To Add or Not to Add? On the Perception of Discounts in Online Shopping

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Abstract

With the expansion of e-commerce and the wide variety of products offered, businesses employ various marketing strategies to attract prospective consumers. Nowadays, many online shops offer indirect discounts via contingent free shipping policies. This study investigates the impact of shipping costs and recommendations of products on the checkout screen on consumers' perception of discounts and their purchasing decisions. I conduct an online experiment and find that the combination of shipping costs and recommended products influences consumers' interpretation of discounts offered and their purchasing decisions. The findings suggest that consumers treat indirect discounts (via free shipping) and direct discounts in the same way. The results highlight the importance of considering shipping costs and recommended products, as well as the relevance of understanding consumer behavior in designing effective discount strategies for online shops.

Keywords: Shipping costs, recommended products, discounts, perception, online shopping.

Author's Declaration

I, the undersigned, Ženja Eremić, candidate for MA degree in Economic Policy in Global Markets, declare herewith that the present thesis is exclusively my own work, based on my research and only such external information as properly cited in bibliography. I declare that no unidentified and illegitimate use was made of the work of others, and no part of the thesis infringes on any person's or institution's copyright. I also declare that no part of the thesis has been submitted in any form to any other institution of higher education for an academic degree.

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Introduction

Nowadays many online shops try to attract consumers via indirect discounts. For instance, it is common practice to offer free shipping to consumers who spend more than a certain amount, i.e. through contingent free shipping policies (Lewis, 2006; Chen & Ngwe, 2018; Guo et al., 2020; Hemmati et al., 2021). Moreover, at the checkout, consumers are typically reminded of the free-shipping threshold and presented with some recommended products that would increase their total basket value and shift them beyond this bar. Free shipping, thereby, serves as an indirect discount on the recommended product's price.

The objective of this thesis is to explore and understand how consumers perceive such indirect discounts (through free shipping), as it is a common experience in online shopping. Precisely, I am interested to see how discounts affect consumers' demand for recommended products. Simply put, I aim to elicit the impact of different discounts, both direct and indirect, on the probability of adding a recommended item to the basket. This allows me to draw inferences on the consumer perception of direct and indirect discounts.

First, to formalize how the presence of shipping costs influences consumer choice, I develop a model of consumer behavior. Imagine a consumer who arrives at the checkout screen with a shopping basket full of goods. For instance, the value of the current basket is £25. The consumer is now recommended to add another product to the basket. This product costs either £3, £5, or £10. Arguably, the consumer's decision whether to add this recommended product to the basket will depend on whether she can save on shipping costs by doing so. To test this hypothesis, I implement two treatments - one with and one without shipping costs. In the treatment with shipping costs, the consumer has to pay shipping costs of £5, unless she spends at least £30 in total. Hence, by adding a recommended product that costs at least £5 to the basket, she can save on shipping costs. Whereas, in the other treatment, shipping costs are zero. The hypothesis is that consumers, who are in the treatment with shipping costs, will be more likely to add a recommended product to their basket, if the price of the product is the same as or higher than the cost of shipping.

Furthermore, I am interested to see whether consumers have an aversion towards paying for shipping costs. To test this, I compare the probability to add the recommended product across treatments when its price is effectively the same. For example, let us consider the treatment without shipping costs where the recommended product is priced at £5. In this case, the product effectively costs £5 because there are no shipping costs. Now consider the treatment with shipping costs. If the product costs £10 and the consumer saves £5 on shipping fees by adding it, the effective price of the recommended product is £5. If consumers have no aversion toward paying shipping fees, they would choose to add the product in similar proportions in both treatments, as the effective price of the recommended product remains the same.

To test my hypotheses, I conduct an experimental study to observe the hypothetical purchasing decisions of consumers. In total, there were 189 participants from the United Kingdom, recruited through the online platform Prolific. Participants are presented with a hypothetical online grocery shopping experience, where they have a shopping basket worth £25 and are asked if they are willing to add a basket of fruits (a recommended product) for a specific price.

My experimental findings suggest that people treat direct and indirect discounts in the same way. A similar proportion of participants added the recommended product in the treatment with shipping costs compared to the treatment without shipping costs when its price was effectively the same. In the treatment with shipping costs, the presence of shipping costs creates an indirect discount on the product, making its effective price the same as in the treatment without shipping costs. This indicates that people understand indirect discounts well and consider the effective price of the recommended product when making purchasing decisions. The effective price plays a significant role in consumers' decision-making process. Additionally, the findings suggest that people are more likely to add the recommended product if they can get it for free through shipping costs.

The importance of this research lies in the exploration of how the expectations and decisions of consumers are formed and whether and how these could potentially be utilized

by companies. I contribute to the connection between behavioral sciences and economics by incorporating the perception of consumers when faced with different discounts. The novelty of this research lies in the fact that I change the price of the recommended product to study the relationship between shipping costs and product recommendation. This allows me to find the potential effect of indirect and direct discounts on consumer perception and purchasing decisions.

The paper is structured as follows. First, I begin with a brief literature review, then I continue by explaining the simple model of consumer decision-making and my hypotheses. Then, I provide a detailed explanation of the experimental design and methodology, followed by the results and discussion. Finally, I summarize the thesis with policy implications, study limitations and a conclusion.

Literature Review

5.1 Free shipping policies and recommended products

Most research until now has focused on factors such as a) attention (Bertin & Wathieu, 2008); b) website layout (Lee & Hosanagar, 2019); c) contingent free shipping policies and recommendations (Lewis, 2006; Guo et al., 2020; Li et al., 2019); d) deep learning (Guan et al., 2019; Chaudhuri et al., 2021) and consequently their effects on purchasing decisions of consumers and company sales. Here, I focus on the literature about shipping costs, recommended products and consumer behavior.

By no means I am the first one to explore the relationship between recommended products and shipping costs for understanding consumer behavior. Lewis (2006) concluded that incentivizing consumers to increase their orders, such as to add a recommended product, outperforms strategies as free shipping regarding profit-making in e-commerce platforms. Guan et al. (2019) proposed a model for consumer purchase behavior in e-commerce. This deep learning model integrates two parts - the product representation (multiple information such as image, description and reviews of recommended products) and the user preferences (based on cognitive styles, *"verbalizers such as people who process information in words", "visualizers who process information from pictures"* (Guan et al., 2019:60) and their historical purchasing behavior). Their findings suggest that the deep learning model, because of its cognitive style input, is effective in designing recommendation products for consumers and leads to more successful purchases than other deep learning models mentioned in their paper. Chaudhuri et al. (2021), similar to Guan et al. (2019), found that deep learning models are effective in predicting consumers' purchasing decisions, in particular when they integrate customer characteristics, their interaction with the platform and the platform features. They used variables such as the history of purchases (*"days since the last purchase"*), session start, and duration of the interaction as predictors of purchase decisions of consumers.

Guo et al. (2020) demonstrated how the shipping fee discount with recommendation

systems can be used to maximize sales in the world of e-commerce. They argued that sellers could take advantage of the combination of shipping fee discounts with recommendation systems with three experiments. This paper was of great relevance to my research. By focusing on the discount on shipping costs, they found that the demand for the product which has a shipping-fee discount is higher than the one without, on an online shopping platform. Further, the results showed that people are more likely to add a recommended product when it is offered besides the product that has a shipping-cost discount. Whereas Lee & Hosanagar (2019) explored the effect of recommendation algorithmic systems on the variety of products offered online in a randomized field experiment.

Li et al. (2019) analyzed the association between add-on item, the contingent free shipping threshold and recommendation services in their implications for e-commerce. Contrary to my findings, they found that companies that introduce recommendation services, increase their contingent free shipping threshold and shipping fees because of the costs, making the recommended product less attractive and lowering its demand. This leads to higher internal platform competition, reducing overall profits of e-commerce businesses and reducing purchases.

