

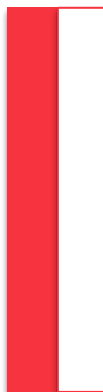
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ECONOMICS OF BUSINESS AND STRATEGY

Understanding Customer Retention and its Determinants: the case of OfficeLink

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Understanding Customer Retention and its Determinants: the case of Office-Link

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RESUMO

Ao estudar o comportamento e as intenções dos clientes, as empresas podem gerir melhor a sua relação com os mesmos de forma a satisfazerem as suas necessidades e desenvolverem vantagens competitivas. Consequentemente, as empresas fortalecem a sua base de clientes através da retenção de clientes, permitindo o aumento da sua rentabilidade.

Este estudo foi desenvolvido no âmbito de um estágio na OfficeLink, uma empresa de comércio eletrónico de retalho. Fundada em 2017, esta empresa foca-se na melhoria da experiência na compra para clientes empresariais e particulares que comprem material de escritório e escolar. No estágio, o objetivo foi avaliar e aumentar a retenção dos clientes da empresa através da implementação de ações sugeridas e do desenvolvimento de um plano de marketing para 2022.

Para tal, foi realizado um estudo econométrico para entender os fatores que podem impactar a retenção de clientes. Este estudo quantitativo utilizou dados recolhidos da empresa referentes a compras desde sua fundação até ao final do estágio. Com recurso a uma metodologia quantitativa, foi possível reunir informações para sustentar as recomendações à empresa, que podem ser úteis no processo de tomada de decisão.

Os resultados do estudo mostram que as informações passadas sobre o montante gasto na compra, a quantidade de produtos e descontos associados não são relevantes para medir a retenção de clientes. Por outro lado, o estudo sugere que a diversificação dos produtos comprados, o número de compras, o retorno após a primeira compra e a duração do relacionamento com o cliente influenciam a retenção de clientes. Além disso, o estudo diferenciou os clientes empresariais dos individuais devido às diferenças de comportamento durante a *customer journey*.

Palavras-chave: retenção, comércio online, CRM, *customer journey*

ABSTRACT

By understanding the customers' behaviour and intentions, companies can better manage their relationship with them to satisfy their needs and build competitive advantages over the competitors. Ultimately, companies strengthen their customer base through customer retention, leading to higher profitability.

This study was developed as part of an internship at OfficeLink, a retail e-commerce company. Founded in 2017, this company aims to improve the sales experience for both corporate and individual clients who buy office and school supplies. In the internship, the objective was to evaluate and increase the retention of the company's clients through the implementation of suggested actions and the development of a marketing plan for 2022.

To accomplish it, an econometric study was conducted to understand the factors that can impact customer retention. This quantitative study used data collected from the company regarding purchases from its foundation until the end of the internship. By using a quantitative methodology, it was possible to gather information to sustain recommendations to the company, which may be helpful in the decision-making process.

The results of the study show that past information on the amount spent, the number of products and discounts are not relevant to measure customer retention. On the contrary, the study suggests that diversification of products bought, the number of purchases made, the return after the first purchase and the duration of the customer's relationship influence customer retention. Besides, the study differentiated the corporate clients from the individual ones because of their differences in the customer journey.

Keywords: customer retention, e-commerce, CRM, customer journey

TABLE OF CONTENTS

ACKNOWLEDGMENTS	i
RESUMO	ii
ABSTRACT	iii
1. INTRODUCTION	1
1.1. Context of the study	2
1.1.1. OfficeLink	2
1.1.2. Internship's Project.....	2
1.2. Report's structure	4
2. LITERATURE REVIEW	5
2.1. Customer Lifetime Value and Customer Equity.....	5
2.2. Customer Retention.....	7
2.3. Customer Experience	10
2.4. Customer Journey.....	11
2.5. Customer loyalty in E-commerce.....	13
3. OBJECTIVES AND METHODOLOGY OF THE EMPIRICAL STUDY	15
3.1. Objectives of the study	15
3.2. Quantitative methodology: an econometric study	16
3.3. Data	16
4. ECONOMETRIC MODEL	19
4.1. Data analysis.....	19
4.2. Hypothesis Formulation	21
4.3. Method of Analysis.....	25
4.4. Development of the model.....	26
4.5. Discussion of results.....	28
4.5.1. Individual Clients.....	28
4.5.2. Business Clients	30
5. CONCLUSIONS.....	32
5.1. Recommendations and Final Remarks	32
5.2. Limitations of the study.....	34
REFERENCES.....	36
APPENDIX.....	43

LIST OF TABLES

Table 1 - Hypotheses of the study	25
Table 2 - Individual Clients: Descriptive Statistics	26
Table 3 - Business Clients: Descriptive Statistics	27
Table 4 - Individual Clients: Regression Results	29
Table 5 - Business Clients: Regression Results	30

LIST OF GRAPHS

Graph 1 - Sample by Customer Type	19
Graph 2 - Observations of Offline Channel by Customer Type	20
Graph 3 - Sample by Channel used	20
Graph 4 - Sample by Geography.....	20
Graph 5 - Customers by year of registration.....	21

LIST OF FIGURES

Figure 1 - OfficeLink's logo	2
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ABBREVIATION INDEX

B2B = Business-to-Business

B2C = Business-to-Consumer

CE = Customer Equity

CLV = Customer Lifetime Value

CLRM = Classical Linear Regression Model

CRM = Customer Relationship Management

SME = Small and Medium Enterprises

OLS = Ordinary Least Squares

1. INTRODUCTION

The emergence of new technologies has forced companies to face new challenges, and new perspectives about how businesses can thrive have been developed. Aiming to create value for the companies, the role of the customer became an increasingly discussed topic which influenced the creation of new approaches and instruments, namely in marketing, such as customer relationship management (CRM). The business strategy became focused on building a long-term relationship with the company's customers (Greenleaf and Winer (2002).

