# UNIVERSITY OF TWENTE.

# The effect of sample & email marketing on (re)purchase behavior in online retailing

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**Purpose** – this research aims to examine the purchase behavior of consumers in the online selling of interior products by a startup company. This paper measures the relationship between the first order and future orders a customer places. Trying to understand what the value and quantity of those orders will be and how they influence each other. Furthermore, two different marketing techniques, free sample marketing & e-mail marketing, are investigated for their effect on the purchase intention of online consumers throughout the online customer journey.

**Design/Methodology/Approach** – A quantitative analysis is conducted based on real-life order and marketing data of a startup company that sells technological interior products solely online. Data is extracted from their e-commerce platform, email marketing tool and BI software. Linear and binary regressions are conducted to examine the relationship between the different variables. **Findings** – Free sample marketing had a positive significant effect on the customer profitability and order quantity of online consumers of the analyzed company. Furthermore, no explicit linear relationships were found between first order and retention order & between email marketing and retention orders. However, the research did show that when the engagement with emailing was high, the probability of retention was higher.

**Practical implications** – This research has shown that the use of free samples can be used by organizations to increase purchase intentions related to shopping in an online environment. Therefore, samples as a marketing tool can be effective for allowing consumers to rely on their own judgment if the company and its product are reliable. Furthermore, the analysis has shown that when the engagement with e-mailing is higher, a customer is more likely to repurchase and stay loyal to a company. Therefore, marketers should focus on emailing personalized and relevant content to get the highest engagement possible.

**Originality/value** - This paper tried to fill the gaps in the customer purchase behavior and related marketing techniques, based on a startup company that sells solely online. Prior research, for example, free sample marketing articles, were mainly conducted in an offline environment. Therefore, this paper focused on the uncertainties that arise in the online purchasing of consumer products and how different marketing strategies can successfully increase customer purchase behavior.

#### **Graduation Committee Members:**

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#### **Keywords:**

Free sample marketing, Email Marketing, Customer retention, (Re)purchase behavior

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# 1. Introduction

Nowadays, the purchasing of consumer goods is shifting from physical stores towards webshops. The interior market is an example of such a market that is increasingly moving toward this digital approach of selling its products. The new generation of their customers is comfortable ordering their products online, and therefore, interior marketers should focus more on this new way of customer purchasing behavior. However, to successfully achieve the online selling of products, it is necessary to understand purchasing behavior and related marketing strategies in this online environment. Therefore, this research investigates different marketing techniques and purchasing behavior in the online selling of interior products. Conducting an empirical analysis on a startup company that sells smart home window coverings through its webshop. This research will focus solely on the e-tailing of consumer goods, including the complication of not being able to physically experience the product before purchasing. E-tailing is the format in which retailer and customer have their communication and transaction through an interactive electronic network (Levy & Weitz, 2001). In other words, e-tailing is the online retailing of consumer goods and services on the World Wide Web. In this research, several questions are investigated concerning the online selling of interior products. What is the effect of free samples on purchasing intentions, and will customers place larger orders without knowing if the startup company is reliable? This research, therefore, examines the different relationships between marketing activities and customer purchase behavior. Based on the above-mentioned topics, the following central research questions can be stated:

'What are the effects of sample and email marketing on customer purchasing behavior and what is the relationship between the first and future retention orders in the online selling of technological interior products by a startup company?'

To answer these questions, three different relationships are explored and empirically investigated. The first investigated relationship is regarding the use of free samples in the online selling of interior products. Examples of such samples would be small pieces of fabric to give an initial impression about the look and feel of the product. These samples are used to decrease the product uncertainty regarding online shopping and, therefore, are a marketing instrument to increase the customer's willingness to buy. This study examines the effectiveness of free samples on both customer profitability and the quantity of ordered products. Therefore, the following sub-question can be structured:

'What is the effect of free sample marketing on the customer profitability and quantity of customer purchases in the online selling of interior goods?'

Secondly, this paper also analyzes the relationship between first and repeat orders. Based on different uncertainties related to online purchasing, consumers are less likely to purchase a large order during their first transaction with a startup company. Therefore, this paper investigates the effect of first-order profitability on the profitability of future repurchases of the same customer. To measure this relationship between first-order profitability and future retention profitability, this paper analyzes the introduction of smart home window coverings in the interior market. Based on customer data of this startup company that sells smart home window coverings exclusively online, the goal is to create a general understanding of the importance of first product experience during the introduction phase of these brand new technological interior products. Also, considering the effect of not being able to physically experience a high-end product before purchasing it on the purchasing behavior. Therefore, the following second sub-question is taken into consideration:

'What is the relationship between the first order a customer places and future retention order(s) of similar consumer goods in the online selling of technology interior products?'

Moreover, by focusing on this question, this paper investigates if first order experience is important for the introduction of brand-new products to eventually build a relationship with the customer that causes them to repeatedly purchase a similar product. Therefore, this research extends the literature in showing the importance of first-order experience and the cautiousness of customers when ordering a brand-new product from a startup company. Not having the resources to judge if the company and its products are reliable.

Lastly, this paper also analyzes the effect of email marketing on targeting different existing customers. By using this marketing instrument, customers can be attracted and enhanced to purchase even more in the post-purchasing phase. By targeting customers with relevant content, the goal is to increase retention of the existing customer base. Along with the above-mentioned research question related to first and retention order profitability, this research shows different aspects of customer purchasing behavior and how marketers can use digital tools to evoke retention. Moreover, this paper also examines whether this targeting method has a positive effect on the retention rate of the customer. Therefore, the last sub-question will be:

'What is the effect of email marketing on the retention of existing customers in online selling of interior products?'

# 2. Literature review

A literature review is conducted systematically to get insights into existing research on the discussed topics. Based on several keywords, article databases are explored to search for the most relevant and reliable articles. Based on the following topics: free sample marketing, product trial marketing, customer retention, email marketing & more, this chapter tries to provide a comprehensive analytical review of what researchers already have found on the examined relationships. The literature review eventually provides the reader with a general understanding of the important topics and their relationships. Making it the foundation of quantitative analysis. However, firstly, the online customer journey of the examined company is discussed based on different academic papers. Hereby, the relationships between the different research questions and hypotheses are explained.

# 2.1 Online customer journey

In this paper, two different marketing techniques and the purchasing behavior regarding retention orders are analyzed. These examined topics are part of the particular customer journey of the research company. To highlight this customer journey and the examined topics, a combination of the models of Sashi (2012) and Lemon & Verhoef (2016) are used. In their papers, they discuss the customer experience and customer journey a customer follows during their customer lifetime. Sashi (2012) provided literature with an elaborated framework of specific stages a customer experiences. In figure 2, a simplified version is listed to make it appropriate for this paper. According to Sashi, in an ideal situation, a customer follows a certain number of subsequent steps. Across the customer lifecycle, the customer becomes aware of the brand/product, considers buying a particular product, actually purchases, places subsequent purchases and

advises the product/brand to relatives. Based on the paper of Lemon & Verhoef (2016), these stages can be divided into three main stages: the pre-purchase stage, purchase stage and post-purchase stage. According to their paper, the customer journey can easily be outlined as the stages before, during and after their purchase. In both papers, they highlight that if a customer takes all these different steps in the most optimal way, a firm benefits the most of a customer across his lifetime.

To put this into perspective of this paper, this research analyzes the two different marketing techniques and purchasing behavior based on real-life data from a startup company that sells solely online. This company operates in a similar customer journey as highlighted in the papers. Therefore, this paper considers the customer journey of this particular company and takes different phenomena to research and come up with assumptions regarding different perspectives that can be important for e-commerce. Firstly, free sample marketing can be seen as a technique that is used to improve the consideration phase and consequently enhance the purchasing phase. Secondly, Email marketing, in this paper, is analyzed for its effectiveness on retention based on newsletter subscription and the related customer engagement. Moreover, are customers, after the purchase phase, more attracted to place a retention order if they receive newsletters and are customer more likely to place a retention order when they largely engage with the received emailing. Lastly, the (re)purchasing behavior of the customer is analyzed in regarding to their first purchase and retention order(s). Based on the first experience, what future purchase behavior can be expected for the examined company's customers. Moreover, this paper tries to analyze different marketing techniques that can be used across the online customer journey and additionally tries to create an understanding of how customer purchasing behavior occurs at the particular examined company and their online selling of consumer products. To visualize this, Figure 2 shows all the different marketing techniques and customer actions that are used/taken throughout the online customer journey. Based on this graph, a comprehensive overview is provided of marketing activities and purchase behavior and gives understanding of the relationship between the examined relationships of this paper. The variables that are considered for the different research questions are highlighted at their particular place in the online customer journey and linked to their respective research question.

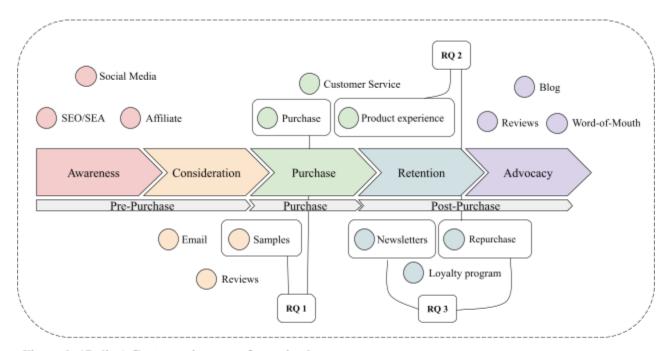


Figure 1: (Online) Customer journey of examined company

### 2.2 Free sample/Product trial marketing

Free sample marketing and product trial marketing are largely used in all types of industries. A good example of a market where samples have always been used is the interior market. They use samples of their products to give customers that first impression of what their customized product would look like and, therefore, try to reduce the product risk associated with purchasing a product. Examples of such samples would be small pieces of fabric to give an initial impression about the look and feel of the product. Such product 'trials' can be defined as the first

user experience of the customers with the product and brand (Marks & Kamins, 1988). In this first experience, customers determine their first beliefs, attitudes and purchase intentions towards a certain product or service (Kempf & Smith, 1998, Marks & Kamins, 1988). This marketing technique provides the customer with a direct sensory experience of the physical aspects of a certain product or service. Enabling the customers to judge and rely on their own personal experiences and emotions before deciding to purchase the product or service (Kempf & Smith, 1998; Dhillon et al. 2022). Therefore, marketers are challenged to provide customers with a 'good' first impression of the product through a sample or trial, with the goal of decreasing uncertainties related to the pre-purchasing phase. Moreover, free samples or products from customers can be of high importance to eventually enhance purchase intentions (Marks & Kamins, 1988; Boyers et al., 2015).

