00	25.00
Proportion of Purchases Online <sup>g</sup>	11.43%	1.71%	0.00%	0.00%	100.00%
Price Familiarity <sup>h</sup>	3.42	1.69	3.17	1.00	7.00

**Panel B:** Descriptive Statistics Group 2: Partitioned pricing with higher Amount Paid for Groceries  
(*n* = 55)

Variable	<i>M</i>	<i>SD</i>	<i>Med</i>	<i>Min</i>	<i>Max</i>
Attitude Towards the Offer <sup>a</sup>	3.25	1.20	3.00	1.00	6.67
Price Fairness Perception <sup>b</sup>	3.62	1.27	3.33	1.00	6.00
Age <sup>c</sup>	22.47	2.09	22	19	29
Gender <sup>d</sup>	1.38	N/A	N/A	N/A	N/A
Average Spend <sup>e</sup>	2603.64	1355.33	2500.00	0.00	7500.00
Monthly Grocery Store Visits <sup>f</sup>	8.77	6.12	8.00	0.00	40.00
Proportion of Purchases Online <sup>g</sup>	1.94%	13.47%	0.00%	0.00%	100%
Price Familiarity <sup>h</sup>	3.61	1.74	3.33	1.00	7.00

**Panel C:** Descriptive Statistics Group 3: Non-partitioned pricing with lower Amount Paid for Groceries  
(*n* = 53)

Variable	<i>M</i>	<i>SD</i>	<i>Med</i>	<i>Min</i>	<i>Max</i>
Attitude Towards the Offer <sup>a</sup>	3.96	1.45	4.00	1.00	6.67
Price Fairness Perception <sup>b</sup>	4.34	1.38	4.33	1.00	7.00
Age <sup>c</sup>	22.19	2.26	22	18	26
Gender <sup>d</sup>	1.51	N/A	N/A	N/A	N/A
Average Spend <sup>e</sup>	2924.53	1472.69	3000.00	300.00	8000.00
Monthly Grocery Store Visits <sup>f</sup>	10.26	6.14	10.00	2.00	27.00
Proportion of Purchases Online <sup>g</sup>	16.62%	33.89%	0.00%	0.00%	100%
Price Familiarity <sup>h</sup>	4.25	1.83	4.33	1.00	7.00

**Panel D:** Descriptive Statistics Group 4: Non-partitioned pricing with higher Amount Paid for Groceries  
(*n* = 52)

Variable	<i>M</i>	<i>SD</i>	<i>Med</i>	<i>Min</i>	<i>Max</i>
Attitude Towards the Offer <sup>a</sup>	4.49	1.76	5.00	1.00	7.00
Price Fairness Perception <sup>b</sup>	4.53	1.68	4.67	1.00	7.00
Age <sup>c</sup>	22.33	2.42	22	17	29
Gender <sup>d</sup>	1.56	N/A	N/A	N/A	N/A
Average Spend <sup>e</sup>	3336.54	1581.89	3000.00	500.00	8000.00
Monthly Grocery Store Visits <sup>f</sup>	9.79	5.67	9.50	1.00	24.00
Proportion of Purchases Online <sup>g</sup>	16.80%	43.63%	0.00%	0.00%	100%
Price Familiarity <sup>h</sup>	3.87	1.87	4.00	1.00	7.00

<sup>a</sup> An indexed dependent variable measured on a Likert scale from 1-7 where means that you have a very negative Attitude Towards the Offer and 7 means that you have a very positive Attitude Towards the Offer

<sup>b</sup> An indexed dependent variable measured on a Likert scale from 1-7 where means that you have a very negative Price Fairness Perception and 7 means that you have a very positive Price Fairness Perception

<sup>c</sup> The Age as reported by the respondents of the survey

<sup>d</sup> Measured as a dummy variable where 1 = Male and 2 = Female

<sup>e</sup> The average spend on groceries per month as reported by the respondents of the survey

<sup>f</sup> The average number of grocery store visits (online and offline) per month as reported by the respondents of the survey

<sup>g</sup> The average number of online grocery store purchases per month as reported by the respondents of the survey