5.2 Model of decision-making in online shopping

Three stage model of the decision-making process, as proposed by Kanuk & Schiffman (2000) and further developed by Smith & Rupp (2003), consists of the following steps: a) input - the identification of the problem or need (through external influences such as marketing or social influence); b) experience - information search and evaluation of alternatives (this step is affected by emotions, motivation and perception); and finally c) output - the final purchasing decision and post-purchase behavior. To put it differently, decision-makers in online shopping weigh the costs and benefits of a potential purchase, influenced by the context and their environment, and their psychological attributes. How safe one perceives the online shopping experience, how urgent one perceives the need for the product, how well one perceives the offer, and how much the website's values match with the values and preferences of consumers are just some of the factors that can affect

one's purchasing decisions.

5.3 Price transparency and cost announcement

Evidence from related literature suggests that pricing strategies and framing play a significant role in the selling and purchasing process, influencing the layout of choices and consequently the decisions of buyers.

First, Shampanier et al. (2007) proposed the idea that people value free products (with a zero price) differently, overestimating the benefits associated with them. After finding supporting evidence with three experiments about (in)expensive chocolate and its price reduction, they argued that the price of zero evokes a higher positive affect in consumers, and thus they prefer the zero-priced product as in this case there is nothing to lose. Bertin & Wathieu (2008) argued that the format of price announcements affects the attention of consumers to product features. When consumers see all-inclusive prices (with all costs), their assessment of and attention to product features is lowered, while price partitioning makes them more sensitive to the features of the product. Similarly, if the information regarding shipping costs is not transparently disclosed to the consumers, they might opt out from buying a certain product. Dertwinkel-Kalt, Köster & Sutter (2019) examined how shrouding or partitioning prices increases the demand in online shopping experience. In their experiment, consumers have low costs for canceling their purchasing process since the process is short. After conducting an online experiment with a German cinema website, they found that including surcharges (shrouding) in the price of a 3D movie increases the probability that consumers continue with their purchasing process. Whereas, price partitioning (separating costs such as shipping and taxes from the price) has a small effect on the probability to initiate a purchase. However, actual purchase rates are neither associated with the partitioning nor with the shrouding of prices.

To summarize the Literature Review, unlike some previous studies, the current study combines recommended products at three different price magnitudes with the presence of shipping costs to explore consumers' understanding of different discounts. This study

aims to contribute to the existing literature by examining consumers' perception of direct and indirect discounts through the combination of recommended products and shipping costs. By conducting a hypothetical experiment resembling an online grocery shopping experience, I intend to explore the relationship between recommended products, shipping costs, and their impact on the probability of adding recommended products to the basket. This study regards the combination as a marketing strategy that can be utilized to meet the needs of consumers and promote company sales.

Model and Hypotheses

In order to see how consumers choose to add a recommended product to the basket, when faced with shipping costs and different prices of recommended product, this thesis proposes a model explained further below. I develop a model describing some factors that affect purchasing decisions of consumers, when faced with recommended products with price p and the presence or absence of shipping costs s. For this, the consumer can get utility u from adding the product, besides the utility from the initial basket b, both of which are subjective utilities. The model presents, by assumption, a linear utility function for consumers maximizing their utility. I assume that consumers are rational decision-makers, meaning that they add the product only when its utility is equal to or higher than the price, and they make their decisions based on their preferences and available information. The addition of shipping costs introduces an additional constraint, where consumers must consider the trade-off between the utility of adding the product and the cost of shipping. They weigh the costs and benefits of each action and maximize their utility. Next, I present the specifications, explanations and examples for the two treatments separately.

The price of the recommended product is denoted as p and can take values of £3, £5 and £10. The basket value is £25 for every consumer. The free shipping threshold is denoted as F and is equal to £30. Shipping costs, present in *Treatment 1*, are denoted as s. u is the utility of the recommended product, whereas b is the utility of the basket. Finally, v is the price of the basket. All of the variables are present in both Treatment 1 (with shipping costs) and Treatment 2 (without shipping costs) models, except for the shipping costs.

6.1 Treatment 1 with shipping costs

In Treatment 1 with shipping costs, consumers can choose to add a recommended product with price points of £3, £5, and £10, while facing shipping costs as an additional factor influencing their decision. The utility function has three possible outcomes, depending on

the consumer's purchasing decision:

1. If the consumer chooses to add the recommended product to their basket and faces shipping costs s, their utility is determined by the difference between the basket utility b and the price of the basket v, i.e., $(b - v)$, plus the utility u they derive from adding the product, minus the price of the product p, and the shipping costs s. More formally: $(b - v) + (u - p - s)$. This occurs when the total sum of the price of the product p and the basket price v is less than the free shipping threshold F (i.e., $v + p < F$, where $F =$ £30). In this case, the consumer will be charged for shipping costs of £5.

2. If the consumer chooses to add the recommended product to their basket and does not face shipping costs, their utility is determined by the difference between the basket utility b and the price of the basket v, i.e., $(b - v)$, plus the utility u they derive from adding the product, minus the price of the product p. More formally: $(b - v) + (u - p)$. This occurs when the total price of the product p and the basket price v are equal to or greater than the free shipping threshold F.

3. If the consumer chooses not to add the recommended product to their basket but faces shipping costs s, their utility is determined by the difference between the basket utility b and the price of the basket v, i.e., $(b - v)$, minus the shipping costs s. Since there is no utility from adding the recommended product, the utility function does not include the u variable. More formally: $(b - v) - s$.

Therefore, I conclude that the consumer will add the recommended product if and only if the utility of adding the product u is equal to or higher than the recommended product price p, when the sum of the price of the basket and the product price is less than the free shipping threshold of £30, i.e., $v + p < F$. If the sum of the price of the basket and the product price is greater than or equal to the free shipping threshold of £30, i.e., $v + p \geq F$, the consumer adds the recommended product if and only if the utility is equal to or higher than the difference between the price of the recommended product p and the shipping costs s. More formally: $u - p \geq -s \Leftrightarrow u \geq p - s$.

$$U_{t1} = \begin{cases} b - v + (u - p - s) & \\ b - v + (u - p), & \text{if } \begin{cases} v + p < F \text{ and add} \\ v + p \geq F \text{ and add} \end{cases} \\ b - v + 0, & \text{if } \begin{cases} \text{do not add the product} \end{cases} \end{cases}$$

6.2 Treatment 2 without shipping costs

In Treatment 2 without the presence of shipping costs, the decision-making process is simpler. The consumer has the same choice as in Treatment 1, but consider the utility of adding the product based solely on the price of the product and the basket utility. The utility function has two possible outcomes, depending on the consumer's purchasing decision:

1. If the consumer chooses to add the recommended product to their basket, their utility function is determined by the difference between the basket utility b and the price of the basket v, i.e., $(b - v)$, and the utility derived from buying the product u minus the price of the recommended product p.

2. If the consumer does not choose to add the recommended product, their utility function is determined only by the difference between the basket utility b and the price of the basket v, since the utility u derived from adding the product is non-existent (zero in this case) because of the consumer's initial choice.

Therefore, I conclude that the consumer will add the recommended product in Treatment 2 if and only if the utility of the product u is equal to or higher than its price p.

$$U_{t2} = \begin{cases} b - v + (u - p), & \text{if } \begin{cases} \text{add the product} \\ \text{do not add the product} \end{cases} \\ b - v + 0, & \text{if } \begin{cases} \text{do not add the product} \end{cases} \end{cases}$$

To summarize, I model that the utility of adding a recommended product to the basket depends on the following parameters: a) the basket utility for the consumer and its price, c) the price of the product itself and its utility and d) the presence of shipping costs in Treatment 1 and the absence in Treatment 2. When shipping costs are larger than the product price, I predict that a lower proportion of people would add the product. In other words, more consumers would choose to add the recommended product if and only if the utility of adding it is equal to or higher than the price of the product with the presence of shipping costs. When the sum of the price of the basket and the recommended product price is equal to or greater than the free shipping threshold of £30, consumers may be more likely to add the recommended product and avoid paying for the shipping costs. In Treatment 2, I predict that the consumers would add the recommended product if and only if the utility of adding it is equal to or higher than the price of the recommended product (£3, £5, £10), because there are no shipping costs present.

6.3 Example 1 - With shipping costs

Sarah is shopping online and comes across a recommended product priced at £3. She considers adding it to her basket, but she realizes that her current basket price is £25. Since the total sum of the basket price (£25) and the recommended product price (£3) is less than the free shipping threshold F (£30), she needs to account for the shipping costs. The shipping costs in this experiment are always £5.