In this paper, the goal is to consider the effect of sample requests or product trials on the customer attitude towards a brand or product and the consequence on their willingness to purchase. Moreover, when a customer first experiences the products through a free sample or trial, will his perception of the product/brand change and affect his willingness to purchase increase. When you look at the existing literature about this topic, research provides us with a positive effect of free samples and product trials in marketing research. According to prior research, providing fabric samples during the pre-purchase stage can result in a positive impact on global attitude towards a brand and product (Fiore & Yu, 2001). Besides, product trial experience has also been previously shown to have a significant positive effect on the ultimate brand attitude of a customer (Kempf & Smith, 1988). This implies that both product trials and free samples are positively associated with the product and brand attitudes a customer perceives during such an experience (Boyers et al., 2015). Moreover, across literature, researchers have

shown that the use of free samples and/or product trials as a marketing technique can significantly influence the positive attitude a consumer has towards a certain product or brand (Gerlich et al., 2011; Dhillon et al. 2022; Farrag, 2017).

However, the goal is not only to create a positive attitude towards the product or brand but to increase the willingness to purchase. Marketing literature claims that the use of product sampling and product trials can be considered as effective sales promotion tools (Schultz & Block, 2014). The study of Lammers (1991) for example shows, although there were relatively small orders, that free samples in a chocolate store would positively influence the immediate purchase of products. Showing the positive effect a sample can have on immediate customer purchase behavior. Furthermore, the study of Bawa & Shoemaker (2004) provides us with a more elaborate framework. In their research, they claimed several effects of free product sampling on purchasing behavior. Two of them are 'acceleration' and 'expansion'. Implying that customer willingness to purchase has shifted towards an earlier moment and (more) new customers are attracted due to the free samples. According to their results, the use of sample promotions also has a positive effect on incremental sales and results in an increase in sales over time. Showing that free samples both have a positive effect on acceleration and expansion. Gerlich et al. (2011) their paper supports these claims, providing us with findings that product sampling can contribute to both a positive feeling towards the product (FTP) and the likelihood to purchase the product (LTP). Being in line with the positive effect product sampling and product trial can have on the brand perception and willingness to purchase of customers. Furthermore, based on prior research, it has been shown that the use of free sampling and/or product trials positively influences the purchase intentions of customers (McGuinness et al., 1995; Schultz & Block, 2014; Lammers, 1991; Bawa & Shoemaker, 2004; Gerlich et al., 2011).

Therefore, based on the discussed literature, the following assumptions can be stated regarding the examined research question(s): Free sample/Product trial marketing has a positive effect on the consumer attitude towards a brand and product and free sample/product trial marketing has a positive effect on the consumer purchase intentions towards a product or service. Based on the existing literature, the following hypothesis can be stated regarding the examined research question(s):

*H*<sub>1</sub>: Free sample marketing has a positive effect on order profitability and quantity in the online selling of technological interior products.

#### 2.3 Customer retention

Customer acquisition, retention and customer relationship management have been increasingly studied in marketing and business literature. Kumar et al. (2010) discuss in their paper the importance of the customer lifetime value (CLV), which is the profit of a company from a certain customer across its entire lifetime. In their paper, they highlight the importance of focusing on this particular value contribution of customers to the firm. Kumar et al. (2010) discuss that new customers should be attracted and eventually their value should be maximized across their lifetime, not only aiming for a single purchase. In marketing literature, customer acquisition (attracting new customers) is a topic that is widely discussed, however, customer retention (preventing customers from leaving) is something that is less researched. According to Williams & Williams (2015), marketers nowadays get too caught up in focusing on customer acquisition due to competitive pressure, however, forgetting the importance of retaining existing customers. But how can customer retention be defined? According to Gerpot et al. (2001), Customer retention (CR) can be defined as maintaining the business relationship established between a

supplier and a customer. This is achieved in two different ways: subsequent repurchasing or extending a contract. This way of aiming for firm revenue can be a more useful way of spending marketing resources instead of putting all effort into finding new ones (Fornell & Wernerfellt, 1987). Through an extended amount of effort from existing customers, their customer share can increase over time and, therefore, their importance increases for firms. Customer share can be defined as the revenue coming from a customer's purchases compared with the total revenues from a certain product or category at a company (Peppers & Rogers, 2004). But does customer retention lead to more profit for firms? In the paper by Ahmad & Buttle (2001), they analyze the importance of adding customer retention to the marketing strategies of firms. Based on their qualitative research, they claim that the retention rate of existing customers results in a corresponding increase in profit. They highlight the following multiple economic benefits related to customer retention marketing: growth in per-customer revenue, savings on customer acquisition costs, a guarantee of base profit based on expected repurchasing & more. Moreover, based on their academic work, it can be concluded that the retention efforts will have a positive impact on the future profitability of the firm. Based on the above-discussed literature, marketers should understand that their market share is dependent on simultaneously putting effort into both customer acquisition and customer retention. Therefore, the goal for marketers is to understand and combine the marketing activities to create the highest possible output for the firm, both focusing on acquisition and retention (Chang et al., 2020, Gerpott et al., 2010).

Now that the importance of the two marketing activities is highlighted, it is important to describe how the first purchase (customer acquisition) and the subsequent purchase (customer retention) are related. Before the stage of retention, the customer first needs to be satisfied with the received product (Sashi, 2012; Ahmad & Buttle, 2012, Gerpott et al., 2010). If the customer

is not even satisfied with the received product or service, there is no chance that they are willing to repurchase at the same company. Moreover, without delivering products that are conform to the needs of the customer, the retention of the customer is unlikely. Furthermore, Sashi (2012) states that customer retention is the result of either overall satisfaction or high positive emotions associated with the first received product. The repurchasing and loyalty of a customer can be seen as a result of the satisfaction from prior experiences and their associated emotions during these (first) experiences. It can be stated that these two are causes of retention as the 'First impression' a customer has during his first purchase. The first impression is a topic that is mainly investigated in the field of social psychology. However, first impressions are also essential to consider in the field of marketing to understand the effect of brand perception and customer product experience. In the marketing field, this phenomenon can sometimes be discussed as the 'Halo'-effect. This effect states that customers tend to have a positive attitude towards a certain company or product based on a good first impression(s) (Leuthesser et al., 1995). The halo effect can be seen as a positive cognitive bias towards future interactions based on previous positive experiences (Thorndike, 1920). To put this in line with our described research topic, the assumption is made that first impressions of the newly developed products are important for the future retention of customers. Because the research company is a startup company that introduces a brand-new product, the first experiences are important to eventually result in more future interactions with the same customer. However, the goal of this research is not to define the effect of a first impression. However, it contributes to a framework for understanding customer behavior of firstly buying a certain order quantity to experience the product to consequently repurchase from the same company based on first experiences. But how should this first impression be structured to let the customer eventually place a retention order? Trust is an

important characteristic in customer relationship management. Morgan & Hunt (1994) highlights trust, based on the transaction between a customer and a company, as having the confidence that the providing party is reliable and trustworthy. Therefore, the trust and commitment a company builds with its customers result in a positive commitment of the customer to a firm (Kumar, 2018). One of the main challenges for start-up companies in building this trust with their first customers is delivering high-quality products that result in the right commitment of the customers. By delivering high-quality core products, firms can establish customers who will also be valuable in the future (Zineldin, 2016). Making product quality one of the key determinants of a new product's market success and profitability (Jacobson & David, 1987). Moreover, to summarize, customer retention can be seen as the result of satisfaction based on first impressions regarding the delivered product and related services (Ahmad & Buttle, 2001). Therefore, when trust and commitment are developed over time between buyer and supplier, the risks associated with purchasing from a new supplier are decreased and the willingness to buy increases. This consequently results in the positive development of the customer share over time. Moreover, looking at what literature tells us about the relationship between customer acquisition and customer satisfaction, it can be stated there is a strong relationship between how the customer acquisition process went and the related possibility of retention of the same customer. Therefore, the second hypothesis can be outlined as the following:

H2: First-order profitability/quantity has a negative effect on future order profitability/quantity in the online selling of technological interior products. Implying that customers will become more profitable in the future if they place a small order first.

### 2.4 Email marketing

After considering the relationship between customer acquisition and retention, the next step is to consider a marketing technique that can enhance this process of attracting existing customers. According to Verhoef (2003), companies use different relationship market instruments (RMIs) to increase the retention rate of customers. Examples of RMIs would be loyalty programs and mailings. Where RMIs are marketing instruments that are used to preserve existing relationships with customers (Bhattacharya & Ruth, 2000). With the eventual goal of maintaining or increasing the share of a customer (Verhoef, 2003). This paper includes the effect of email marketing on customer retention. How can the trend of email marketing positively affect customer retention and what does prior research provide us with?