<sup>h</sup> An indexed variable measured on a Likert scale from 1-7 where 1 means that you are very unfamiliar with regular delivery fee levels and 7 means that you are very familiar with regular delivery fee levels

## APPENDIX 7. Summary of open-ended question

### Categories and examples of answers to open-ended question

<b>Panel A:</b> Group 1: Partitioned Pricing with lower Amount Paid for Groceries (n=31) <sup>a</sup>		
Category <sup>b</sup>	<i>n</i>	Example answer
Too high delivery fee	18	“Way too high delivery cost, I wouldn’t buy if it was just a 300SEK purchase”
Proximity to grocery store	9	“I think it is fair but it is still something I would not opt for due to my proximity to physical stores”
Delivery fee is reasonable	1	“The delivery fee seems reasonable for getting the products to my house”
Depends on other factors	2	“The fairness and acceptability fully depends on how much groceries I am getting”
Uncategorized <sup>c</sup>	1	
<b>Panel B:</b> Group 2: Partitioned Pricing with higher Amount Paid for Groceries (n=20) <sup>a</sup>		
Category <sup>b</sup>	<i>n</i>	Example answer
Too high delivery fee	10	“The delivery fee is too high in the scenario. I wouldn’t proceed”
Proximity to grocery store	4	“I wouldn’t pay extra for delivery fee since I live 3 minutes away from the store”
Delivery fee is reasonable	3	“The delivery fee can be seen as high but people are willing to pay that for “restaurant” food deliveries and groceries are harder to carry, so I would say it’s reasonable.”
Depends on other factors	1	“If it is very heavy and bulky I think this is reasonable. Otherwise, I would go by Myself.”
Uncategorized <sup>c</sup>	2	

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**Panel C: Group 3: Non-Partitioned Pricing with lower Amount Paid for Groceries (n=24)<sup>a</sup>**

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Category <sup>d</sup>	<i>n</i>	Example answer
Too high delivery fee	9	“With an “upcharge” of 69kr on goods that cost 300kr I believe this isn’t a good deal”
Proximity to grocery store	2	“Live very close to the grocery store, so the value is very small.”
Delivery fee is reasonable	4	“I think the price is reasonable given the market value plus added convenience for some customers”
Believes that delivery fee is 0	2	“Great that the delivery fee is 0”
Questioning the Non-Partitioned strategy	6	“A bit sneaky with the Delivery fee is sort of “hidden”.”
Uncategorized <sup>c</sup>	1	

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<b>Panel D: Group 4: Non-Partitioned Pricing with higher Amount Paid for Groceries (n=20)<sup>a</sup></b>		
Category	<i>n</i>	Example answer
Too high delivery fee	4	“The upcharge is probably why I don’t buy online”
Proximity to grocery store	1	“I would rather shop offline if the fee is this high”
Delivery fee is reasonable	2	“I shop online because of the convenience. The delivery fee is a part of the package and I’m used to it.”
Depends on other factors	2	“It’s difficult to know if the price is right without knowing what goods I have bought.”
Believes that delivery fee is 0	2	“I will rather pay a premium for online shopping than paying for delivery”
Questioning the Non-Partitioned strategy	7	“Adding it as a surcharge feels unfair. I would happily pay if it was explicit.”
Uncategorized <sup>c</sup>	2	

<sup>a</sup> The total number of responses to the open-ended question for this group

<sup>b</sup> The categories that was only appearing for participants that got a Non-Partitioned alternative has been removed from this panel as they are not relevant

<sup>c</sup> Some answers did not fall under any of the categories for the most common answers and were thus not included in this table other than the *n*

<sup>d</sup> The category “Depends on other factors” was removed from this panel as no answers fell under that category

## APPENDIX 8. Assumptions for ANOVA

### Results from Shapiro-Wilk Normality test

Variable	<i>W</i>	<i>p</i>
Attitude Towards the Offer	.99	.06 <sup>a</sup>
Price Fairness Perception	.99	.26 <sup>a</sup>