In this scenario, Sarah evaluates the utility of adding the recommended product. If

she adds it, her utility function would be:

$$U_{t1} = (b - v) + (u - p - s) = (b - £25) + (u - £3 - £5) = b - £33 + u$$

Simply put, Sarah's general utility function depends on the perceived basket value and the utility of adding the product minus the sum of the shipping costs (£5), price of the product (£3) and basket price (£25), which in this case is £33 in total.

If the utility derived from adding the product is zero, Sarah decides not to add the recommended product to her basket. Her utility function without the product would be:

$$U_{t1} = (b - v) + (u - p - s) = (b - £25) + (0 - 0 - £5) = b - £30$$

Simply put, Sarah's general utility function depends on the basket value minus the sum of the shipping costs (£5), and basket price (£25), which in this case is £30 in total.

6.4 Example 2 - Without shipping costs

Sarah is again shopping online and sees a recommended product priced at £10. She evaluates whether to add it to her basket, considering her current basket price of £25. Since this treatment does not involve shipping costs, she only needs to compare the utility of adding the product to its price.

In this case, Sarah evaluates the utility of adding the recommended product. If she adds it, her utility function would be:

$$U_{t2} = (b - v) + (u - p) = (b - £25) + (u - £10) = b - £35 + u$$

Simply put, by adding the product, Sarah's main utility function depends on the perceived basket value, utility of adding the product minus the price of the basket (£25) with a £10 recommended product inside.

If the utility derived from adding the product is zero, Sarah decides not to add the recommended product to her basket. Her utility function without the product would be:

$$U_{t2} = (b - v) + (u - p) = (b - £25) + 0 - 0 = b - £25$$

Simply put, without adding the product, her utility function depends only on the perceived basket value minus the basket price of £25.

With these two examples, I attempt to illustrate how the utility functions are applied in different treatments. In Example 1, the presence of shipping costs affects Sarah's decision, and she needs to consider both the product price and the shipping costs. Shipping costs can serve as an indirect discount on the product. In Example 2, where there are no shipping costs, Sarah only evaluates the utility of adding the product based on its price. The utility functions capture these considerations and allow for the comparison of different outcomes based on the consumer's decision to add or not to add the recommended product.

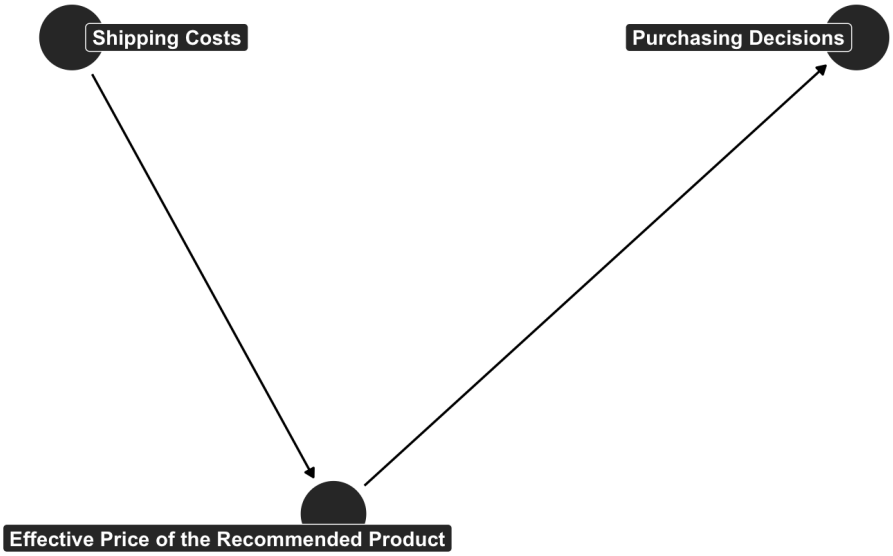
6.5 Research Questions

1. When shopping for products, are consumers more likely to add a recommended product when shipping costs are present?
2. How well do consumers understand indirect discounts to products through shipping costs versus direct discounts?

6.6 Hypotheses

I hypothesize that one important variable which enhances purchasing decisions of consumers, besides the presence of shipping costs and its announcement, is the price of the recommended product together with shipping costs. I aim to test how different discounts, both direct and indirect, affect the probability of adding a recommended item to the basket. The following directed acyclic graph shows the relationship between the variables of

interest. Shipping costs serve as an indirect discount on the recommended product's true price, creating its effective price, which further affects purchasing decisions of consumers.



First, I aim to elicit how individuals understand such discounts in different conditions to potentially find an answer to my research questions. When people add a recommended product to their basket, their decision is not solely based on the necessity of the product but also on their interpretation of the recommendation (i.e. as a discount). For instance, if a website announces that shipping costs are free for purchases above £30, do individuals see the recommended product as an indirect discount through shipping costs?

I hypothesize that consumers will be more likely to add a recommended product in Treatment 1 with shipping costs, if its price is higher than or equal to the costs, to reach the free shipping threshold of £30.

I test the following four hypotheses regarding consumer behavior and the demand for a recommended product:

1. If the recommended product costs £3, the share of subjects adding it to their basket is the same in the treatments with and without shipping costs, i.e. there will be no treatment effect.

2. If the recommended product costs £5, then in the treatment with shipping costs (£5) more subjects add it.

3. If the recommended product costs £10, then the share of subjects adding it to their basket is higher in the treatment with than without shipping costs.

4. If the recommended product costs £10 in the treatment with shipping costs, then the share of subjects adding it to their basket is similar as in the treatment without shipping costs, where the product costs £5.

Methodology and Experimental Design

7.1 Study type

The type of study was a hypothetical experiment that aimed to uncover how adult participants make purchasing decisions in an online setting, specifically when doing their grocery shopping online. The experiment incorporated a between-subjects design with randomized experimental conditions. Unlike in the within-subjects design, different participants were assigned to different experimental treatments, but each of them was presented with only one treatment. In this way, I was able to analyze the effect between the control and treatment group, that is, the effect of shipping costs and recommended product price on the purchasing decisions of consumers. I was able to analyze the decisions when the consumer experienced only one experimental treatment, with or without shipping costs. Further, any observed differences between the two groups were removed with randomization, allowing me to effectively assess the association between variables of interest. There were two main experimental treatments, namely one with the presence of the shipping costs and one without the presence of the shipping costs, combined with a recommended product offered at three different prices. Two independent variables were manipulated: the presence of shipping costs and the price of the recommended products.

Before registering it online, the study was approved by the members of the Ethical Research Committee, ensuring that it is in line with ethical standards. The study, with its experimental design, research questions and methodology, was registered online in the Open Science Framework (OSF) registry, "scholarly repositories built for sharing, searching, and collecting registrations of research" [1]. I received a grant from the Economics and Business Department at Central European University to cover the costs of paying the participants.

The experiment took place online in March 2023 and consisted of three stages: in the first block, participants were given instructions for the nature of the experiment; in the

[1]For more information: `https://osf.io/fpy24/?view_only=dad229b239ba46099cc1d61ab709cd95`

second block they were asked to answer questions regarding their purchasing decisions and expectation of shipping costs in the hypothetical experiment. The third block consisted of voluntary demographic questions such as age, gender and status.

Before running the actual study, I ran a pilot study to determine the sample size and identify some potential issues that might arise due to the experimental design. The estimated minimum sample size for the hypothetical experiment was 180 participants with a 5% significance level. Participants were recruited over the Prolific platform, a crowdsourcing platform used for online recruitment in academic studies. They were required to complete a survey designed in Qualtrics, an online programme for designing surveys. To filter out bots, participants completed a ReCAPTCHA before starting the survey. They were able to withdraw consent at any time and their data was anonymized using their Prolific ID, a unique participant identifier. As the first step, participants were shown a screen with the introduction, instructions and consent, indicating that they could decide to participate or not and withdraw their consent at any time.