Across the literature, it is shown that in this new digital age, email marketing is one of the most effective marketing activities (Hudák et al., 2017). Email marketing is a relatively cheap instrument to easily contact your customers in a direct way (Pavlov et al., 2008). People nowadays always have their mobile phones in their pockets to receive any kind of electronic marketing message. But what makes email marketing more effective compared to traditional approaches? According to Roberts and Berger (1999), the use of direct emailing has several advantages. In their book, they highlight that based on customer data, personalized emails can be provided to certain customer groups that fit into customer profiles. Based on personal information, actions and behavior, the customer receives messages that are completely in line with their interests. This results in emails that eventually are interesting for customers and reinforce their willingness to act towards a certain service or product (Hartemo, 2016). This personalization is the result of the rising customer demand for personalized propositions and the feeling of customer empowerment. According to Ramani & Kumar (2008), customers want to be

connected with the firm and want to influence the shape of transactions. Implying that firms should communicate with customers as important clients, and they should be treated on a more individual level. Therefore, the traditional approach to marketing products or services should nowadays be changed towards a more data-driven personalized approach.

However, how does this personal approach to email marketing contribute to the retention of existing customers? Moreover, what can be the contribution of email marketing on the customer retention rate. Research has shown that using e-mail is an effective way of creating brand loyalty among customers. Customers are more likely to purchase again or recommend a certain brand/product to one of their relatives when they are (to a certain extent) targeted by email campaigns (Merisavo & Raulas, 2004). Furthermore, email marketing as a relationship marketing instrument (RMI) is suitable for enhancing the customer share over time (Verhoef, 2003). The relationship with the customer can be maintained by extensively providing them with personalized and meaningful content, trying to evoke interest and demand for the product and brand. The usage of this RMI can, therefore, be positively used for the retention of existing customers. One of the main theoretical reasons for this are the provided personalizations in the emailing that fulfill the new demand and needs of the customer in this digital age (De Wulf, Odekerken-Schröder, and Iacobucci 2001; Ellis-Chadwick & Doherty, 2012). Moreover, based on the existing literature that is discussed, the following assumption can be made regarding email marketing strategy: Email marketing, which contains meaningful and relevant components, will positively influence the retention rate of customers. This statement can be separated in the last two hypotheses of this paper:

H3: Email marketing has a positive effect on the retention of customers in the online selling of technological interior products.

H4: Customer engagement with email marketing has a positive effect on the retention of customers in the online selling of technological interior products.

#### 2.5 Discussion

Based on academic literature, marketing activities such as customer acquisition and retention are widely discussed. Additionally, marketing techniques such as free sample and email marketing were researched for their effectiveness on the two marketing strategies. Therefore, the literature review can be used for understanding the different effects of those marketing strategies and which techniques can be useful in accomplishing success in these activities.

Free sample/product trial marketing can be seen as a marketing technique that is used to give customers their first experience with a certain product or brand (Marks & Kamins, 1998). This technique provides the customers with the ability to physically experience the product before purchasing it. This gives them the possibility to fully rely on their own experience and related judgment (Kempf & Smith, 1998; Dhillon et al. 2022). The discussed literature has shown us that providing free samples or product trials can result in a positive effect on the brand and product perception of the customer (Boyers et al., 2015; Gerlich et al., 2011; Dhillon et al. 2022; Farrag, 2017). Increasing their willingness to purchase the product (Schultz & Block, 2014; Lammers, 1991; Bawa & Shoemaker, 2004). Moreover, based on analyzed academic papers, it can be assumed that free sample marketing has a positive effect on the customer purchase intentions of a customer.

Customer acquisition and customer retention were discussed based on the customer lifetime value (CLV) theory. CLV being the revenue generated by a customer across his entire lifetime (Kumar et. 2010). Customer acquisition (attracting new customers) and customer retention (maintaining existing customers) need to be simultaneously focused on to reach the highest potential revenues. Firms nowadays tend to overlook the importance of retention due to the highly competitive pressure in the market (Williams & Williams, 2015). However, the relationship between customer retention and acquisition can be seen as the result of first impressions of the customer. During their first experience, customers needed to be satisfied with the product and related services to consider repurchasing at the same firm (Sashi, 2012; Ahmad & Buttle, 2012). Based on this experience, the customer creates a certain emotional association that can result in their retention for the same company (Sashi, 2012). This perception of the company is based on trust, implying that customers know that the company is reliable and delivers the promised products (Morgan & Hunt, 1994). Moreover, based on the academic literature, customer retention can be seen as the result of satisfaction based on first impressions regarding the delivered product and related services of a firm. Making the customer acquisition process, the first purchase, of high importance for the eventual possibility of retention.

Lastly, email marketing was considered based on its effectiveness in increasing customer retention. Verhoef (2003) highlighted email marketing as a relationship market instrument (RMI) that could increase the retention rate of customers. Where RMIs are tools used to maintain relationships with existing customers. Nowadays, email marketing can be seen as one of the most effective marketing tools (Hudák et al., 2017). Besides the low associated costs of email marketing, the communication with customers can be fully personalized and based on customer data (Roberts and Berger, 1999). Due to higher levels of personalization, marketers can use email

in delivering marketing messages that are completely in line with the interests of the customers (De Wulf, Odekerken-Schröder, and Iacobucci 2001; Ellis-Chadwick & Doherty, 2012). Reinforcing the customer's willingness to purchase a certain product or service (Hartemo, 2016). If we look at retention, the literature claims that email marketing can increase the likelihood of customers purchasing again or recommending the brand to others (Merisavo & Raulas, 2004). Resulting in the desired increase in customer share for the firm (Verhoef, 2003). Moreover, the relationship with the customer can be maintained through extensively providing them with personalized and meaningful content, trying to evoke interest and demand for the product and brand. The usage of this email marketing can, therefore, be positively associated with the retention of existing customers.

In appendix A, B & C, literature tables are listed, separated on topic, with an overview of the authors, publication year, journal, analysis type and key takeaways. Based on all this discussed literature, the following theoretical framework was constructed regarding the different examined relationships:

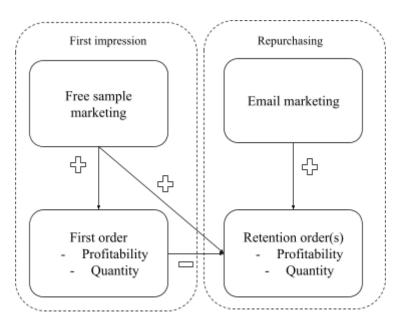


Figure 2: Theoretical framework

#### 2.6 Limitations

Several limitations need to be addressed regarding this systematic literature review. At the beginning of this research, the goal was to have a look at the online environment of the different marketing activities and techniques. However, during the search for relevant academic literature, the majority of the articles were related to offline marketing or no separation was made between online and offline marketing. Therefore, this literature review does not show any assumptions that can be taken regarding the specificity of the online environment. However, based on the quantitative analysis, this paper will try to fill the gaps and show the importance of these marketing strategies and activities in solely analyzing the online environment.

Furthermore, in the analyzed paper, there was a lack of quantitative research on the particular examined relationships. Therefore, not a lot of research contained quantitative evidence on the effects that the variables had on each other. To also fill this gap, a quantitative analysis is conducted based on real-life marketing and order data in the results section. Based on this analysis, the strength of the relationship between the variables will be shown. Extending existing research with a more quantitative approach on these marketing techniques and purchasing behavior.

# 3. Methodology

To answer the different research questions and test the hypotheses that were listed in the literature section, quantitative data is used. Order data was gathered by a start-up company that sells tailored smart home window coverings solely online. Using this data as a representation of an online player that sells technological interior products in their start-up phase. Based on the customer and order data, an analysis is made regarding the described research topics.

Additionally, emailing software was used to target existing customers to increase the retention rate. By using this emailing software, the effectiveness of email marketing is analyzed with a focus on retention. Based on if a customer placed a retention order, different customer groups can be separated and tested on the effect of email retention.

The quantitative data consisted of 360 customers that were recorded from the start point of the first sales until the 3rd of May. Therefore, it is assured that the data that is analyzed, indeed is generated through the startup and introduction phase of this new company and its new products. The data was extracted from three different sources: Magento 2 (e-commerce platform), Canopydeploy (emailing software) and PowerBI (BI software). By extracting data and combining them properly according to the customer e-mail and the customer postal code, four different datasets were structured to eventually test the hypotheses through statistical software. The personal information of customers is not used in this paper due to privacy reasons.

Firstly, a dataset needed to be created to examine the relationship between order quantity, customer profitability and sample request. From the e-commerce platform, all the existing customers that placed an order with at least one significant product (one roller blind) were extracted. This is because orders related to the selling of additional products are not included, such as accessories. For this relationship, all the 360 customers were considered. From all these customers, their customer profitability (CP), the ordered quantity across their lifetime (OQ) and if they ordered samples (SAM) were all added to the dataset. In that way, all the relevant variables were included that are important for the statistical analysis. Multiple regression analyses are performed to investigate the effect of sample requests on the other variables. Making 'Samples requested' (SAM) the independent variable and customer profitability (CP) and Order quantity (OQ) the dependent variables. Next to the main variables, also the variables

Depth-of-Discount (DoD), Discount (DA) & Country (COU) were added. By adding these values, the aim is to control the effects of discount promotions and the country where the customers are from.

Secondly, a dataset was structured to analyze the relationship between first-order and retention order(s). From the e-commerce platform, all the customers that placed more than one order (containing significant products) were extracted to use for the analysis. This resulted in a total of 45 customers that ordered similar products multiple times across their customer lifetime. From these customers, the first order value (FOP) & quantity (FOQ), retention order value (ROP) & quantity (ROQ) were extracted. As these were the main variables important for statistical analysis. Furthermore, the variables, Depth-of-Discount (DoD), Discount Amount (DA) & Country (COU) were also added again to control for their effects on the examined relationship. Yet again, a multiple regressions analysis was performed to search for the linear relationship between the first and retention order variables.