By understanding consumers and following their behaviour over time, businesses can implement strategies that will encourage their loyalty, avoiding switching to another company with similar products or services. Therefore, companies increase their profitability by fostering repeated purchases and reducing acquisition costs of new customers (Greenleaf & Winer, 2002).

Researchers have developed the concept of customer retention and its positive impact on companies' profitability (Alkitbi et al., 2020). To understand how to best manage the relationship with customers, many studies have focused on the factors that can lead consumers to be loyal to a company, such as trust and customer satisfaction (Alkitbi et al., 2020; Danish et al., 2015; Tamuliene & Gabryte, 2014). Thus, in managerial contexts, it is fundamental to define customer retention, find ways to measure it and identify its determinants (Aspinall et al., 2001). However, according to the literature, there is often a lack of factual information that managers can rely on when making decisions regarding retaining actions and strategies, which leaves them very dependent on their intuition (Rust et al., 2004; Vogel et al., 2008).

This study was developed under the scope of an internship at Easy Office - Stationery & Office Supplies SA, also known as Office Link. It aims to understand how customer retention is managed at the company and the impact that repeated purchases can have on the retention of clients. An econometric study was conducted to understand the main factors affecting the active or inactive status of the customers, providing insights into actions that the company can include in its marketing plan to retain clients.

1.1. Context of the study

1.1.1. OfficeLink

OfficeLink was founded in 2017, and it is a Portuguese retail company that sells school and office supplies. It belongs to Firmo, a Portuguese, 65-year-old company, that produces and sells these supplies in national and international markets.



Figure 1 - OfficeLink's logo

The company's mission is to deliver the best customer experience possible through competitive prices, processing orders efficiently, and guaranteed, personalised service for its clients. Currently, the company relies on several sales channels, online and offline, to reach its customers: its e-commerce platform, its first physical store launched in 2021, and the two marketplaces: Dott and KuntoKusta. Furthermore, if the customers directly contact the company's commercial department, they can also access a more personalised service.

Over the years, OfficeLink has increased its customers' base: individuals, schools and associations, small and medium enterprises, and corporate companies. Hence, the company's business model is focused on both a business-to-consumer (B2C) and a business-to-business (B2B) perspectives.

1.1.2. Internship's Project

Since the company's values and efforts are customer-oriented, it has also developed strategies to increase customer retention, such as implementing OfficeLink Loyal Customer, its loyalty program (Appendix 1), and personalising discounts in newsletters for different customers' segments. However, the need to understand how the customers are retained in the company and what truly creates value for them persists.

I integrated the marketing and sales department as an intern, with the aim to develop marketing strategies for 2022 (Appendix 2). Therefore, the objectives of the internship were focused on analysing the customers' experience with the company, improving the customer journey through digital marketing strategies, while developing the diagnosis of factors that

fostered the retention of customers in the company and understanding what could increase consumer loyalty.

Some of the tools that proved to be helpful to achieve the goal set at the beginning of the internship were the diagnosis of the market, with resource to benchmarking analysis of the price and the service of the competitors and to PESTEL analysis, and an internal diagnosis using SWOT analysis, Google Analytics, E-goi, Google Adds, and Meta Business Suite. These diagnoses were developed monthly to understand the company's position in the market.

In addition, diagnoses' results were used to create strategies and a marketing plan according to the company's previously decided invoicing and retention objectives. In detail, the marketing plan included the following sections:

- Price strategies according to the different channels of the company.
- Definition of a catalogue of the products presented in marketplaces.
- Setting up the content creation for all the external communication channels of the company.
- Action plan for customers with abandoned shopping baskets.
- Prioritization of necessary changes to the website according to the associated IT budget through continuous communication with the IT department.
- Improvement of OfficeLink's performance on Google's existing digital platforms through regular meetings with the account managers.

After the evaluation of the necessary changes in each topic, the prioritization of each task was made along with my internship supervisor. During the second stage of the internship, the implementation of referred action plan became part of my responsibilities. In this stage, communication with different people was necessary, because each task required different skills of the company's employees. Additionally, IT functions were part of a collaboration with the IT department of Firmo and a third-party company whose responsibilities include the development and maintenance of the company's website.

Along with that, I also developed an econometric study to understand the factors that most influenced customers' loyalty and, thus, understand the weight of each one in the retention

of customers. This study will be explored in the present report as it was the main task to analyse the retention of customers during the internship at OfficeLink.

1.2. Report's structure

In addition to the introduction, this report is organised into 4 main chapters. In Chapter 2, there is a literature review that addresses the following topics: customer equity, customer retention and the influence of its main factors, customer journey and experience during the relationship with the company, and a brief context of these topics in the e-commerce context. Chapter 3 presents the main objectives of the study and the choice of methodology as well as the data source. In Chapter 4, the econometric study is developed through an analysis of the provided data, the formulation of hypotheses, and the analysis of the results. Finally, Chapter 5 presents the main conclusions, including the implications of the findings in the context of OfficeLink, suggestions for improvements, and the limitations of the study.

2. LITERATURE REVIEW

Over the years, the customer has gained more recognition as part of companies' assets, which has increased the studies in the literature related to its influence in creating value (Bolton & Drew, 1991; S. Gupta et al., 2004; Rust et al., 2004; Vogel et al., 2008). The customer-centred viewpoint has highlighted the need to create long term relationships through measurement of customer satisfaction, customer value and market orientation, in detriment of short-term relationships (Bolton & Drew, 1991; Rust et al., 2004). The development of this perspective highlights concepts such as customer lifetime value (CLV) and customer equity (CE) and positions the customer as a source of competitive advantage to firms and a fundamental dimension of long-term performance maximization (Rust et al., 2004; Vogel et al., 2008; Zeithaml et al., 2001).