The minimum survey progress requirement was 80%, meaning that the participants were required to fill out the experimental part of the survey, up until demographic questions. Demographic questions were voluntary. Data from four participants was discarded, as they did not satisfy the minimum progress requirement and did not fill out the experimental part of the study. In total, there were 185 participants. On average, participants needed approximately two minutes (128 seconds) to complete the survey and were paid £0.75 for their participation, independent of their answers. They were aware of the payment from the very beginning. In the experiment, subjects were randomly assigned to variations of two treatments explained in detail below. The participants remained unaware of their specific treatment group.

7.2 Experimental conditions

The experiment presented participants with a layout resembling an online grocery shopping experience, specifically the online shopping basket step. A total of six treatments

were implemented by varying the independent variables: the presence of shipping costs and the price of the recommended product. In half of the treatments, shipping is free. In the other half shipping is free only if the value of the shopping basket is above £30 and it costs £5 otherwise. Participants were then recommended to add an additional product to their basket. The price of the recommended product is either £3, £5, or £10. To be more precise, each participant was presented with only one experimental treatment, with or without the presence of shipping cost, and within this treatment, with just one price of the recommended product.

The shipping costs announcement was used as a stimulus for making the consumers aware of its existence throughout the experiment. By providing a consumer with an optimal, low number of options to choose from, for instance, to pay the shipping costs or to pay for an additional item, a rational consumer should weigh between the costs and benefits of doing both and should maximize his or her utility. This will be further elaborated on in Data Analysis - Main experimental results section of the thesis.

The first treatment includes a layout with the announcement of the shipping costs and the free threshold (above £30), together with the three price points of the recommended product. The second treatment includes no presence of shipping costs at all, just the three different prices of the same recommended product.

7.3 Variables

Independent variables in this case are the presence of shipping costs and the price of recommended products. The main variable that is manipulated is the presence of shipping costs. The consumer in Treatment 1 with the presence of shipping costs, is aware of the threshold needed for free shipping and therefore might keep this in mind when adding products and choosing a course of action. For instance, the screen with the sentence "The value of your current basket is £25. If you spend at least £30, shipping is free" is presented to respondents. Participants in Treatment 2, without shipping costs, were not exposed to any shipping cost information ("The value of your current basket is £25.

There are no shipping costs"), thus the consumer is not aware of the threshold needed for free shipping. The study also manipulates the price of the recommended product, which is the same in both experimental treatments. The recommended product is presented at three different price points: £3, £5, and £10.

Each individual was presented with a binary choice (Yes/No) question such as "The value of your current basket is £25. If you spend at least £30, shipping is free. Would you like to add a basket of mixed fruits for P?" (survey screenshots are attached in the Appendix), where p=£3, £5 or £10. Participants' responses to this question determined the dependent variable.

7.4 Study design

Besides the questions, the survey included two graphics: one depicting the shopping basket and total costs, and another representing a basket of fruits, aiming to create a more realistic online shopping experience. After the introductory screen, participants were shown a graphic of their shopping basket ("Imagine that you are doing your regular grocery shopping online. After scrolling around and selecting some products, your basket is ready. The total value of your basket is £25."). Then, they were posed a question ("What do you think the shipping costs will be?") to assess their perception of shipping costs for a £25 basket. Further, they were given information about the presence (Treatment 1) or absence (Treatment 2) of the shipping costs and finally, they could choose to add a recommended product or not. Based on their answer ("Yes" or "No"), I pose open-ended questions to participants ("You added the basket of mixed fruits to your order. Please briefly explain your decision." or "You didn't add the basket of mixed fruits to your order. Please briefly explain your decision."), allowing them to justify their choice. Additionally, I included some demographic questions, regarding age, gender and status. The screenshots of the survey are included in the Appendix.

7.5 Participants

Originally, 189 participants from the United Kingdom were recruited over Prolific, an online crowd-sourcing platform. It works in a way that the participants self-select themselves into studies, by receiving a notification on the Prolific and choosing to voluntarily participate in different experiments based on their preferences. I ideally targeted respondents from the United Kingdom, to maintain the stability of the currency in the experiment. Based on voluntary demographic information, most respondents belonged to the 36-55 age group, followed by the 26-35 age group and the 18-25 age group. It is important to note that this small sample may not be representative of the overall population. According to data from Statista, in the United Kingdom in 2022, the 18-24 age group was the biggest group of consumers that buys groceries online, followed by the 24-42 age group. Gender distribution of e-commerce users for 2021 in the United Kingdom, is 51.3% for females and 49% for males, according to the most recent data from the Statista Research Department (2022). Collecting demographic data was not crucial for the current research. There was an option to collect demographic data from participants from the recruitment platform (which is collected upon registration), however, I preferred to offer participants a choice which data to share due to privacy concerns and potential data breaches.

Data Analysis and Results

The main aim of this research was to investigate how consumers treat and respond to discounts, through shipping costs in online shopping, and how this affects their demand for recommended products. I conducted an experimental study to observe purchasing decisions of consumers. They were randomly presented with two treatments, one with the presence of shipping costs and one without, and within these treatments, with different price points of recommended products (£3, £5, £10). Two main hypotheses were formulated:

1. I hypothesized that consumers in Treatment 1 with shipping costs, will be more likely to add a recommended product to their basket, if the price of the product is the same as or higher (£5 or £10) than the cost of shipping, therefore reaching the free shipping threshold.

2. Since the price of the recommended product is effectively the same (£5) in Treatment 2 with p=£5 and without shipping costs and in Treatment 1 with p=£10 and with shipping costs (£5), I hypothesized that consumers would choose to add the product in similar proportions.

8.1 Descriptive statistics

After discarding data from four participants due to incomplete answers, the final sample size became 185. Per treatment, the sample size is as follows. In Treatment 1 there were 94 respondents, whereas in Treatment 2 there were 91. To break these numbers down, in total, in Treatment 1, where the price of the recommended product is equal to £3, there were 33 participants; where the price of the recommended product is equal to £5, there were 31 participants; and where the price of the recommended product is equal to £10, there were 30 participants. In total, in Treatment 2, where the price of the recommended product is equal to £3, there were 30 participants; where the price of the recommended product is equal to £5, there were 30 participants; and where the price

of the recommended product is equal to £10, there were 31 participants. On average, participants needed two minutes to complete the experiment.

Table 1: Sample size

Treatment	**Sample size**
Treatment 1	
£3	33
£5	31
£10	30
Treatment 2	
£3	30
£5	30
£10	31

In total, the sample was characterized by a majority of females (119) versus 61 males, 2 non-binary and one without gender identity. The gender distribution of females was higher in both treatments. Most of the sample identifies as "employed" (126), then 39 as "unemployed". Five participants were "working students" and twelve were "students".

Table 2: Gender and employment status of the sample

Gender	**Count**	**Proportion**
Female	119	64.32%
Male	61	33.00%
Non-binary	2	1.08%
No gender identity	1	0.54%
Employment Status	**Count**	**Proportion**
Employed	126	68.11%
Unemployed	39	21.08%
Working students	5	2.70%
Students	12	6.49%

Note: Data from some participants with incomplete answers was discarded, therefore the total sums up to less than 100%.

8.2 Main experimental results

First, to see the proportion of people who added and who did not add the product in the two treatments (one with shipping costs and one without), I count the number of

answers for "Yes" and "No" per each recommended product price. For *p=£3* in total, there were 44 participants who chose to add a product and 19 who did not choose to add, regardless of the treatment. For *p=£5*, the total number of "Yes" responses is 44 and the total number of "No" responses is 17. For *p=£10*, the total number of "Yes" responses is 28 and the total number of "No" responses is 33. Therefore, I can conclude that the total number of "Yes" and "No" responses varies across different levels of recommended product prices. A higher number of people chose to add the product when the price was three and five, regardless of the treatment group they belonged to.