Lastly, data was extracted from the emailing software to compare with the order data to answer our research question considering the effect of emailing on customer retention. The main variables that were extracted from the software is if the customer is a Newsletter subscriber (NS) and whether the customer has placed a retention order (RO). Where a newsletter subscriber shows if the customer is subscribed to the general newsletter, containing different personalized components. Because the dependent variable, Retention order, is a binary variable, a binary logistic regression is conducted to discover the relationship between the variables. In this binary regression analysis, the variables Depth-of-Discount (DoD), Discount Amount (DA) & Country (COU) were also added to control for their effects on the examined relationship. For this first analysis, all the 360 customers were considered. Additionally, a binary logistic regression is

conducted with several email engagement variables. In this analysis, the relationship between retention order (RO) and the engagement variables Emails received (ER), Open percentage (OP), Click-through rate (CTR) & Click-to-Open rate (CTO) is measured. Based on these variables, it can be derived that if customers were attracted and engaged with received emailing, indeed were more evoked to place a retention order. For this analysis, only newsletter subscribers could be used that also placed an order. The reason for this is that the engagement variables only could be measured for customers that indeed were subscribed to the newsletter. Therefore, of all the 360 customers, only the 278 newsletter subscribers were used for the second analysis concerning the fourth hypothesis.

To provide an overview, table 1 is listed with the operationalization of all the variables. Providing the variable names, abbreviations and definitions. Also, explaining the function of the variables in the conducted analysis and how the variables are measured. Furthermore, figure 3 visualizes which customers were used in the datasets for which hypothesis. These are the sample sizes before considering and removing outliers.

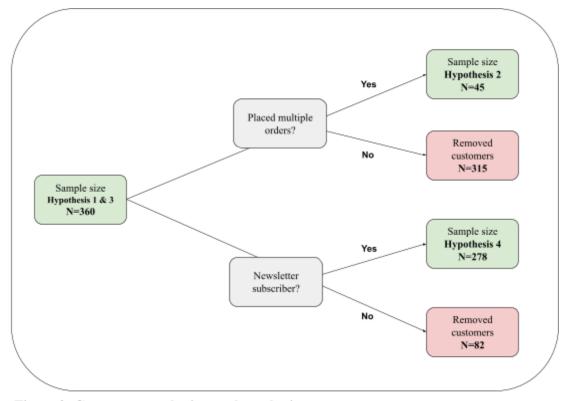


Figure 3: Customer sample size per hypothesis

**Table 1: Operationalization of variables** 

Variable	Abbreviation	Operationalization
Dependent variables		
Customer profitability	СР	The total revenue of the orders a customer has placed (in $\ensuremath{\varepsilon}\xspace)$
Order quantity	OQ	The total quantity of products in the orders a customer has placed (in units)
Retention-order profitability	ROP	The total revenue of the retention order(s) a customer has placed (in $\ensuremath{\mathfrak{\epsilon}}$ )
Retention-order quantity	ROQ	The total quantity of products in the retention order(s) a customer has placed (in units)
Retention order	RO	An indicator of whether the customer placed a retention order (0=No, 1=Yes)
Independent variables		
Samples requested	SAM	An indicator of whether the customer requested samples before purchasing (0=No, 1=Yes)
First-order profitability	FOP	The total revenue of the first order a customer has placed (in $\ensuremath{\varepsilon}$ )
First-order quantity	FOQ	The total quantity of products in the first order a customer has placed (in units)
Newsletter subscriber	NS	An indicator of whether the customer was targeted by the newsletter (0=No, 1=Yes)
Emails received	ER	The total amount of emails a customer has received (in number of emails)
Open percentage	OP	The percentage of emails opened by the customers (in %)
Click-through-rate	CTR	The percentage of email clicks by a customer across all the received emails (in %)
Click-to-Open rate	СТО	The percentage of email clicks by a customer across all his opened emails (in %)
Control variables		
Country	COU	The country where the customer is from (NL, BE, DE, AT, DK, FR, SE)
Discount amount	DA	The amount of discount a customer has received throughout his entire lifetime (in $\ensuremath{\mathfrak{\epsilon}}$ )
Depth-of-Discount	DoD	The percentage of discount in comparison the customer profitability (in %)

# 4. Results

In this section, the results of the statistical analysis are discussed to eventually provide answers to the stated research questions and their relative hypotheses. Different subchapters are structured to separately analyze the relationship based on their descriptive statistics, multiple linear regressions and binary logistic regressions. Consequently, based on the results, the analysis will be interpreted in the discussion section to produce an end conclusion regarding the research questions.

# 4.1 Free sample/product trial marketing

# 4.1.1. Descriptive & frequency statistics

For the first analysis, an analysis of the effect of free sample marketing is conducted. To get a general idea of our analyzed variables, some descriptive statistics are highlighted in the following tables. For the descriptives, the Minimum, Maximum, Mean and Standard deviation are considered. As these are the most important measures to get an understanding of the distribution of the dataset.

Table 2 - Descriptive statistics: CP, OQ, SAM, DoD & DA

	N	Min	Max	Mean	Std. dev.
Customer Profitability	360	176.64	6611.57	819.03	807.93
Order Quantity	360	1	20	3.04	2.94
Samples Requested	360	0	1	0.686	
Depth-of-Discount	360	0%	64%	5.32%	5.85%
Discount Amount	360	0	1095	54.93	110.78

In table 2, the different descriptives regarding the numerical variables that are considered for the first hypothesis are shown. From this table, it can be drawn that the average customer profitability is 819.03 euro, and the average customer order quantity is a bit more than 3 products. Furthermore, the mean Depth-of-Discount is around 5% and the mean discount amount is 54.93 euro. However, all these variables have a relatively higher standard deviation in comparison to the mean. Implying that the data is largely spread around the mean. Besides the large standard deviation, also the maximum value of the variables is remarkable in comparison with the mean, implying that for the regression analysis outliers needed to be considered and removed where necessary.

In addition to the descriptives of the numerical variables, it is also important to highlight the binary variable mean of customers that indeed requested samples in comparison to the entire customer base. From table 2, it can be derived that 68.6% of all the customers that placed an order, indeed requested samples before their purchase. Moreover, the largest part of customers indeed requests samples as consideration for buying a particular product. Furthermore, in appendix D, the frequency distribution of the variable 'Country' is listed. If we look at this variable, the largest part of customers is from the Netherlands, contributing for 64.6% of all the customers. Germany and Belgium are next up as the biggest countries with both a percentage of around 15%.

In addition to the descriptives and frequencies, the conversion rate of samples is also worth mentioning. The conversion rate is the percentage of customers that are converting from prospective customers to real customers after requesting samples. To come up with this value, the customers that actually bought the product after a sample request are divided by all the

sample requests. Based on this equation, the conversion rate of sample marketing resulted in a percentage of 22.3% (on May the 2nd). Moreover, 22.3% of all customers that requested samples were converted and placed an order.

# 4.1.2. Regression analysis

The descriptives and frequencies have provided the distribution of the different variables. The next step is to discover the linear relationship between the examined variables. For this regression analysis, Customer profitability (CP) and Order quantity (OQ) are taken as dependent variables and Sample request (SAM) as independent variable. To control for external effects, the variables Country (COU), Discount amount (DA) and Depth-of-Discount (DoD) are also included in the regression. However, before conducting the regression analysis, it was necessary to search for influential outliers that needed to be removed from the dataset. In appendix E, F & G, box plots are listed with the dispersion of the variables customer profitability, order quantity and depth-of-discount. From these visualizations, the choice was made to remove the 9 largest outliers from the dataset. As these largely influenced the variability of the researched variables.

In table 3, the regression analysis is listed. In this table, the linear relationship between the dependent variable 'Customer profitability' and the independent variable 'Samples requested' is shown with a linear coefficient. Additionally, some control variables are added to control for external effects. 112.68 euro is the coefficient of additional profit when a customer requested a sample beforehand, keeping other variables constant. With a significance level of 0.02, this effect can be seen as a significant positive relationship between the dependent and independent variables based on a P-value < 0.05. Moreover, it can be stated based on this regression, that when customers have requested samples, it positively influences the customer profitability. The R-squared has a value of 0.571, implying that the model explains 57.1% of the

variability of the variables. Furthermore, based on the ANOVA table in Appendix H, the model can be seen as a significant predictor of the variables. A simplified model of the analysis, without all the control variables, is added to appendix I.

Table 3 - Regression models: CP, OQ, SAM & Control variables

Model	DV Customer Profitability	DV Order Quantity				
	Unstandardized regression coefficients					
	B(SE)	B(SE)				
(Constant)	701.85 (49.08)	2.28 (0.18)				
SAM	112.68 (48.99)**	0.47 (0.18)***				
Promotion variables						
DA	8.32 (0.40)***	0.03 (0.00)***				
DoD	-77.97 (6.62)***	-0.24 (0.02) ***				
Country variables						
BE	10.55 (66.70)	0.14 (0.24)				
DE	8.90 (62.18)	0.11 (0.22)				
FR	-383.08 (190.28)*	-1.15 (0.69)*				
AT	-128.99 (124.17)	-0.41 (45)				
SE	35.21 (420.13)	0.42				
DK	119.29 (299.85)	0.21				
N	351	351				
R2	0.571	0.605				

a. Dependent variables: Customer profitability (CP) & Order quantity (OQ)

Besides analyzing the statistical relationship between requested samples and the customer profitability, it was also necessary to examine the relationship regarding the number of products

b. Statistical significance: \*\*\*p<0.01,\*\*p<0.05 and \*p<0.1.

a customer ordered throughout his customer lifetime to test the first hypothesis. To investigate this relationship, a similar regression model is conducted. However, now the dependent variable is changed from customer profitability (CP) to order quantity (OQ). The result of this analysis is also listed in table 3. The effects can be seen as similar in comparison to regression analysis with customer profitability. In the model, the linear coefficient is 0.47 and has a significance level of 0.007. Providing us with a significant positive relationship between samples requested and customer order quantity. Based on this value, it can be assumed that there is a positive relationship between samples requested and the ordered quantity by a customer. Furthermore, similar to the regression model on customer profitability (CP), the R-squared shows a similar explanation of variance, where 60.5% of the variance of the variables is explained by the model. The ANOVA table, listed in Appendix J, also shows that the model itself is a significant predictor of the dependent variables. For this regression, simplified models are also listed in Appendix I.