In this chapter, such concepts are addressed, along with the emergence of customer retention theories in the literature and how it can be influenced by the experience and journey of the customer during its relationship with the company. Additionally, there is a brief context of these topics in the e-commerce businesses.

2.1. Customer Lifetime Value and Customer Equity

As mentioned before, the customer lifetime value has attracted discussions over the years as a metric that managers and researchers should use to measure the return on marketing investment (Gupta et al., 2006; Kim et al., 2020; Rust et al., 2004; Vogel et al., 2008). According to Farris et al. (2010), the definition of CLV is “the present value of the future cash flows attributed to the customer relationship”, which can be helpful to managers in the decision-making process. In addition, CLV emerged to meet the need for a portfolio of different relationship stages between the company and its customers in customer equity measurements (Johnson & Selnes, 2004; Yu & Yuan, 2019).

Even though it is a complex metric to quantify (Farris et al., 2010; Vogel et al., 2008), Rust et al. (2004) develop a conceptual model of CLV. This model analyses marketing as an investment to improve customers' perceptions. By doing so, it increases the capacity to attract and retain them, which develops the customer lifetime value and, consequently, the company's customer equity. Ultimately, the return on marketing investment results from the relation between customer equity and the cost of marketing investment. The authors also

include in the model the impact of competitive effects, a novelty in the study of customer equity. Competition is incorporated in brand switching, based on the assumption that customers move from one competitor to another during their decision of what to buy (Rust et al., 2004).

While CLV is analysed as the future value of a present relationship with customers, customer equity extends that concept by being defined as “the total of the discounted lifetime values summed over all of the firm’s current and potential customers” (Rust et al., 2004). In other words, this concept emerges as an asset to measure the expectations behind the future behaviour of the customers of a firm (Vogel et al., 2008).

The importance of this concept relies on the improved understanding of customers’ attitudes, which allows companies to develop a more customer-oriented approach in their decision-making process (Kim et al., 2020; Rust et al., 2004; Vogel et al., 2008). Consequently, companies will expand their capacity to achieve sustainable growth and competitive advantage by maximising long-term performance (Kim et al., 2020; Vogel et al., 2008; Zeithaml et al., 2001). Therefore, by understanding the value of its customer base and where it comes from, the firm can take advantage of its strengths and improve its weaknesses (Rust et al., 2004). Since this concept can improve a firm’s performance, researchers have developed CE models to maximise return on marketing investments by connecting marketing decisions and customer actions (Villanueva & Hanssens, 2007; Vogel et al., 2008).

Customer equity models are often analysed in the literature according to three main drivers: value equity, brand equity, and relationship equity (Kim et al., 2020; Vogel et al., 2008; Yu & Yuan, 2019; Zeithaml et al., 2001). According to Zeithaml et al. (2001), these drivers can be used as strategic investment categories that allow the creation of revenues in business. First, value equity is defined as the customer’s perception of the utility of the company’s products based on their quality, price, and convenience, by weighting the relation between what he offers and what he receives (Kim et al., 2020; Rust et al., 2004; Vogel et al., 2008; Yu & Yuan, 2019; Zeithaml et al., 2001). Second, brand equity is more ancient than customer equity (Villanueva & Hanssens, 2007). This notion relies on the customer’s attitude or thoughts towards the brand, which is a much more subjective assessment than the previous one (Kim et al., 2020; Rust et al., 2004; Vogel et al., 2008; Yu & Yuan, 2019; Zeithaml et al., 2001). Finally, relationship equity incorporates the evaluation of the customer regarding the features of its relationship with the company, which will dictate the emotional connections between

the two (Kim et al., 2020; Rust et al., 2004; Vogel et al., 2008; Yu & Yuan, 2019; Zeithaml et al., 2001). According to Kim et al. (2020), these three factors of CE can be sources of sustainable growth related to customer satisfaction.

In their study, Villanueva and Hanssens (2007) suggest some guidelines for constructing CE models based on the following characteristics: the lifetime of a customer, profit expansion, competition, endogenous parameters, sources of risk and forecasted accuracy of CLV models. However, competition and endogenous parameters are present in a few models. The authors also considered acquisition effort, customer retention and add-on-selling as drivers of customer equity.

2.2. Customer Retention

According to Gordini and Veglio (2017), customers are becoming more willing to switch from one competitor to another since easy access to information makes this process more accessible and less costly. Through repeated purchases of the same brand and cross-buying effects, retained customers are an important source of revenue for firms (Dawes, 2009). Therefore, customer retention and churn studies have been developed in the relationship marketing literature, with a focus on customer equity and lifetime value (Alkitbi et al., 2020; Chang & Zhang, 2016; Gupta et al., 2006; Pfeifer & Farris, 2004).

As part of customer equity, relationships with consumers have gained importance in the companies' strategy, which was noticed in the previously analysed literature. Therefore, as already mentioned in the first Chapter, Customer Relationship Management emerged as a business strategy to understand the consumers' perceptions and the effects of their retention and churn (Lamrhari et al., 2022; Pashaie et al., 2020). This focus on retention is derived from the ability to generate growth in the companies through the increase in the customer base and the customer lifetime (Lamrhari et al., 2022).