After cleaning the dataset in RStudio statistical programme, I conducted three z-tests of proportions to see if there was a significant difference in the proportion of consumers who added the recommended product across the two treatments (Treatment 1 and Treatment 2 with *p=£3*, *p=£5*, *p=£10*). The z-test of two proportions is a statistical test used to compare the proportions of two groups and to assess the statistical significance of the difference between the proportions (*p1* and *p2*). The following is the formula for the Z-test of proportions:

$$Z = \frac{p_1 - p_2}{\sqrt{\frac{p_1(1-p_1)}{n_1} + \frac{p_2(1-p_2)}{n_2}}}$$

- *p1* is the proportion of the first treatment group who successfully added the product with the presence of shipping costs
- *p2* is the proportion of the second treatment group who successfully added the product without shipping costs
- *n1* is the sample size of Treatment 1
- *n2* is the sample size of Treatment 2

For *p=£3*, I found that people were more likely to add the product in the no-shipping option, but the difference was not statistically significant ($p = 0.2604$), 77% versus 64%. For *p=£5*, people were more likely to add the product in the shipping option, 87% versus 57%, and the difference was statistically significant ($p = 0.008047$). This implies that people add the product when they can get it for free through shipping costs. Finally, for

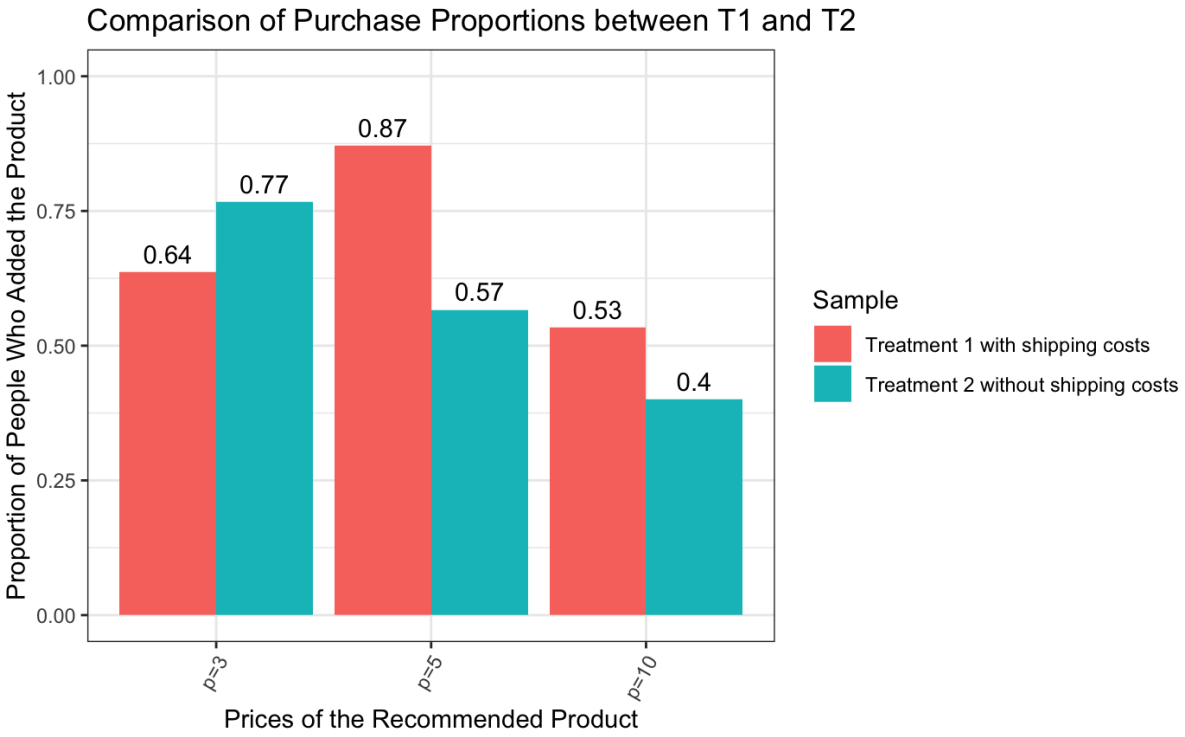
p=£10, people were slightly more likely to add the product in the shipping option, but the difference was not statistically significant ($p = 0.3006$), 53% versus 40%. What is interesting is that a similar percentage of people added the product with shipping costs in T1 where *p=£10*, and with no shipping costs in T2 where *p=£5* (53% and 56%). However, this difference is not statistically significant, implying that consumers understand indirect discounts, through the shipping costs, and direct discounts, through the product itself. In other words, they treat the two discounts the same. Table 3 shows the proportions of successful purchases for each treatment group.

Table 3: Results of proportions tests

Product Price	**Shipping**	**No Shipping**	**p-value**
£3	0.64	0.77	0.2604
£5	0.87	0.57	0.0080
£10	0.53	0.40	0.3006

Figure 1 shows the proportion of successful purchases in treatment groups with and without shipping costs. In Treatment 2 without shipping costs, there is a decreasing demand for the recommended product as its price increases, from 77% to 40%.

Figure 1: Proportion of successful purchases in treatment groups with and without shipping costs



To summarize, these results suggest that the shipping option can have an effect on whether consumers add the recommended product, if they can get it for free through shipping costs. The proportion of people who added the product when it cost £5 is higher in the treatment with shipping costs, as predicted. A similar share of subjects added the product when it cost £10 in Treatment 1 with shipping costs, as in Treatment 2 without the shipping costs, when the same product cost £5. This indicates that there is no evidence that consumers treat these discounts in the two treatments differently. They understand and treat indirect and direct discounts in the same way, as the effective recommended product price in the two treatments is the same, i.e. £5.

8.3 Regressions with the effective price

First, I perform OLS regression with the *effective* price of the recommended product and shipping costs as independent variables. The dependent variable is the binary variable describing if the person added the product to its basket. Besides the three variables, I

run one regression with control variables such as gender (binary variable), age (categorical variable) and status (categorical variable) and one without control variables. Gender is coded as one for females, and as zero for males.

Then, I add the interaction term between the effective price and shipping costs. The effective price variable is created as follows: a) the effective price is £3 for Treatment 1 and Treatment 2, when the true price is £3 for both treatments; b) the effective price is £5 for Treatment 2, when the true price is £5, whereas for Treatment 1 it is 0, because with the shipping cost of £5, basically adding the product that costs £5 (to the basket of £25) and reaching the free shipping threshold (£30) makes it free; c) and finally in Treatment 1, the effective price is £5 when the true price is £10, because of the shipping costs (£5), there is an indirect discount to the product of £5 in the case of adding it, whereas in Treatment 2, the price is £10.

When the shipping costs are zero and the effective price of the recommended product is zero, the probability to add the product is 91% with a p-value of <2e−16, on average. This result is statistically significant. Once I control for the effective price, the effect of shipping costs vanishes, it is statistically insignificant. An increase in the effective price of the recommended product is associated with a decrease in the probability to add the product to the basket by 5 percentage points, on average, holding shipping costs constant ($p = 4.18e$-05).

Table 4: OLS model with the effective price

	OLS model with the effective price	
	Estimate	p-value
(Intercept)	0.91273	<2e-16***
Shipping costs	-0.08229	0.316
Effective price	-0.05647	4.18e-05***

When including the interaction term between the effective price and shipping costs, the probability to add the product decreases by 1.7 percentage points for every increase in price when there are shipping costs. However, this result is not statistically significant ($p = 0.53450$). When there are no shipping costs and the effective price of the recommended

product is zero, then the probability to add the product is 87% on average ($p = 2.07e$-13). I found that with every one-pound increase in the effective price of a recommended product, the probability of adding the product decreases by 5 percentage points, holding shipping costs constant. This result is statistically significant ($p = 0.00238$). This implies that people understand indirect discounts well and that they calculate the effective price of the recommended product. When including the control variables such as age, gender, and status, the results remain consistent (Table 10 in Appendix).

Table 5: OLS model with interaction term

	OLS model with interaction term	
	Estimate	p-value
(Intercept)	0.87738	2.07e-13***
Shipping costs	-0.01512	0.91133
Effective price	-0.05062	0.00238**
Effective price*Shipping costs	-0.01786	0.53450

Furthermore, since the dependent variable is binary, that is, the choice to add the recommended product, logistic regression was suitable in this case. I interpret the coefficient estimates as the log-odds ratio. The following two tables show the results of logistic regression between shipping costs, the effective price of the recommended product and the probability to add it to the shopping basket. When there are no shipping costs and the effective price of the recommended product is zero, the estimated log-odds of the probability to add the recommended product are 1.82 ($p = 6.78e$-05). On average, a one-pound increase in the effective price is associated with a 0.25 decrease in the log-odds of adding the product, when shipping costs are absent. This result is statistically significant ($p = 0.000101$). When including the interaction term between the shipping costs and the effective price of the recommended product (Logit model 2 in Table 7), this association decreases by 0.21, remaining statistically significant ($p = 0.00482$). The interaction term coefficient and the shipping cost coefficient are not statistically significant.