Despite that the promotion variables were included to control for their effect, interpreting their results can be of importance. As can be drawn from the regression models, both promotion variables have a significant effect on Customer profitability and Order quantity. With a coefficient of 8.32 and 0.03, 'Discount amount' shows that when the amount of discount through the customer lifetime is higher, also the profitability and order quantity become higher. Implying that when customers use discounts, they are more likely to be more profitable and order more products. Furthermore, the Depth-of-Discount shows the opposite. With a negative significant value, the variable shows that when the Depth-of-Discount is higher, the lower the profitability and ordered quantity will be. Moreover, when a customer receives a high percentage of discount

in comparison with their total profitability and order quantity, it can be assumed that the profitability and quantity is lower.

#### **4.2** Customer retention

# 4.2.1. Descriptive & frequency statistics

For the second hypothesis, the relationship between the first order and retention order will be statistically tested through a linear regression model. The variables are again distincted from each other by order quantity and order profitability. This resulted in the following variables used for the linear model: First order profitability (FOP), First-order quantity (FOQ), Retention order(s) profitability (ROP) and Retention order quantity (ROQ). Before conducting the regression analysis, descriptive and frequency statistics are considered again for a general understanding of our variables. Based on the order and customer data, 45 customers were extracted that placed more than one order. Moreover, only these customers were appropriate to analyze for this relationship.

Table 4 - Descriptive statistics: FOP, FOQ, ROP, ROQ, DoD & DA

	N	Min	Max	Mean	Std. dev.
First-order profitability	45	195.41	2453.83	535.76	458.48
First-order quantity	45	1	9	2	1.73
Retention-order profitability	45	210.59	4992.50	856.21	879.78
Retention-order quantity	45	1	18	3	3.16
Depth-of-Discount	45	0%	64%	5.29%	9.60%
Discount Amount	45	0	857.90	83.75	150.80

In table 4, the descriptive statistics for the numerical values are listed. From this table, it can be derived that in the first order a customer places, the mean profitability is 535.76 euros, and the mean quantity is 2 products. Furthermore, the mean value for retention orders is higher, where the mean profitability is 856.21 and the mean quantity is three products. Moreover, based on the descriptives, retention orders are averagely higher than first orders. However, the standard deviation is relatively high in comparison with the mean, implying that the data is largely dispersed around its mean. Furthermore, the maximum is again really high compared to the mean, suggesting that outliers are present in the dataset. Lastly, also the control variables 'Depth-of-Discount' and 'Discount Amount' are listed in the descriptives table. The mean Depth-of-Discount is 5.29% across the orders of the customers. Furthermore, the average received discount across a customer lifetime of this particular sample was 83.75 euro. Yet again, the maximum values are relatively high in comparison with the mean, assuming that outliers are present in the dataset. Next to the descriptives, also the frequency distribution of 'Country' should be highlighted. In Appendix K, the frequency distribution of the country variable is listed. Where, yet again, the Netherlands is the biggest representative country with 66.7%. Followed by Germany, with 20% of all the customers that placed more than 1 order.

# 4.2.2. Regression analysis

To examine the relationship between the discussed variables, the linear relationship is examined through a regression analysis. The goal is to examine the effect of the first order on the retention order. Moreover, the regression models take into account the retention order variables as dependent variables and first-order variables as independent variables. Therefore, the first regression analysis investigates the relationship between the first order profitability (FOP) and retention order(s) profitability (ROP), and the second regression analysis measures the

relationship between the first order quantity (FOQ) and retention order(s) quantity (ROQ). However, before generating the linear models, outliers had to be removed based on the findings at the descriptives. In Appendix L & M, box plots are listed of the variables first order profitability (FOP) and Retention order profitability (ROP). Based on these boxplots, 4 large outliers were removed to take away their effect on the linear regression.

Table 5 - Regression models: FOP, FOQ, ROP, ROQ & Control variables

Model	DV Retention-order profitability		DV Retention-order quantity	
		Unstandardized reg	ression coefficients	
	B(SE)	B(SE)	B(SE)	B(SE)
(Constant)	996.23 (130.93)	946.25 (148.86)	3.306 (0.48)	2.90 (0.51)
FOP	-0.51 (0.24)**	-0.40 (0.26)		
FOQ			-0.41 (0.23)*	-0.26 (0.23)
Promotion variables				
DA	8.88 (2.17)***	8.73(2.28) ***	0.03 (0.01)***	0.03 (0.00)***
DoD	-126.95 (29.49)***	-124.99 (30.82)***	-0.43 (0.12)***	-0.42 (0.11)***
Country Variables				
BE		72.03 (228.97)		1.46 (0.86)*
DE		76.45 (157.81)		0.67 (0.60)
AT		-290.53 (230.60)		-1.01 (0.86)
N	41	41	41	41
R2	0.342	0.380	0.277	0.380

a. Dependent variable: Retention-order profitability (ROP) & Retention-order quantity (ROQ)

In table 5, the regressions of 4 different models are listed. The first model shows the linear relationship between the retention-order profitability, first-order profitability and the

b. Statistical significance: \*\*\*p<0.01, \*\*p<0.05 and \*p<0.1.

promotion control variables. In the second model, also the control variables regarding country are added to control for their effects on the examined relationship. In the first model, a negative value of -0.51 is shown as the linear effect of first-order profitability on retention-order profitability. Moreover, the higher the first order profitability is, the smaller the retention order will be. With a significance level of 0.039, it can be assumed that the relationship actually exists between the two variables. However, when the control variables for country are added, the coefficient becomes insignificant. Therefore, it is difficult to draw conclusions about the examined relationship. Moreover, based on this regression analysis, no real assumptions can be made regarding the relationship between the two order profitability variables. Furthermore, with a R2 value of around 35%, the variance explained by the model is relatively low. Moreover, the variability of the variables is not highly explained by the models. Despite the low R2, the models can be seen as significant based on the ANOVA tables listed in Appendix N. Providing us with the assumption that the regression models do predict the outcome of the variables significantly. The simple regression model with only the main independent and dependent variable is also added to appendix O.

Table 5 also presents the results from the regression analysis regarding the relationship between first-order quantity (FOQ) and retention order quantity (ROQ). Similar to previous regression analysis, the control variables concerning promotions and country are added stepwise in two different models. From this table, similar outcomes can be derived as from the regression model of order profitability. In the first model, the linear coefficient is -0.41, with a significance level of 0.087. Again, a negative significant relationship between the dependent and independent variables is shown. However, despite the coefficient being significant in the first model, when the country control variables are added, the coefficient becomes insignificant again. Moreover,

also based on these regression models, no real assumptions can be made about this investigated relationship. Furthermore, the R2 shows similar values as the previous two models. Indicating that model explains around 30% of the variance of tested variables. Based on the ANOVA tables in Appendix P, it can be stated that both models can be seen as a significant predictor of the variables.

Although there was only a small effect found in the main variables of the regression analysis, it can be derived from table 5 that both promotion variables have a larger significant effect in all the models. Discount amount has a positive significant effect on both retention-order profitability and quantity. Where Depth-of-Discount has a negative significant effect on the two dependent variables. Implying that when the received discount amount is higher throughout the customer lifetime, a higher retention profitability and quantity can be expected. Furthermore, when the discount percentage received throughout the customer lifetime is higher, a lower retention profitability and quantity can be expected.

# 4.3 Email marketing

# 4.3.1. Descriptive & frequency statistics

For the final two hypotheses, different variables concerning email marketing and retention are considered. From the CRM system, all the customers that placed one or more orders were extracted. From these customers, it was recorded whether they did a retention order and if they were a subscriber of the newsletter. Moreover, if the customers were targeted by different marketing emails for enhancing their willingness to (re)purchase. In table 6, the frequency distribution of subscribed customers, in combination with the variable retention order, is listed in a frequency matrix. Of all the customers, 77.5% are subscribed to the newsletter. This shows that 77.5% of all the customers are subscribed to email marketing. Furthermore, Appendix Q again

shows that 45 customers purchased multiple times at the company. Consisting of around 13% of all customers. To look into the relationship between the two variables, table 6 also shows that 34 of all customers that placed multiple orders were newsletter subscribers. Indicating that 76% of all the customers that placed retention orders were actively targeted by mailings throughout their customer lifetime.

Table 6 - Frequency Matrix: Placed a retention order (RO) & Newsletter subscription (NS)

	Placed only one order	Placed multiple orders	Total
Not a newsletter subscriber	71	11	82
Newsletter subscriber	244	34	278
Total	315	45	360

Besides indicating variables about retention of customers and newsletter subscription, some engagement values are also derived from the e-mailing software. From the e-mailing software, different variables such as Emails received, Open rate, Click-through-rate and Click-to-Open rate were extracted. In this way, the interaction of the customer with all the emailing is tracked. For all the newsletter subscribers that have not placed a retention order, the descriptives of these variables are listed in table 7.

Table 7 - Descriptive statistics (No retention customers): ER, OR, CTR & CTO

	N	Min	Max	Mean	Std. dev.
Emails received	244	0	56	26.75	12.10
Open rate	244	0%	100%	61.18%	24.25%
Click-through-Rate	244	0%	92%	12.91%	11.66%
Click-to-Open rate	244	0%	100%	21.99%	18.77%

The average amount of emails received by these customers is around 28 emails. Furthermore, the mean open rate of those emails was 61.78% percentage. This implies that averagely, those

newsletter subscribers open more than half of the newsletter emails they receive. If we consider the actions taken in emails themselves, the table shows us a mean click-through rate of 13.02% and a mean click-to-open rate of 22.43%.