According to the literature, customer retention allows companies to increase their profitability (Alkitbi et al., 2020). In the study of Reichheld (1996), as cited in Finnie and Randall (2002), the author forecasted that an increase of 5% in customer retention could originate an increase in the profitability of a customer's lifetime of 30-40% in the software and building management companies and 90% in the financial services and advertisement industry (Finnie & Randall, 2002). Although there is a significant impact on customer value

with the improvement of customer retention, the firm should always measure the cost of retaining a customer and analyse if it is not too costly (S. Gupta et al., 2004). However, it was also proven that the cost of maintaining a customer is inferior to the cost of acquiring a new one (Ahn et al., 2006; Dawes, 2009; Fornell & Wernerfelt, 1987; Siber, 1997). Gordini and Veglio (2017) find that in the business-to-business context, the retention of customers is even more valuable since more significant and frequent purchases can improve the financial performance of firms.

The most common interpretation of customer retention is based on the repurchase of products in the same company because of a positive disposition to the brand, which is related to customer loyalty (Alkitbi et al., 2020; Aspinall et al., 2001; Cambra-Fierro et al., 2021; Danish et al., 2015; Dawes, 2009; Tamuliene & Gabryte, 2014). Nevertheless, retention can be described through behavioural or attitudinal variables and it is important that each company defines it accordingly to the priorities and the business they are in (Aspinall et al., 2001).

When a customer has a psychological disposition to a specific object while purchasing it, that is the reflection of a preference towards the retailer, even though another could offer additional benefits (Vogel et al., 2008). Loyalty intentions are responsible for this effect. Customer loyalty can be positively influenced by the three customer equity drivers, which can lead to an increase in a firm's future sales and, so, it is considered a competitive advantage (Danish et al., 2015; Lin & Wang, 2006; Vogel et al., 2008). This concept of loyalty allows companies to maintain long-term relationships with their consumers, thus, developing customer retention (Hallowell, 1996; Kim et al., 2020).

On the other hand, many studies address customer churn, that is, the termination of the relationship between a customer and a firm after a certain period (Gordini & Veglio, 2017). Therefore, in order to develop customer retention is essential to have low churning rates in a company. Gordini and Veglio (2017) demonstrated this relation and, in addition, showed that it is possible to achieve a higher level of profits and revenues by contacting potential churners.

Another focus of the literature is to understand the main factors that affect customer retention (Alkitbi et al., 2020; Dawes, 2009; Jaiswal et al., 2018; Villanueva & Hanssens, 2007). Hence, it seems important to bring light to the following factors: customer

satisfaction, trust, commitment, tenure (relationship length), relationship breadth and switching costs.

Customer satisfaction can be defined as the confirmation of a customer's expectations according to his reactions and emotions (Hennig-Thurau & Hansen, 2000). Customer loyalty can be an indicator of customer satisfaction since maintaining a long-term relationship with the company may suggest that the customer is satisfied with the brand (Alkitbi et al., 2020; Hallowell, 1996). Repurchasing also indicates that the customer is satisfied with the previous experience (Danish et al., 2015). In addition, customer satisfaction induces word-of-mouth (WOM) since customers that are satisfied with certain products or brands will recommend them to friends or relatives (Danish et al., 2015). A satisfied customer is more likely to be retained than a non-satisfied one. However, it is not certain that a satisfied customer will repurchase (Alkitbi et al., 2020). Thus, when evaluating customer retention, it is important to consider factors other than customer satisfaction.

Trust is another factor that positively influences customer retention (Alkitbi et al., 2020; Jaiswal et al., 2018). According to Mayer et al. (1995), trust is the willingness to take risks in a relationship where one party has expectations about how the other party will act. When it comes to sustaining long-term relationships with consumers, trust plays a vital role in increasing their loyalty to the brand or company (Danish et al., 2015).

When approaching the concept of trust it is essential to understand the relation with commitment (Alkitbi et al., 2020; Danish et al., 2015). A commitment is described as the desire to sustain a relationship that is considered to be valuable between two parties (Moorman et al., 1992). Therefore, commitment varies along with the level of trust a customer has in a company or its products, consequently influencing customer retention (Danish et al., 2015).

The time when the customer maintains a relationship with a company is known as tenure or relationship length (Dawes, 2009; Jaiswal et al., 2018). Previous literature indicates that tenure affects customer retention, creating a relationship of one-side dependency (Jaiswal et al., 2018). A reason for the influence on customer retention may be the risk aversion created during a long-tenure relationship, in which the customer prefers to maintain the relationship with the current company than to experiment the products or services of another one (Dawes, 2009; A. Gupta et al., 2004). Dawes (2009) discovered that although long-tenured

customers do not necessarily accept high prices, they are not very sensitive to price increases. In addition, Jaiswal et al. (2018) mentioned that long-tenured customers are more likely to purchase more regularly, which allows the firm to understand customer preferences.

Therefore, the development of tenure allows the building of relationship breadth, while tenure is also improved by relationship breadth (Dawes, 2009). According to Dawes (2009), relationship breadth is the quantity of different products purchased by a customer in the same company. Besides increasing the revenue per customer, this factor also has a vital role in understanding the consumers' needs, which is crucial for customer satisfaction. Dawes (2009) found that in terms of customer retention, relationship breadth has a more substantial influence when it comes to short-tenure customers than with long-tenured ones.

The last factor affecting customer retention is switching costs, that is, the cost of moving from one company to another one (Danish et al., 2015; Mouri, 2005). According to Mouri (2005), switching intentions increase with the dissatisfaction of customers, which is coherent with repurchase intentions being positively correlated with switching costs, which Danish et al. (2015) validated in their study. Therefore, high switching costs increase the probability of retaining a customer (Villanueva & Hanssens, 2007).