Table 6: Logit model with the effective price

	Logit model with the effective price	
	Estimate	p-value
(Intercept)	1.82912	6.78e-05***
Shipping costs	-0.35881	0.344738
Effective price	-0.25085	0.000101***

Table 7: Logit model with interaction term

	Logit model with interaction term	
	Estimate	p-value
(Intercept)	1.59148	0.00207**
Shipping costs	0.18077	0.79401
Effective price	-0.21246	0.00482**
Effective price*Shipping costs	-0.13545	0.35345

8.4 Regressions with true price

To complement the data analysis section of this research, I perform Ordinary Least Squares Regression (OLS) and Logistic Regression. The dependent variable is the binary variable describing if the person added the product to its basket ("add"), and the independent variables are the presence of shipping costs, a binary variable, and the price of the recommended product taking on values of £3, £5 or £10.

I run an OLS regression to see the relationship between the probability to add a recommended product, the presence of shipping costs and the price of the product itself. OLS regression results show that on average, when there are no shipping costs and the price is held constant (it is zero), the probability to add a product is 80% with a p-value of <2e-16. The probability of adding the recommended product to the basket increases to 90%, by 11 percentage points, when shipping costs are present and the price of the product is held constant. This probability decreases by 4 percentage points when the recommended product price increases by one pound, on average, when shipping is absent. The results for the recommended product price coefficient are statistically significant at a 1% significance level ($p = 0.00191$), whereas the coefficient for the presence of shipping costs is not statistically significant at any level ($p = 0.136$). Including the control variables

such as age, gender and status does not change the signs nor the significance of the original results.

Table 8: Comparison of OLS models

	OLS model		**OLS model with controls**	
	Estimate	p-value	Estimate	p-value
(Intercept)	0.79572	<2e-16***	0.76751	<2.06e-05***
Shipping costs	0.10384	0.13630	0.10723	0.13077
Product price	-0.03711	0.00191**	-0.04006	0.00125**
Gender			0.06343	0.40188
Age			0.01130	0.79636
Status			-0.02530	0.68172

Second, I fit the logistic regression model and determine the effect of independent variables on the probability of adding the product to the basket, controlling for potential confounders such as age, gender and status. With logistic regression, the recommended product price coefficient is -0.16068, and the p-value (0.00231) shows that the relationship is statistically significant at a 1% significance level. This implies that a one-unit increase in recommended product price leads to a 0.16 decrease in the log-odds of adding the product, when shipping costs are absent. The shipping costs coefficient estimate is 0.470, and the p-value (0.134) shows that the relationship is not statistically significant at any significance level. When holding control variables constant, a one pound increase in the price leads to a 0.17 decrease in the log-odds of adding the product, when shipping costs are absent ($p = 0.00146$). Including control variables does not have an effect on the coefficient signs and significance. These results are in line with the ones from OLS regression described in detail above.

Table 9: Comparison of Logit models

	Logit model		**Logit model with controls**	
	Estimate	p-value	Estimate	p-value
(Intercept)	1.27128	0.00117**	1.16347	0.14643
Shipping costs	0.47056	0.13480	0.49953	0.12510
Product price	-0.16068	0.00231**	-0.17633	0.00146**
Gender			0.29388	0.38591
Age			0.05043	0.67252
Status			-0.11923	0.79986

Finally, to see the marginal effect of an increase in the true recommended product price, I compare the results from OLS and Logit (GLM) regressions, performed with *margins* package in RStudio. Regardless of the modeling method, OLS or logit, the results are consistent. The results of the logit model and OLS model suggest that controls do not have any significant effects on the estimates. Without controls, the marginal effect of an increase in recommended product price is -0.0352. The strongest effect is at p=£3 (-0.03), then at p=£5 (-0.035) and at p=£10 (-0.04). The marginal effect of an increase in effective price is negative too (-0.04). These results show that an increase in price is associated with a decrease in the probability to purchase the product on average.

Discussion and Policy Implications

This study explores the perception of discounts in an online shopping environment, specifically focusing on the impact of recommended products and shipping costs on consumers' purchasing decisions. It begins by showing a simple model that incorporates recommended products and the presence of shipping costs as the factors influencing consumers' purchasing decisions. I present supporting results that the combination of shipping costs and the recommended product has an effect on the probability to add the product to the shopping basket. A higher proportion of people added the product when it cost £5 in the treatment with shipping costs (£5) than without because basically, people get the product for free in this treatment. This result is statistically significant. The findings suggest that shipping costs can influence the decision to add the recommended product when it can be obtained for free.

Further, the results from OLS, Logit and Z-test of proportions support the hypothesis that consumers treat indirect and direct discounts similarly. The proportion of people who added the product when its true price was £5, in the treatment without shipping costs, was similar to the proportion in the treatment with shipping costs, where the true price was £10 but the effective price (after accounting for shipping cost discount) was £5. If the product costs £10 and the consumer saves £5 on shipping fees by adding it, the effective price of the recommended product is the same (£5) as in the treatment without shipping costs. The result of the Z-test of proportions between the two treatments (T1 when the effective price is £5 and T2 when the true price is £5) was not statistically significant implying that consumers treat the two prices the same. To put it differently, if the difference between the two treatments was statistically significant, then it would imply that people see the two discounts differently. Finally, the findings demonstrate that there is a decreasing demand for the recommended product, as its price increases, regardless of the presence or absence of shipping costs.

On the other hand, surprisingly, the result for $p{=}£3$ is not consistent with my initial hypothesis that there will be no treatment effect between the two treatments. This is

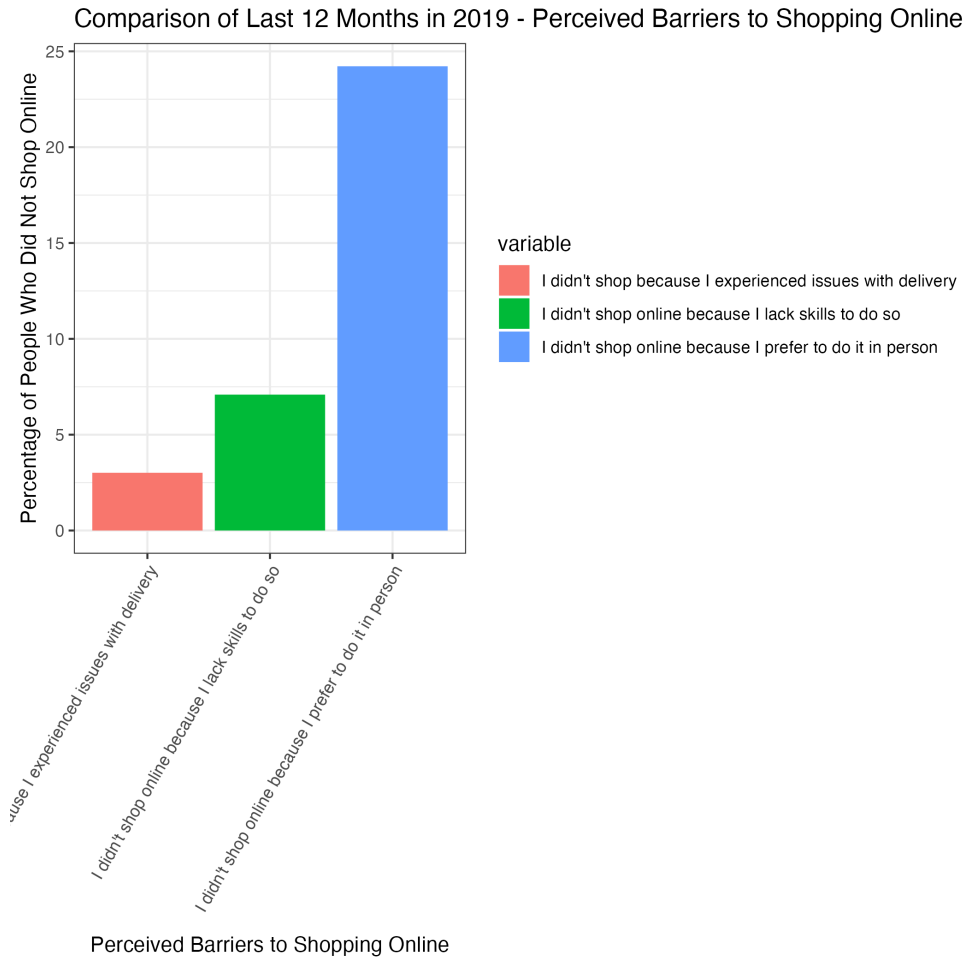
perhaps because consumers might find the basket of fruits for £3 simply a bargain. To sum up, according to the results, consumers understand different types of discounts, provided directly through shipping costs or indirectly on the product price itself. By examining the impact of shipping costs and recommended products on consumer decision-making, I contribute to the understanding of how consumers understand and respond to different discounts. Understanding patterns of consumer behavior is an important aspect of business, as it can inform pricing strategies and help companies to better meet the needs of their consumer.