To make a comparison, the next step is to consider whether the engagement was higher for customers that did place a retention order. Table 8 presents us with the results of these customers according to the same engagement variables. From this table, it can be seen that on average more emails were received by customers that placed a retention order. Furthermore, the open rate was slightly higher in comparison to the customers that placed only one order. Lastly, also both the CTR and CTO were higher for the retention of customers. Based on this comparison, it can be drawn that on every engagement variable, the values for retention customers were higher compared to the values of customers that placed only one order.

Table 8 - Descriptive statistics (Retention customers): ER, OR, CTR & CTO

	N	Min	Max	Mean	Std. dev.
Emails received	34	6	62	34.94	12.75
Open rate	34	5%	100%	66.06%	24%
Click-through-Rate	34	0%	33%	13.82%	7.25%
Click-to-Open Rate	34	0%	100%	25.62%	19.21%

# 4.3.2. (Binary logistic) regression analysis

To examine the relationship between email marketing and the effect on retention, a binary logistic regression was conducted. A binary logistic regression is chosen because the dependent variable 'Retention order' is a binary variable that indicates whether a customer did or did not place a retention order. Where the value 0 implies that there was no retention order and the value 1 represents that the customer did place multiple orders. The main examined relationship is with

that customers that were targeted by personalized newsletter emails across their customer lifetime were more attracted to place a retention order. Furthermore, to also include the engagement of customers, different independent variables such as Emails Received, Open rate, Click-through-rate and Click-to-open rate are added to a different binary regression model. These variables can broaden the perception of whether customers that did place multiple orders, were also more engaged with the received emails.

In table 9, the first binary logistic regression is conducted. In this model, all the 360 customers are considered and analyzed for a linear relationship between if they placed a retention order and if they were newsletter subscribers. Also, the promotion and country variables are added to control for their effects. If you look at the binary regression model, you can see that the coefficient of NS is a negative value. Furthermore, the significance level is too high in comparison with the significant p-values. The logistic regression model also only explains 6.6% of the variance of the retention orders. Therefore, from this binary regression model, no assumption can be made about the direct relationship between being a newsletter subscriber and placing a retention order.

If we consider the control variables, only the variable Discount amount has a positive significant effect on the dependent variable. Implying that when the received amount of discount was high across the customer lifetime, the chance of the customer placing a retention order was larger. However, looking at the coefficient, the effect can be seen as relatively low. Furthermore, simplified versions of the model are listed in Appendix R.

Table 9 - Binary regression model: Retention order (RO) & Newsletter subscriber (NS)

Model	DV Retention Order	
	B(SE)	
(Constant)	-1.357 (0.462)	
NS	-0.194 (0.370)	
Control Variables		
DA	0.004 (0.002) **	
DoD	-0.059 (0.038)	
Country Variables		
NL	-0.325 (0.403)	
BE	-1.355 (0.741)	
AT	0.516 (0.754)	
FR	-19.572 (17937.21)	
SE	-19.358 (40192.97)	
DK	-19.652 (28420.72)	
N	360	
R2 (Nagelkerke)	0.066	

a. Dependent variable: Retention order (RO)

However, to still get an understanding of the effect of email marketing on our dependent variable, an additional binary logistic regression model was conducted with several engagement variables. Based on this analysis, the relationship between customer engagement with the received e-mails and their likelihood of retention is measured. For this analysis, only the 278 customers that were newsletter subscribers are taken into consideration. Table 10 provides us with this last binary logistic regression. In this regression, the effect of the independent variables Emails received, Open rate, Click-through-rate and Click-to-Open rate are measured on their

b. Statistical significance: \*\*\*p<0.01, \*\*p<0.05 and \*p<0.1.

effect on the dependent variable Retention order. Moreover, is there a relationship between those engagement values and the retention of customers?

Table 10 - Binary regression model: Retention order (RO) & Engagement variables

Model	DV Retention Order		
	B(SE)		
(Constant)	-6.320 (1.179)		
ER	0.064 (0.017)***		
OR	0.029 (0.013)**		
CTR	-0.048 (0.031)		
СТО	0.048 (0.017)***		
N	278		
R2 (Nagelkerke)	0.148		

a. Dependent variable: Retention order (RO)

From the binary logistic regression, multiple significant coefficients can be derived. Both the variables Emails received and Click-to-Open rate have a small but significant effect in comparison with a p-value of 0.01. Additionally, the open rate has a small significant effect on the placement of retention orders by customers compared to a p-value of 0.05. Despite the coefficients being relatively small, the binary logistic regression does show that several engagement values indeed indicate a higher chance of retention. Providing us with an assumption that the more a customer is engaged with the received emails, the higher the possibility of them placing multiple orders. Furthermore, the model explained 15% of the variance of the dependent variable.

b. Statistical significance: \*\*\*p<0.01, \*\*p<0.05 and \*p<0.1.

## 5. Discussion

In the results section, multiple statistical analyses are conducted to answer the research questions and test the related hypotheses. Based on these results, certain assumptions can be made concerning the investigated phenomena. Firstly, the relationship between the samples requested needs to be considered in relationship with customer profitability and customer revenue. From the descriptives, it can be drawn that 68.6% of all customers first requested samples before completing their purchase. Making it a highly used marketing technique for customers to have a first experience with the product to easify their choice. Of all those customers that requested samples, 22.3% made a purchase. Implying that more than 20% of all sample requests will result in an actual purchase. However, besides the usage and conversion rate of this marketing technique, one of the goals of this paper is to explore the linear relationship between the variables. From the regression models, an average coefficient of around 110 euros can be derived with a significance level lower than a p-value of 0.05. Moreover, when a customer places a sample request before purchasing, their customer profitability is expected to be around 110 euros higher (for the particular products sold by the research company). Besides the customer profitability, also the customer order quantity was investigated. Across the linear models, the average regression coefficient was calculated around a value of 0.5 and had a lower significance level compared to a p-value of 0.01. Implying that when samples were requested by a customer before their purchase, the order quantity would be 0.5 higher. Both the effects on customer profitability and quantity are relatively low in comparison with average profitability and quantity. However, it can still be concluded that free sample marketing has a positive effect on both customer profitability and quantity. Therefore, the **first hypothesis** can be **approved**.

For the second hypothesis, this paper examined the relationship between the value and quantity of the first order in comparison with retention order(s). Based on the literature, the assumption was made that the first order would be smaller in comparison with the second order, this being caused by customers wanting to first experience the products before fully committing to the product and ordering larger quantities. To rephrase this assumption in a linear model, the second hypothesis stated that the first order profitability and quantity had a negative relationship on retention order profitability and quantity. Assuming that the higher the first-order value and quantity are, the lower the retention order and quantity will be. The descriptives of these variables show us that the average value of the first order is around 535.76 euros and the mean quantity ordered is 2 products. The retention profitability, on the other hand, had an average value of 856.21 and a mean quantity of 3 products. Therefore, looking at the descriptives, it can be stated that the retention order values are indeed higher compared to the values of the first order. However, a regression analysis was conducted to investigate the linear relationship between the different variables. From the regression analysis between first order and retention order profitability, the first model confirmed the assumption of a negative significant relationship. With significant negative coefficients of -0.51 and -0.41 on retention-order profitability and quantity, the assumption can be made that relationship actually exists between the variables. However, when you consider the simplified model and the model with the country control variables, the effects become insignificant. Making it hard to give supporting conclusions concerning the second hypothesis. Moreover, the effect cannot be seen as existing across multiple models, including and excluding other variables. Therefore, based on all the conducted regression models, the second hypothesis is partially rejected. However, future research is necessary to provide full disclosure regarding this topic.

Lastly, the effect of email marketing on the retention of customers was measured based on email and order data. The hypotheses stated that a positive relationship was expected between the discussed variables. To investigate this relationship, different descriptives and binary logistic regression models were conducted between if a customer placed a retention order, whether the customer was a newsletter subscriber and the engagement of customers with the received emailing. Of the customer base, 9.4% was newsletter subscriber and placed multiple orders. Of all the customers that placed multiple orders (45), 77% of them were newsletter subscribers (37). Moreover, the largest part of retention customers subscribed to the email newsletter. However, looking at the binary logistic regression, no significant relationship was found between the two variables. Something that could be expected, as there were 244 of the 278 newsletter subscribers that did not place multiple orders. Therefore, based on the first binary logistic regression, no assumptions could be made regarding the examined variables. However, besides the direct relationship between those variables, also the relationship between different engagement variables and retention was measured. Based on this analysis, the association between the level of engagement on received emails and the possibility of repurchasing was measured. From this binary regression analysis, significant relationships were found between the independent variables 'Emails received', 'Open rate' and 'Click-to-open rate' and the dependent variable 'Retention order'. Implying that when one of these engagement variables increases, also the possibility of retention increases. Nonetheless, as can be seen in the regression table, all the effects were relatively small, showing us that the effect of the independent variables is not that large on the dependent variable. To conclude, based on both the regressions with newsletter subscriptions and the engagement variables, the third hypothesis is rejected, and the fourth hypothesis is accepted. Based on the results, it can be stated that email subscription does not

directly enhance retention. However, if the engagement is high with the received emails, the retention can be higher. Implying that when the received emails are relevant, customers engage with the message and are more likely to repurchase.

#### 6. Limitations & Recommendations

Across the literature, there was a lack of quantitative studies that measured the particular examined topics of this paper. Furthermore, existing studies did not research the online selling of consumer products, a customer behavior that has arisen in the last few years. Therefore, this paper tried to fill these gaps by conducting a quantitative analysis in a solely online environment. However, the study also contained some limitations and flaws that need to be addressed for future studies.