2.3. Customer Experience

Evidence shows that customer retention is positively dependent on the customer experience and customer satisfaction or dissatisfaction is the result of the customer's experience during its relationship with the company (Bejou et al., 1996; Cambra-Fierro et al., 2021). Consequently, the present study suggests that the other factors that affect customer retention also depend on customer experience.

This concept became even more relevant over the years, with the rise of social interactions between firms and customers, where social media plays a crucial role (Cambra-Fierro et al., 2021; Lemon & Verhoef, 2016). According to Lemon and Verhoef (2016), customer experience can be described as a multidimensional construction of the customer's responses to what the company offers during the customer journey. Experiences are a determining factor in creating customer expectations and will dictate the interactions between the firm and customers (Følstad & Kvale, 2018; McColl-Kennedy et al., 2019). Therefore, the investment in developing interactions with consumers is one focus of many companies,

which allows them to create long-term relationships with customers, leading to their retention (Cambra-Fierro et al., 2021).

2.4. Customer Journey

Since customer experience is developed during a customer's journey, this concept is the next to be approached in this literature review. According to Følstad and Kvale (2018), the customer journey study was not coherent in terms of terminology and development of its approaches since it had been developed through part of service design instead of a theoretical academic study. Even though this flexibility of terminology can be beneficial in terms of innovation, a higher level of rigour could favour the communication in organisations regarding this topic. Nevertheless, the customer journey is often related to the process of a customer accessing the offers of a company, where he is confronted with the company's touchpoints (Flavián et al., 2019; Følstad & Kvale, 2018; Tueanrat et al., 2021; Zomerdijs & Voss, 2010). The development of customer journey literature became crucial to understand customer experience since, with the development of technology, it turned out to be challenging to manage and evaluate (Edelman & Singer, 2015; Lemon & Verhoef, 2016).

Before the concept of customer journey emerged, there were already some models that reflected the customer experience, such as the purchase or making funnel and the AIDA (attention-interest-desire-action) model, that can still be used nowadays to support the management of the path-to-purchase of consumers (Lemon & Verhoef, 2016). Some studies even divide the customer journey into three main stages: before, during and after consumption or experience (Demmers et al., 2020; Flavián et al., 2019).

Tueanrat et al. (2020) divided the topic of customer journey into main five themes according to the literature: service satisfaction, its failure and recovery, customer response, co-creation, channels, and technological disruption.

Regarding service satisfaction, failure, and recovery, the literature approaches the service evaluation of a customer during its experience with the company's touchpoints (Tueanrat et al., 2021). Therefore, the company's touchpoints will influence consumers' perception of the firm and, consequently, their satisfaction (Lim et al., 2015). Touchpoints are any direct or indirect contact points with the company's services (Clatworthy, 2011; Tueanrat et al., 2021). Lim et al. (2015) state that customer retention depends on how a company's touchpoints

affect customer satisfaction. With poor customer experiences, service failure and interruption might occur, negatively affecting their satisfaction and increasing the possibility of churn. Service failure is defined as the interruption responsible for making customers diverge from their customer journey (Tueanrat et al., 2021).

According to Tueanrat et al. (2021), consumer responses are the customer's reactions during the interaction with a company's touchpoints. By exploring customer responses, companies can map their customers' journey and evaluate their point-of-view, customer experience, and touchpoints (Tueanrat et al., 2021; Zomerdijk & Voss, 2010). Digital technology has been an advantage in this consumer's analysis since it became easier to understand what the consumers are thinking and to build mechanisms that establish positive connections with them (Stein & Ramaseshan, 2016; Tueanrat et al., 2021).

With the development of globalisation and technology, the consumer has become a co-creator, capable of influencing other consumers and even organisations (McColl-Kennedy et al., 2015). Co-creation includes customer participation in customer experience development and can improve customer-centric strategies (McColl-Kennedy et al., 2015; Tueanrat et al., 2021). In this sense, the consumers could create value with their resources and customise their customer journey, but it is also the company's role to provide the information and platforms where this co-creation process can occur (Barile et al., 2017; Tueanrat et al., 2021). However, the company should intervene according to the customer journey stage and adapt the provided content (Demmers et al., 2020).

The fourth topic Tueanrat et al. (2021) address is the channels that provide consumers with the company's touchpoints during the customer experience. Evidence shows that consumer behaviour changes according to the channel used by the consumer, mainly because the perceived value of the channels differs according to the consumers' preferences (Barwitz & Maas, 2018; Gao et al., 2020; Tueanrat et al., 2021). Additionally, channel preferences may also vary according to the consumer's stage of the journey (Lemon & Verhoef, 2016; Tueanrat et al., 2021). With the increasing availability of channels, many firms adopted the use of at least two marketing channels to reach consumers, named a multichannel system (Kotler & Armstrong, 2010). However, with the evolution of retailing, this multichannel system has originated the omnichannel one. The difference between both is that omnichannel includes not only the adoption of several channels in the company's marketing strategy but also the integration between all the channels capable of producing a richer

experience for consumers, by taking advantage of synergies (Verhoef et al., 2015). In this context, the customer journey is no longer restrained to just one channel, and the customer has more options regarding how to enjoy the company's offers and experiences, which also allows the company to access much more consumers' information (Tueanrat et al., 2021).