Significance codes: ‘\*\*\*’ < .001 ‘\*\*’ < .01 ‘\*’ < .05

<sup>a</sup>  $p > .05$  accepts the null hypothesis of normality

## Results from Levene's test for Heteroskedasticity

Variable	<i>Df</i>	<i>F-value</i>	<i>p</i>
Attitude Towards the Offer	3	5.82	< .001***
Price Fairness Perception	3	1.25	.29 <sup>a</sup>

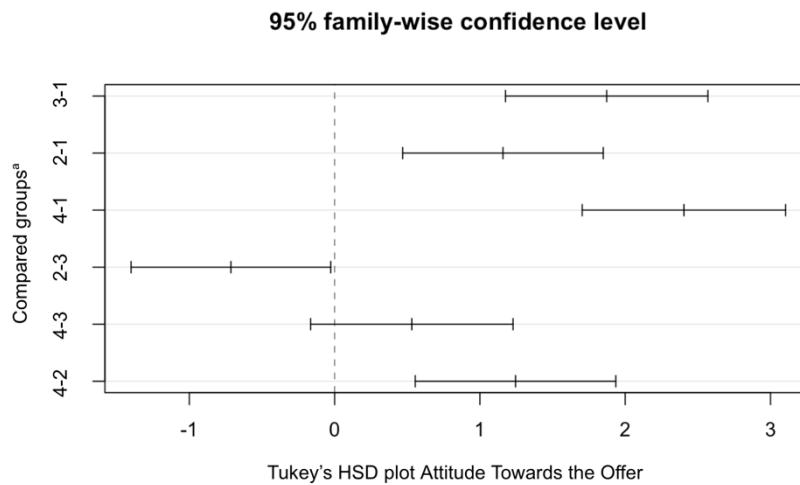
Significance codes: '\*\*\*' < .001 '\*\*' < .01 '\*' < .05

<sup>a</sup>  $p > .05$  accepts the null hypothesis of homoskedasticity

**Note:** To test the assumption of Homoskedasticity for the ANOVAs, a Levene's test is conducted (as opposed to a Breusch-Pagan test which is used to test for Homoskedasticity in the linear regression). While it would have been possible to use the same test for both analyses, the Levene's test is designed, and more commonly used, for ANOVAs and thus deemed more appropriate.

## APPENDIX 9. Plots for Tukey's HSD test

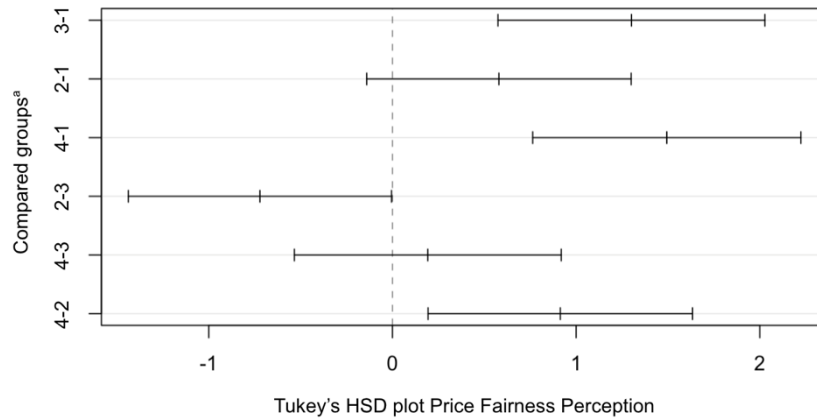
### Attitude Towards the Offer



<sup>a</sup> Group 1: Partitioned Pricing with lower Amount Paid for Groceries, Group 2: Partitioned Pricing with higher Amount Paid for Groceries, Group 3: Non-Partitioned Pricing with lower Amount Paid for Groceries, Group 4: Non-Partitioned Pricing with higher Amount Paid for Groceries