In this paper, the company researched was an online seller of smart home roller blinds and duo roller blinds. The company started selling their products at the end of June 2021. Because the paper only analyzed this specific company and its products, the study is limited to a really specific product and market. Therefore, the generalization of the findings is limited to other markets and products. To expand the findings and make them more applicable to other companies, future research should be conducted more broadly, taking into account different companies with different products.

Furthermore, based on the results, this paper approved the first hypothesis. In this analysis, a linear coefficient of around 110 euros was listed for the regression between Samples requested (SAM) and customer profitability (CP). This is against the average customer profitability of 819.03 euros. Furthermore, the regression coefficient of samples requested (SAM) on order quantity (OQ) was around 0.5 products. Despite the variables' effect being

significant, the effect of samples on both dependent variables is relatively small, in comparison to the average values of the analyzed company. To put this into perspective, when customers ordered samples, they did not even order a single product more (only 0.7 more). Therefore, future research should examine if this relationship is stronger when the sample size increases or if it may differ across certain markets.

Because the company that was analyzed was a startup company, the sample size of some regression models can also be seen as relatively small. For instance, the second hypothesis was tested based on a regression model that only had a sample size of 41. Therefore, the strength and effects of the variables were difficult to interpret and generalize. Moreover, in future research, a higher sample size should be used to assess the different relationships between the variables. Improving the models and making it more reliable for other research.

Lastly, as mentioned previously, this paper tried to analyze different marketing techniques and customer purchase behavior for the selling of interior products in an online environment. Therefore, the company analyzed was solely selling their consumer products through an online channel. Moreover, there were no physical stores or showrooms to first experience the product before purchasing as a customer. The study tried to fill the gap by considering an online environment. However, a comparison between online and offline is missing. Therefore, differences and similarities are not discussed. As a future recommendation, researchers should find a way to analyze both environments and highlight the key differences between the discussed marketing techniques and purchasing behavior. Providing literature with a more comprehensive view on the examined topics.

## 7. Conclusion

In this paper, four different hypotheses were listed based on existing academic literature. The relationships between free sample marketing & purchasing behavior, first-order & retention order(s) and email marketing and retention order(s) were measured to analyze purchasing behavior and marketing techniques in the online selling of technological interior products. To test the different hypotheses, descriptive statistics and linear/binary regressions were used to discover the relationship between examined variables. Based on the results, evidence has shown that free sample marketing had a positive effect on both customer profitability and order quantity. Implying that when a customer has requested a sample before his purchase, he is more likely to be more profitable and order a higher quantity across his customer lifetime. Besides the first hypothesis, the second and third hypothesis were rejected based on insignificant relationships between the variables. However, in addition, the effect of email marketing was also measured based on different engagement values. From a binary regression, evidence has shown that several engagement values had a positive effect on the probability of retention. Implying that the more a customer is engaged with the received emailing, the more likely he is to repurchase.

# 8. Acknowledgement

First of all, I want to thank Dr. Leszkiewicz for supervising me during the writing of my master thesis. If I had any questions or needed feedback, help was provided when necessary. Furthermore, I want to especially thank the company that I analyzed. Based on the permission I had for accessing the data, I was able to do my quantitative analysis. I was free in doing my analysis and was not restricted in doing anything with the extracted data. Furthermore, I really enjoyed my time at the company, both in a formal and informal way.

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# **Appendix**

# Appendix A: Literature overview 'Free sample/Product trial marketing'

Authors	Year	Journal	Analysis Typ	e Key takeaways
Kempf D., Smith R.	1998	Journal of Marketing Research	Quantitative	Product trials positively influence a customer's beliefs and purchase intentions towards a certain product or brand.
Gerlich R., Browning L., Westermann L.	2011	Academy of Marketing Studies Journal	Quantitative	Product sampling has a positive effect on the feelings towards products (FTP) and likelihood to Purchase (LTP).
Boyers S., Edmondso D., Baker B., Solomo P.		Academy of Marketing Studies Journal	Quantitative	Product trail has a positive influence on consumer attitudes and purchase intentions.
McGuiness D., Brennan M., Gendall P.	1995	International Journal of Advertising	Quantitative	Product sampling promotes incremental sales.
Dhillon R., Agarwal B., Rajput N.	2022	Innovative Marketing	Qualitative	Free samples influence the probability of usage of products and consumers' openness to purchasing.
Schultz D., Block M.	2014	Journal of Consumer Marketing	Qualitative	In store and home delivery samples are an effective sales promotion tool.
Farrag D.	2017	Journal of Food Products Marketing	Quantitative	There is a positive relationship between free samples and customer behavioral responses.
Marks L., Kamins M.	1988	Journal of Marketing Research	Quantitative	Product sampling leads to stronger beliefs and attitudes towards a certain product or brand.
Lammers H.	1991	Journal of Consumer Marketing	Quantitative	Free samples have a positive effect on the immediate purchase of products.
Fiore A.	2001	Journal of Interactive Marketing	Quantitative	Product samples enhance pre-purchased attitudes towards a brand and product.
Bawa K., Shoemaker R.	2004	Journal of Marketing Science	Quantitative	Free samples lead to acceleration and expansion effect of customers purchasing.

**Appendix B: Literature overview 'Customer retention'** 

Authors	Year	Journal	Analysis type	Key takeaways
Ahmad R., Buttle F	F. 2001	Journal of Strategic Marketing	Qualitative	Customer retention is an effective marketing strategy for increasing revenues for the firm.
Kumar V., Aksoy L., Donkers B., Venkatesan R., Wiesel T.	2010	Journal of Service Research	Qualitative	Customer Lifetime Value (CLV) shows the present value of future profits generated from a customer across his entire life. Marketing activities should aim to enhance this metric to increase future profitability for the firm.
Williams C., Williams R.	2015	Journal of Marketing Analytics	Quantitative	Marketers tend to overlook the retention of existing customers. Acquisition and retention should be simultaneously conducted for the best firm results.
Chang S., Zhang Z. Wang X., Dong Y.	., 2020	European Journal of Operational Research	Quantitative	A combination of both retention and acquisition is required in marketing activities to reach the highest possible outcome.
Sashi C.	2012	Management Decision	Qualitative	Customers only will place future interactions (retention) if they are satisfied about the first interaction between buyer and supplier.
Zineldin M.	2006	Journal of Consumer Marketing	Quantitative	Customer loyalty can be achieved through providing good product/service quality. Resulting in the maintaining of existing customers (retention).
Thorndike E.	1920	Journal of applied psychology	Quantitative	The Halo effect is a positive cognitive bias toward future interactions based on previous experiences.
Peppers D., Rogers M.	2016	-		Customer share is the revenue coming from a customer's purchases in comparison with the total revenues from a certain product or category of the firm.
Morgan R., Hunt S	. 1994	Journal of Marketing	Quantitative	Trust of the customer is that he is confident that the providing party is reliable and trustworthy. Resulting in the willingness to stay cooperating with a certain firm.
Leuthesser L., Kohli C., Harich K	1995	European Journal of Marketing	Quantitative	Customers tend to have a positive attitude towards a certain product or brand based on their first impression(s).
Jacobson R., Aaker D.	1987	Journal of Marketing	Quantitative	Product quality is one of the key determinants in successful product implementation and related profitability.
Gerpott T., Rams W., Schindler A.	2001	Telecommunications Policy	Quantitative	Customer retention should be part of the strategic marketing planning process. Where customer satisfaction has a significant effect on customer loyalty and retention.
Fornell C., Wernerfelt B.	1987	Journal of Marketing Research	Quantitative	Defensive marketing of retaining customers can be a more useful way of spending marketing resources.

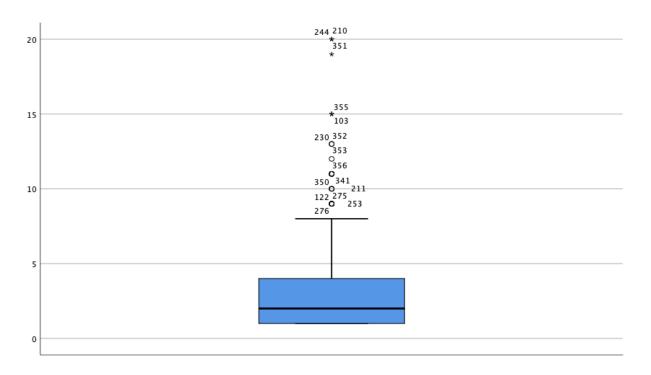
# Appendix C: Literature overview 'Email marketing'

Authors	Year	Journal	Analysis type	Key takeaways
Pavlov O., Melville N., Plice R.	2008	Journal of Business Research	Quantitative	Internet communication has lowered the communication costs towards customers.
Merisavo M., Raulas M.	. 2004	Journal of Product & Brand Management	Quantitative	Email marketing has a positive effect on the likelihood to purchase and enhance recommendation of brand/products to relatives.
Ellis-Chadwick F., Doherty N.	2012	Journal of Business Research	Quantitative	Personalized content is one of the most effective tactics in creating valuable emailing.
Roberts M.L., Berger P.D.	1999	-		Based on customer data, personalized content can be included in the mailing. Making it more relevant for the customer.
Verhoef P.	2003	Journal of Marketing	Quantitative	The use of mailings as an RMI can positively influence the customer share over time.
Ramani G., Kumar V.	2008	Journal of Marketing	Quantitative	Customers demand individual communications because they want to influence the shape of transactions with firms.
Hudak M., Kianickova E.	2017	Procedia engineering	Quantitative	Email marketing is the most used form of direct marketing in the condition of the Internet. It is an inexpensive, yet effective form of addressing existing customers
Hartemo M.	2016	Journal of Research in Interactive Marketing	Qualitative	Relevant emailing results in satisfied customers that are enhanced to take a certain action towards a product or brand.
De Wulf K., Odekerken-Schroder G., Iacobucii D.	2001	Journal of Marketing	Quantitative	Mailing has a positive influence in affecting perceived relationship investment.
Bhattacharya C., Bolton R.N.	2000	Handbook of relationship marketing	Qualitative	Mailing as an RMI is an effective way to preserve existing relationships with customers.