While traditional ways of shopping have remained popular, because, for instance, some people prefer to see the items in person and make their purchase decision accordingly, online shopping has seen exponential growth over the past couple of decades. Interaction with customers has become important for businesses in providing insights into customers' habits and expectations. This has created an opportunity for businesses to provide free shipping options, personalized recommendations, and similar convenient services to their customers, thereby expanding their groups of followers. Further, to stimulate spending, user-friendly websites have been built for easier navigation and meaningful interaction.

Broadly speaking, rapid digitization of economic activities, especially after the COVID-19 pandemic, has led to an increase in online shopping. According to data from Statista (Pasquali, Statista, 2023) around seventy percent of people from the United Kingdom reported an increase in their online purchases during COVID-19, especially regarding the food sector (Pasquali, Statista, 2023). To see different habits of online shoppers, it was interesting to explore the Eurostat database "Digital Economy and Society" (European Commission, 2015) and its variables such as e-commerce users and perceived barriers to shopping online. The following graph shows the percentage of people who did not shop online in the last 12 months due to perceived barriers such as delivery issues, preferences to shop in person and lack of digital skills. It is evident that despite the progress that has been made in e-commerce such as the ease of delivery, free shipping policies and personalization of purchasing processes, there are still barriers that prevent some people from shopping online. Although the current study does not delve into these barriers, there is

a lot of research potential that companies can use to improve their strategies and profit from e-commerce.

Figure 2: Perceived barriers to shopping online, Eurostat (2019)



The topic of exploring the perception of discounts in an online shopping environment is relevant nowadays in the e-commerce landscape, from both the side of consumers and the side of companies that can exploit this phenomenon. On one hand, consumers are seeking the best deals, when it comes to their purchasing decisions and the variety of options for recommended products, whereas companies are aiming to maximize their profit and gain repetitive buyers.

The results of this study can be used for cost-effectiveness analysis of marketing strategies for companies, emphasizing the fact that people treat indirect and direct discounts in a similar way, they calculate the effective price and that they make purchasing decisions accordingly. The findings suggest that pricing strategies can impact consumer's decisions

to add recommended products to their baskets. In order to make effective predictions, businesses should take drivers of consumer decisions into consideration, in this case, the perception of consumers regarding direct discounts via recommended products and indirect discounts via shipping costs. Further, the presence of shipping costs has a significant effect on consumers' decisions. An increase in true or effective recommended product price, combined with shipping costs, has a tendency to decrease the probability of adding the product.

The results indicate that consumers treat indirect and direct discounts in the same manner. They add the recommended product in similar proportions when its price is effectively the same with shipping costs and without shipping costs. Bearing this in mind, companies can consider offering contingent free shipping policies to increase the demand for recommended products and simultaneously provide an indirect discount on the product via shipping costs or a direct discount to consumers. Finally, as research until now suggested and as this research confirms, announcing that the shipping costs are present from the very beginning, or providing transparent information to consumers regarding discounts to help consumers make informed decisions, also affects the demand for recommended products. Thus, e-commerce platforms may take these findings into consideration when designing their online stores and offering recommended products in combination with shipping costs.

Limitations

The experimental study faces some limitations. First, it does not account for the effect of quantity and variety of recommended products and therefore does not analyze the potential relationship between the two and the willingness to add. Further research could examine the quantity and the variety of products offered on websites, to uncover if there is a potential difference in perceiving discounts when faced with more than one recommended product of the same type or when faced with different types of products. Finally, from the perspective of merchants, product reviews, delivery time and other benefits offered to consumers are not explored in the current research, but have the potential to affect one's decisions. Further research could consider incorporating different forms of shipping costs announcement, i.e. in absolute terms or as a percentage, similarly to what Xia and Monroe (2004) found that the form in which shipping costs are announced changes consumers' preferences.

Secondly, the data analysed in this hypothetical study represents a portion of customers from the United Kingdom who self-selected themselves into the survey on Prolific. The sample size in the study represented only a part of the consumers and can be increased in further research to provide stronger evidence for the phenomenon. Its layout was created to be simple but as close as possible to online grocery shops for the sake of the current study. These results might not be generalizable to other online shopping contexts and types of recommended products offered. Further research should consider employing individual customer characteristics such as history of purchases, trust and loyalty to the online company, together with shipping costs and recommendation products, to identify other predictors of discount perception and successful purchases of recommended products. Perhaps consumers with a positive experience and those who are loyal to one company would be more likely to buy recommended products.

Conclusion

The current study confirms the relevant existing literature which indicates the relationship between the presence of shipping costs, recommended products and the probability to add the product to the shopping basket. First, the findings suggest that shipping costs have an effect on the probability to add a recommended product to the basket when it can be obtained for free. Second, if the recommended product cost £10 in Treatment 1 with shipping costs, then the share of subjects adding it to their basket was similar as in Treatment 2 without shipping costs, where the product costs £5. This is because the effective price through a shipping-cost discount of £5 is the same in the two treatments and indicates that consumers treat indirect discounts and direct discounts similarly. Third, the results from Logit and Ordinary Least Squares regressions show similar trends, indicating that an increase in the true and effective recommended product price is associated with a decrease in the probability to add the product to the consumer's basket on average. Control variables such as age, gender, and status do not have an impact on this association. Moreover, the two regression show similar estimates for the marginal effect on average. The results show that an increase in the effective and the true recommended product price is associated with a decrease in the probability to purchase the product. All in all, this supports the hypothesis that consumers understand and respond to direct and indirect discounts in the same manner when shopping online. Finally, I provide answers to my research questions.

1. When shopping for products, are consumers more likely to add a recommended product when shipping costs are present?

- Yes, consumers are more likely to add a recommended product to their basket when shipping costs are present. In this case, if the recommended product can be obtained for free, that is through an indirect discount through shipping costs, the findings suggest that consumers add the product in higher proportions than in the treatment without shipping costs.

2. How well do consumers understand indirect discounts to products through shipping costs versus direct discounts?

- Consumers understand well direct and indirect discounts and treat them in a similar manner. This is evident from the proportion of people that added the product when it cost £10 in Treatment 1 with shipping costs and Treatment 2 with the price of £5. In the treatment with shipping costs, the presence of shipping costs creates an indirect discount on the product, making its effective price the same as in the treatment without shipping costs. In this case, the recommended product price in two treatments is the same, that is £5, with the indirect discount through shipping costs of £5 in Treatment 1 being equal to the price of £5 in Treatment 2 without shipping costs. There is no significant relationship between the two which would indicate that people take these two types of discounts differently. This finding suggests that consumers perceive the effective price of the recommended product as the same, regardless of whether the discount is applied through shipping costs or the product price itself.

The following research can be further developed with large-scale A/B testing with different price magnitudes, algorithm-based recommendation systems, discounts and the presence of shipping costs to inform pricing and marketing strategies. By using deep learning based on consumer decisions in different contexts and the demand for recommended products, companies can adjust their prices to maximize revenue. Further research could consider exploring factors such as the variety of products offered, perceived trust and loyalty to a certain company to gain a more comprehensive understanding of how people make decisions and how they treat discounts when faced with shipping costs and recommended products.