Finally, technology also plays an important role in the customer journey analysis. The development of new technologic tools and methods improved the development of new channels, touchpoints, and devices, modifying the way customers behave during the customer journey (Tueanrat et al., 2021). Innovative touchpoints allow the company to develop more emotional bonds with consumers and increase the value provided to them while collecting more accurate and personalised information about its customers (Flavián et al., 2019; Singh et al., 2021). When adopting new technologies, customers' behaviour depends on their opinion regarding the benefits they extract from using the technology since they aim to improve their journey and make it more pleasant (Del Bucchia et al., 2021; Tueanrat et al., 2021). In addition, the stage of the journey influences their adoption of new technologies, so firms must be aware of the importance of mapping the customer journey and customise the technology's involvement according to it (Tueanrat et al., 2021; Vakulenko et al., 2019).

To conclude, the customer journey topic became the target of several studies regarding customer loyalty and how it can affect the company's performance. Therefore, by developing the customer experience during the decision-making process and purchase path of consumers, there is the creation of value for both parties: consumers and companies.

2.5. Customer loyalty in E-commerce

With the development of internet, retailers began to invest in the development of Web services and functionalities that revolutionised the sector and increased the number of opportunities offered to consumers (Ayanso et al., 2010; Hajli, 2014). The development of e-commerce was a result of companies trying to improve business performance and allowed a more facilitated share of information between companies and consumers (Ayanso et al., 2010; Gordini & Veglio, 2017).

Online retailing has grown rapidly over the years with the development of communication networks, data resources and quality of service, however it brought some disadvantages too (Ayanso et al., 2010; Jaiswal et al., 2018). Since information is easier to access, there is a

significant increase in the ease of movement between companies, which ultimately rises the risk of churn (Gordini & Veglio, 2017). Furthermore, e-commerce implies a higher risk for consumers during the purchase process, because the order might not meet costumers' expectations and the possibility of the misuse of costumers' personal data (Brynjolfsson & Smith, 2000; Jaiswal et al., 2018).

Therefore, due to these characteristics, trust is one of the most important factors to establish an online relationship between consumers and companies (Brynjolfsson & Smith, 2000). The role that trust plays in marketing strategies originated the development of research in topics such as loyalty, churn management and customer. In the e-commerce context, retained customers became a more relevant topic to companies, since they have a greater tendency to make larger and repeated purchases(Gordini & Veglio, 2017). In addition, online commerce allows easier spread of word-of-mouth between loyal customers and possible new ones, which was proved to be very effective to raise the company's sales(Jaiswal et al., 2018).

The role of the consumer became even more significant with the advances in social media, where they can actively create content besides the facilitation of communication and being just mere spectators of companies' advertisement. The creation of content allows consumers to share their expectations and preferences, which will ultimately influence the perspective of others regarding the companies' products or services. This is originated the topic of social commerce, where customers can be co-creators (Hajli, 2014).

3. OBJECTIVES AND METHODOLOGY OF THE EMPIRICAL STUDY

In this chapter, the objectives of the internship will be addressed along with the methodology used and gathered data that allowed the development of answers to the main question of the study: which are the determinants that most influence customer retention at OfficeLink?

3.1. Objectives of the study

As mentioned before, the internship at OfficeLink was done in the Marketing and Sales department. As demonstrated in the literature, the customer has a crucial role in the success of companies and must be considered in the decision-making process. Since OfficeLink is a recent company with growth capacity, the customer becomes an essential part of this development. Therefore, the main objective of the internship was to evaluate and increase the retention of the company's clients. To accomplish it, the following sub-objectives were specified in the empirical study:

- Verify the impact of the relationship duration with the client on retention
- Test the impact of the quantity of products and categories purchased on customer retention,
- Verify the impact of the amount spent on purchases on customer retention,
- Check the impact of the number of purchases made on customer retention.

To answer the question of the study, an econometric study was conducted to understand what makes the customer more likely to be retained. Then, the process of choosing which customer deserves a bigger investment to sustain long-term relationships with the company is facilitated, since OfficeLink will be aware of what behaviours and of clients indicates a larger likelihood of them being loyal. To do so, past data regarding the clients and their purchases was analysed in function of the definition of retention that the company determined. Therefore, this study aims to identify what affects the position of customers with the company and posteriorly implement different actions according to the likelihood of the experience of the purchase being associated with the retention of the client.

3.2. Quantitative methodology: an econometric study

Given the data provided by the company and the objective of understanding which segments of customers are more likely to be retained in OfficeLink, this study relied on a quantitative methodology, with the development of an econometric model. This methodology is characterized by the exploitation of data through models and hypotheses to solve a problem. Since it focuses on objective measures, the interpretation of numeric variables provides a much clearer understanding of the situation than when using qualitative methodology. After the results being interpreted, this tool can be very helpful in business matters since the decision-making process becomes facilitated due to the empirical conclusions of the study (Waters, 1994).

Additionally, in the study of Alkitbi et al. (2020), the authors found that the majority of the studies that have customer retention as the main topic relied on quantitative methodology to explain which factors affected CE the most. Although most of those studies collected data from questionnaires, the model in this study used data from OfficeLink's database. For this reason, secondary data was used since the main purpose of its collection was not this study.

According to Heij et al. (2004), decision-making often requires quantitative data that economic theory does not provide. In marketing and other business disciplines, econometrics is often used to explain the relation between variables, in order to improve the decision-making process that will affect them (Heij et al., 2004). This econometric study allowed to summarize the most important information regarding those already-mentioned targets to understand the factors that indicate an increase probability of them maintaining a longer relationship with the company.

Nevertheless, Malhotra and Birks (2007) point out the limitation that is choosing between quantitative or qualitative methodology, since in order to choose just one methodology the findings that the other would provide are dismissed. Therefore, they should be complementary.

3.3. Data

The data that was used to conduct this study was provided by the company where the internship took part of. This data includes information regarding the behaviour of the clients and the purchases they made since the company was founded (2017) until April 30, 2022.