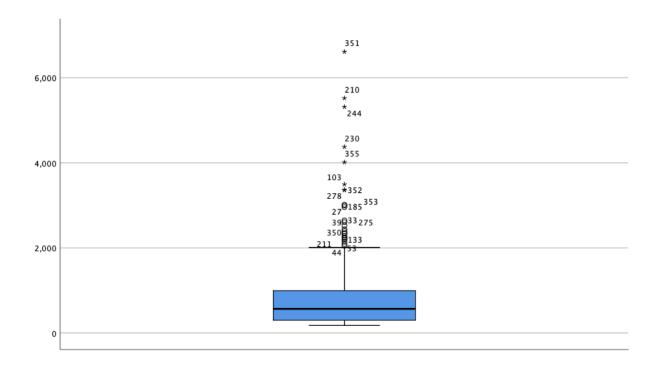
**Appendix D: Frequency table: Country (COU)** 

	Frequency	Percent
Austria	12	3.3%
Belgium	49	13.6%
Germany	59	16.4%
Denmark	2	0.6%
France	5	1.4%
Netherlands	232	64.6%
Sweden	1	0.3%
Total	360	100%

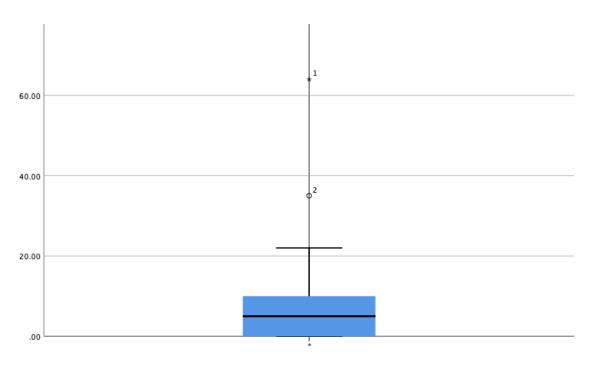
Appendix E: Boxplot 'Order quantity'



Appendix F: Boxplot 'Customer profitability'



Appendix G: Boxplot 'Depth-of-Discount'



# Appendix H: ANOVA table: CP, SAM & Control variables

## **ANOVA**<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2111085.70	1	2111085.70	5.372	.021 <sup>b</sup>
	Residual	137154366	349	392992.453		
	Total	139265452	350			
2	Regression	78635620.9	3	26211873.6	150.017	.000 <sup>c</sup>
	Residual	60629830.8	347	174725.737		
	Total	139265452	350			
3	Regression	79589542.2	9	8843282.46	50.532	.000 <sup>d</sup>
	Residual	59675909.5	341	175002.667		
	Total	139265452	350			

a. Dependent Variable: CP

b. Predictors: (Constant), SAM

c. Predictors: (Constant), SAM, DA, DP\_Per

d. Predictors: (Constant), SAM, DA, DP\_Per, AT, SE, FR, BE, DK, DE

Appendix I: Regression models: CP, OQ, SAM & Control variables

Model	DV Customer profitability	DV Customer profitability	DV Order quantity	DV Order quantity
		Unstandardized regi	ression coefficients	
	$\boldsymbol{\mathit{B}}$	В	В	В
(Constant)	648.93 (59.24)	690.32 (44.45)	2.33 (0.22)	2.29 (0.18)
SAM	166.38 (71.79)**	114.85 (48.38)**	0.73 (0.27)***	0.47 (0.17)***
Promotion variables				
DA		8.34 (0.40)***		0.03 (0.00)***
DoD		-77.34 (6.57)***		-0.24 (0.02)***
N	351	351	351	351
R2	0.015	0.565	0.021	0.600

c. Dependent variables: Customer profitability (CP) & Order quantity (OQ)

d. Statistical significance: \*\*\*p<0.01, \*\*p<0.05 and \*p<0.1.

# Appendix J: ANOVA table: OQ, SAM & Control variables

## **ANOVA**<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.377	1	41.377	7.530	.006 <sup>b</sup>
	Residual	1917.706	349	5.495		
	Total	1959.083	350			
2	Regression	1175.441	3	391.814	173.497	.000 <sup>c</sup>
	Residual	783.642	347	2.258		
	Total	1959.083	350			
3	Regression	1185.983	9	131.776	58.124	.000 <sup>d</sup>
	Residual	773.099	341	2.267		
	Total	1959.083	350			

a. Dependent Variable: CQb. Predictors: (Constant), SAM

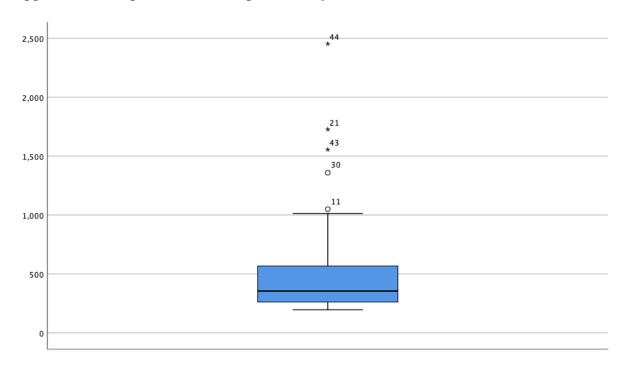
c. Predictors: (Constant), SAM, DA, DP\_Per

d. Predictors: (Constant), SAM, DA, DP\_Per, AT, SE, FR, BE, DK, DE

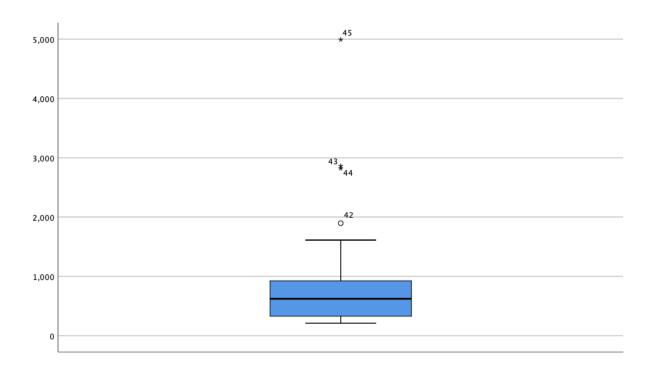
**Appendix K: Frequency table: Country (COU)** 

	Frequency	Percent
Austria	3	6.7%
Belgium	3	6.7%
Germany	9	20%
Netherlands	30	66.7%
Total	45	100%

Appendix L: Boxplot 'First-order profitibilaty'



Appendix M: Boxplot 'Retention-order profitability'



# Appendix N: ANOVA table: FOP, ROP & Control variables

# **ANOVA**<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39999.860	1	39999.860	.210	.650 <sup>b</sup>
	Residual	7440760.84	39	190788.739		
	Total	7480760.70	40			
2	Regression	2559975.82	3	853325.275	6.416	.001 <sup>c</sup>
	Residual	4920784.87	37	132994.186		
	Total	7480760.70	40			
3	Regression	2842769.53	6	473794.922	3.473	.009 <sup>d</sup>
	Residual	4637991.16	34	136411.505		
	Total	7480760.70	40			

a. Dependent Variable: ROP

b. Predictors: (Constant), FOP

c. Predictors: (Constant), FOP, DA, DP\_Per

d. Predictors: (Constant), FOP, DA, DP\_Per, BE, AT, DE

Appendix O: Regression models: FOP, FOQ, ROP, ROQ & Control variables

Model	DV Retention order Profitability	DV Retention order quantity
	Unstandardized r	egression coefficients
	В	В
(Constant)	719.75 (134.39)	2.56 (0.48)
FOP	-0.122 (0.27)	
FOQ		-0.135 (0.25)
N	41	41
R2	0.005	0.007

a. Dependent variable: Retention order profitability (ROP) & Retention order quantity (ROQ)

b. Statistical significance: \*\*\*p<0.01, \*\*p<0.05 and \*p<0.1.

Appendix P: ANOVA table: ROQ, FOQ & Control variables

# **ANOVA**<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.794	1	.794	.291	.593 <sup>b</sup>
	Residual	106.425	39	2.729		
	Total	107.220	40			
2	Regression	29.660	3	9.887	4.717	.007 <sup>c</sup>
	Residual	77.559	37	2.096		
	Total	107.220	40			
3	Regression	40.774	6	6.796	3.477	.009 <sup>d</sup>
	Residual	66.446	34	1.954		
	Total	107.220	40			

a. Dependent Variable: ROQ

b. Predictors: (Constant), FOQ

c. Predictors: (Constant), FOQ, DA, DP\_Per

d. Predictors: (Constant), FOQ, DA, DP\_Per, BE, AT, DE

Appendix Q: Frequency table: Placed a retention order (RO)

	Frequency	Percent
Placed only one order	315	87.2%
Placed multiple orders	45	12.8%
Total	360	100%

Appendix R: Binary regression model: Retention order (RO), Newsletter subscriber (NS) &

Model	1	2	
	В	В	
(Constant)	-1.764 (0.31)	-1.643 (0.35)	
NS	-0.207 (0.36)	-0.27 (0.37)	
Control Variables			
DA		0.003 (0.002)**	
DoD		-0.055 (0.038)	
N	360	360	
R2 (Nagelkerke)	0.002	0.027	

**Control variables** 

c. Dependent variable: Retention order (RO)d. Statistical significance: \*\*\*p<0.01,\*\*p<0.05 and \*p</li>