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12.1 Website links

Directed Acyclic Graphs with ggdag in RStudio
https://cran.r-project.org/web/packages/ggdag/vignettes/intro-to-ggdag.html

Margins package in RStudio

https://cran.r-project.org/web/packages/margins/vignettes/Introduction.html

Z-test of proportions

https://www.statisticshowto.com/probability-and-statistics/hypothesis-testing/z-test/

Appendix

Table 10: OLS model with interaction term and controls

	OLS model		**Logit model with controls**	
	Estimate	p-value	Estimate	p-value
(Intercept)	0.87738	2.07e-13***	0.899303	1.7e-06***
Shipping costs	-0.01512	0.13480	-0.057680	0.675019
Effective price	-0.05062	0.00231**	-0.057582	0.000899***
Effective price*Shipping costs	-0.01786	0.53450	-0.010333	0.725293
Gender			0.070218	0.339504
Age			0.004672	0.914170
Status			-0.041529	0.497145

Figure 3: Step 0: Introduction

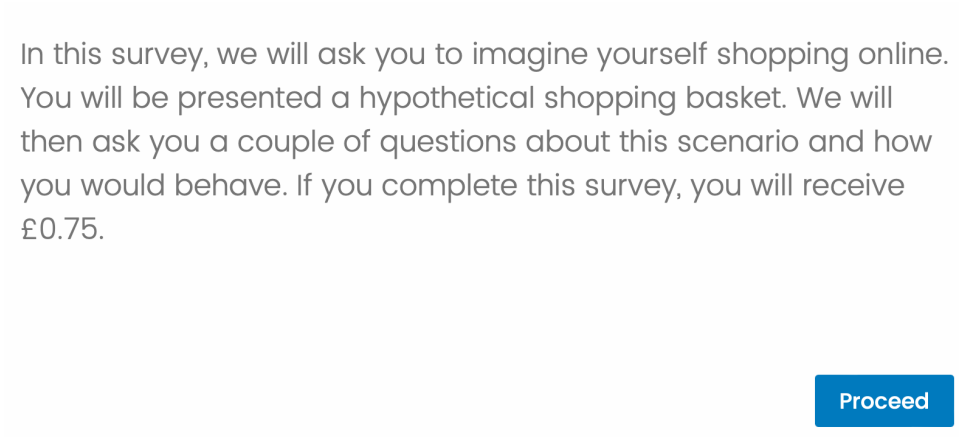

Figure 4: Step 1: Shopping basket

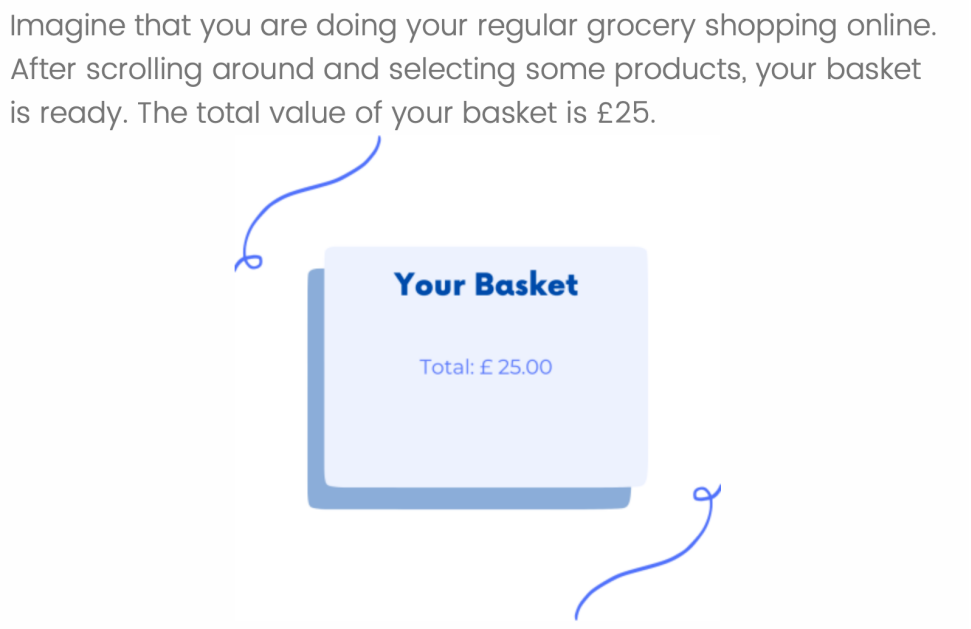

Figure 5: Step 2: Shipping cost perception

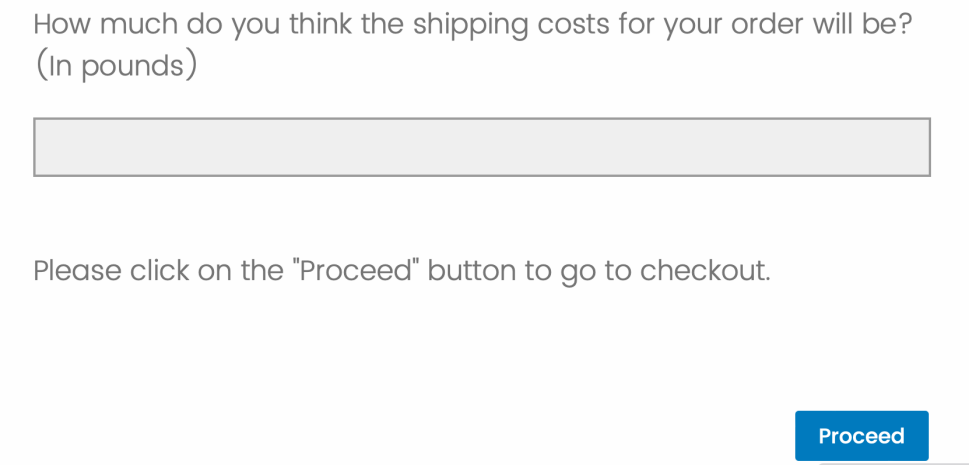

Figure 6: Step 3: Value of the shopping basket

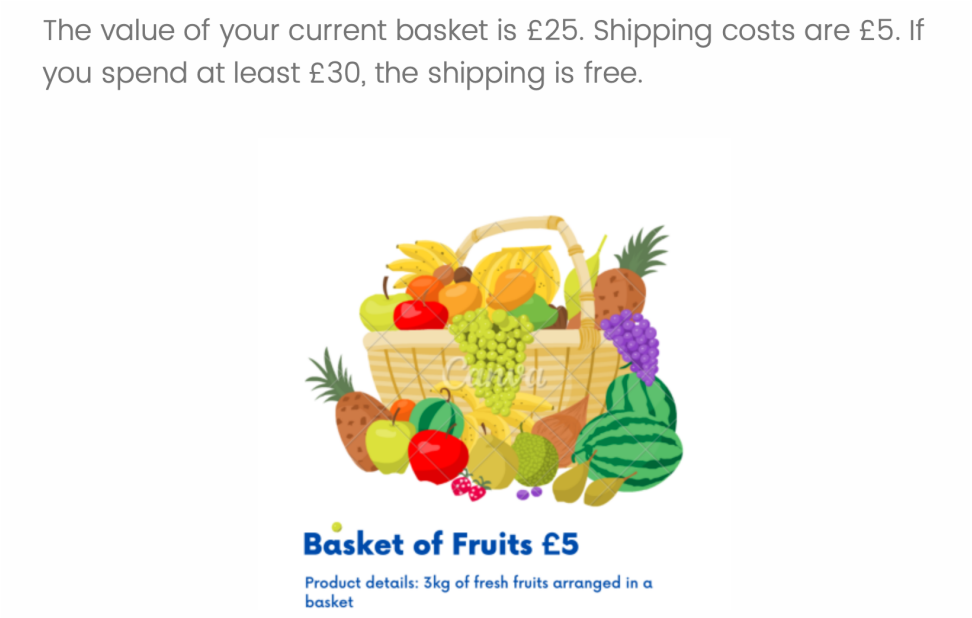

Figure 7: Step 4: Participants are given the choice to add a recommended product or not