To protect the confidentiality of the clients, they were identified with a client ID and every personal information was erased. Some clients were excluded from this study, such as clients used in the company's simulations and tests, clients that work or worked at OfficeLink or Firmo and customers from public procurement tenders. This exclusion of data aims to minimize the biases that might occur.

In addition, some general clients had to be excluded from this data. This includes every client from Dott, since the company does not have access to the information regarding each customer, so it is not possible to differentiate them. Also, customers have the option to not create a personal file in the company when making purchases in the Porto's store. When this happens, their purchases are registered as a general client, therefore, this client was excluded from the data that was used to this study.

After the necessary changes were made, the database included the following information:

- Identification number of the client
- Information regarding each purchase: purchase date, type of document (invoice and credit note) and number of the document
- Information regarding the products sold: product ID, number of the product, quantity sold of each product, unit price of the product, discount associated with the product (if applicable), cost of the product for the company
- Number of returns that the client has made
- Total amount of money spent in the company (in euros)
- Category of products of each product (6 categories: office, school, technology and electronics, hygiene and individual protection, arts, presents)
- Type of client (Small and medium enterprises (SME), individual clients and corporate companies)
- Customer's district
- Registration date on the website of OfficeLink (in the lack of this information, the data of the first purchase was assumed)
- Channel used for the purchase (Online, website of the company, or Offline, store or personalized orders with the commercial department)
- Customer's status in the company (active or inactive): an individual client is considered active if they have purchased in the last six months in the company and

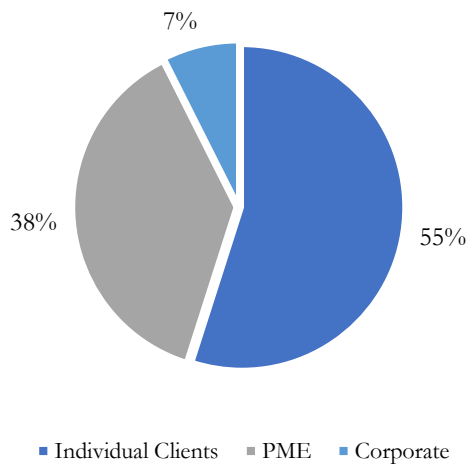
a business client is considered active if they have purchased in the last three months. These concepts, that were defined by the company and incorporated in this study, follow the suggestion of the literature that these states should consider customers' purchase activities (Chang & Zhang, 2016).

4. ECONOMETRIC MODEL

4.1. Data analysis

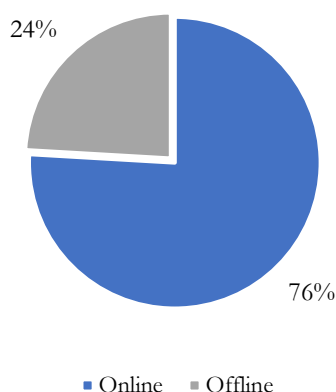
The data include 3796 observations of purchases made by 2096 customers. However, as mentioned before, the company divides the customers of the sample into three different groups: individual clients, SMEs, and corporate ones. In the first group, there are 2085 observations of the individual clients group representing 54.93% of the total sample. Regarding business clients, they encompass 1711 observations, which is 45.07% of the total sample. However, SME represent a greater weight of the sample with 1429 observations, which translates into 37.64% of the total sample and 83.52% of all business clients.

Graph 1 - Sample by Customer Type

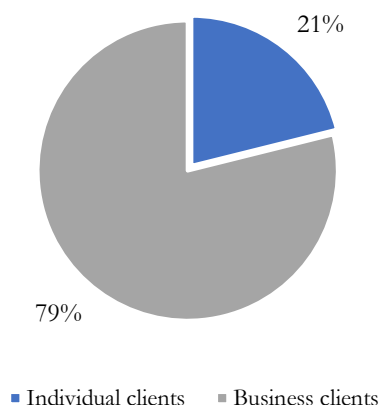


As mentioned before, the customers have two channels available to buy products from the company: the online channel and the offline one. The sample shows that most customers' transactions were made in the online channel, representing 75.92% of the total sample. The reason behind this may be that the website was the first channel available since the foundation of the company. It is also relevant to mention that business clients make a lot more purchases in the offline channel than the individual ones, representing 78.88% of all offline observations.