## Price Fairness Perception

95% family-wise confidence level

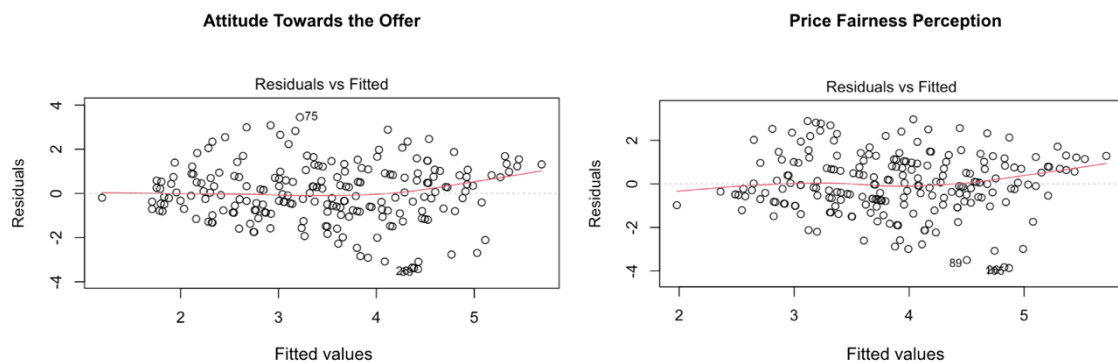


<sup>a</sup> Group 1: Partitioned Pricing with lower Amount Paid for Groceries, Group 2: Partitioned Pricing with higher Amount Paid for Groceries, Group 3: Non-Partitioned Pricing with lower Amount Paid for Groceries, Group 4: Non-Partitioned Pricing with higher Amount Paid for Groceries

**Note:** Tukey's HSD test plotted for the testing if means between the different manipulation groups differ significantly in terms of Attitude Towards the Offer and Price Fairness Perception. Values on the y-axis display which manipulation groups that have been compared. Values on the x-axis indicate the differences in mean between the compared groups. Means are considered significantly different at a 95% confidence level when the line representing the confidence interval does not cross the 0-point of difference in means.

## APPENDIX 10. Assumptions for Linear Regression

### RVF-plots for Linearity



**Note:** When the residuals are spread equally around an approximately horizontal line without distinct patterns (red line is approximately horizontal at zero), there is a good indication of a linear relationship.

## Results from Shapiro-Wilk Normality test

Variable	<i>W</i>	<i>p</i>
Attitude Towards the Offer	.99	.36 <sup>a</sup>
Price Fairness Perception	.99	.12 <sup>a</sup>

Significance codes: '\*\*\*' < .001 '\*\*' < .01 '\*' < .05

<sup>a</sup>  $p > .05$  accepts the null hypothesis of normality

## Results from Breusch-Pagan test for Heteroskedasticity

Variable	<i>Df</i>	<i>BP</i>	<i>p</i>
Attitude Towards the Offer	5	9.00	.10 <sup>a</sup>
Price Fairness Perception	5	1.78	.88 <sup>a</sup>

Significance codes: '\*\*\*' < .001 '\*\*' < .01 '\*' < .05

<sup>a</sup>  $p > .05$  accepts the null hypothesis of homoskedasticity

**Note:** To test the assumption of Homoskedasticity for the linear regressions, a Breusch-Pagan test is conducted (as opposed to a Levene's test which is used to test for Homoskedasticity in the ANOVA). While it would have been possible to use the same test for both analyses, the Breusch-Pagan test is designed, and more commonly used, for Linear Regressions and thus deemed more appropriate.

## Results from VIF-test for Multicollinearity

Variable	<i>VIF</i>
Price Partitioning <sup>a</sup>	1.03
Amount Paid for Groceries <sup>b</sup>	1.01
Age <sup>c</sup>	1.05
Gender <sup>d</sup>	1.02
Price Familiarity <sup>e</sup>	1.07

<sup>a</sup> Measured as a dummy variable where 1 = Partitioned Pricing and 2 = Non-Partitioned Pricing

<sup>b</sup> Measured as a dummy variable where 1 = Lower Amount Paid for Groceries (300 SEK) and 2 = Higher Amount Paid for Groceries (600 SEK)

<sup>c</sup> The age as reported by the respondents of the survey

<sup>d</sup> Measured as a dummy variable where 1 = Male and 2 = Female

<sup>e</sup> An indexed variable measured on a Likert scale from 1-7 where 1 means that you are very unfamiliar with regular delivery fee levels and 7 means that you are very familiar with regular delivery fee levels