Graph 3 - Sample by Channel

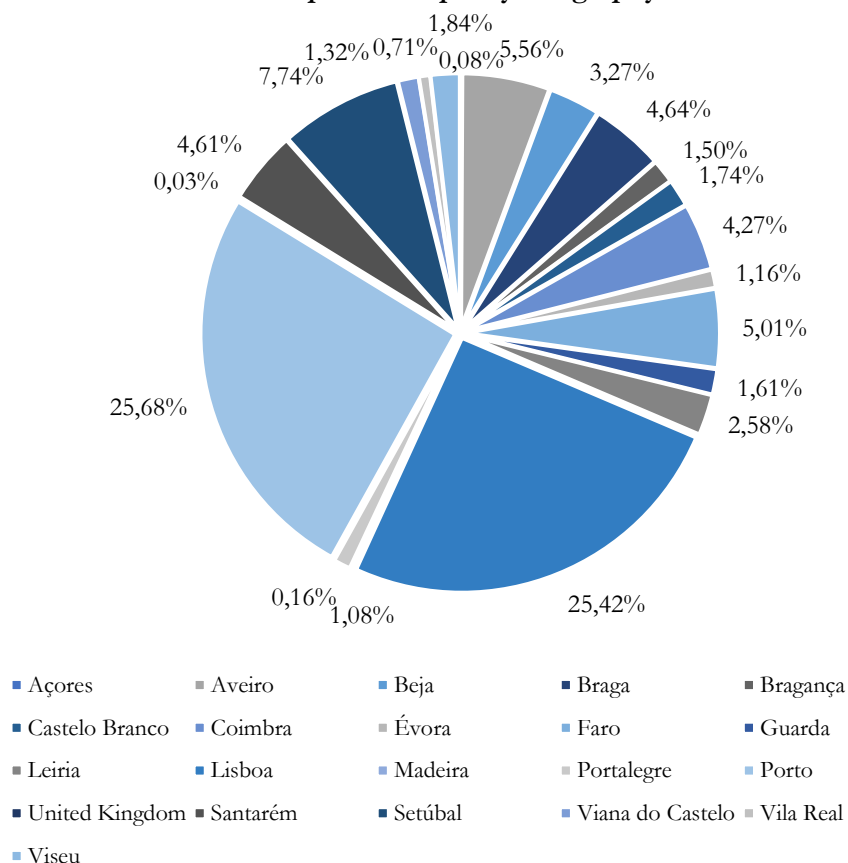


Graph 2 - Observations of Offline Channel by Customer Type

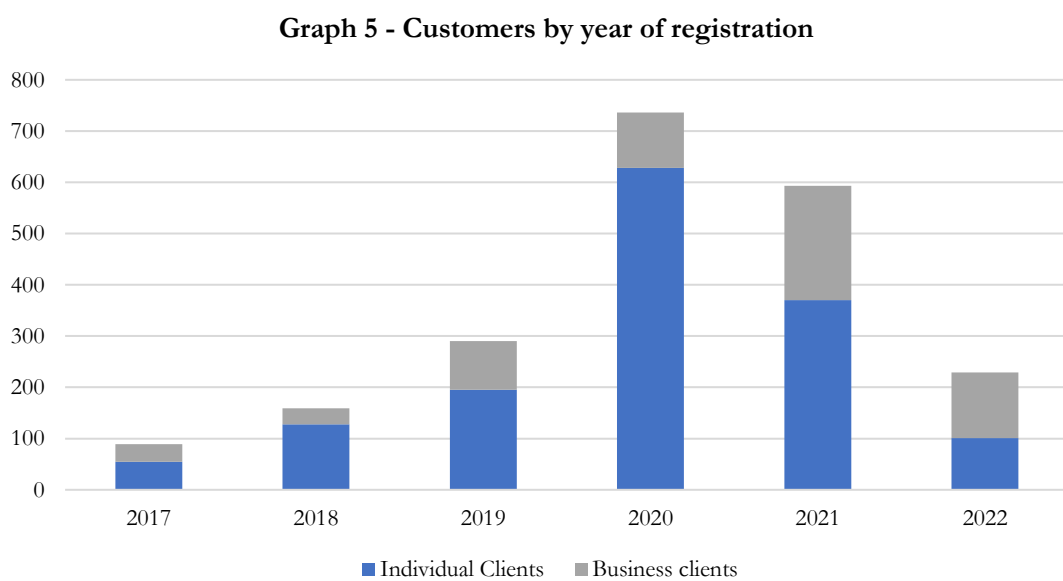


Although the company is headquartered in the district of Porto, many purchases came from all over the country and there is even a little representation of the United Kingdom. Indeed, the majority of purchases were made from Porto, but Lisbon also has a large weight in the company's transactions, since they represent 25.68% and 25.42% of the number of sales, respectively.

Graph 4 - Sample by Geography



As already mentioned, the sample includes observations of 2096 customers. They can be separated into 1477 individual clients and 619 business ones, which include SME and corporate companies. The following graph divides the customers according to the year of their registration on the website of OfficeLink. Thus, 2020 was the year with the greater number of registrations, which might relate to the impact of the pandemic crisis. Furthermore, since 2020, business clients have increased their weight in the total amount of acquired customers each year. Nevertheless, it is important to refer that the information regarding 2022 only includes data from January to April.



4.2. Hypothesis Formulation

As mentioned before, this study aims to understand the customer retention success in OfficeLink. For that reason, customer retention was the dependent variable in the development of the econometric model. Considering the sample's division made in the sample, the study has two different regressions, one for business clients and other for individual ones. The same independent variables were studied for each type of client.

Aspinall et al. (2001) refers the importance of a company defining customer retention in the context of its business and customer behaviour. According to the literature, the focus of retention should concentrate in turning inactive customers in active ones and avoid an active

customer to become an inactive one (Chang & Zhang, 2016). Therefore, the company follows this reasoning when defining the concept of retention:

- Both individual and business clients are considered retained in the company if they are active customers and have made at least 3 purchases.

As noticed, the status of the customer as an active or inactive client is fundamental to understand retention. This study focuses on understanding what influences a customer to become inactive or active during its interaction with the company. To do so, the unit of observation of the study is each purchase made by the customer, so it could be possible to understand what influences switching of status according to the experience with the company. Therefore, the definition of active client was used not as a past behaviour but as a future one, which allowed as to determine if each purchase led to the possible retention of the client or not, based on whether the purchase was followed by another one within the timeframe defined by the company (3 and 6 months for individuals and companies, respectively). Since the definition of active customer varies according to the type of clients, the sample was divided in two subsamples: business clients, which includes corporate and SME ones, and individual clients.

In this sense, the status of the company (ST) was the dependent variable chosen for the model. As mentioned in the previous chapter, a customer is considered an active client by the company if he has purchased in the last six or three months, according to the type of client in question. Considering that the dependent variable is defined by a rule that the individuals might follow or not, the customer's status is considered a qualitative variable. Since previous studies often rely on a binary variable to define customer retention (Cambra-Fierro et al., 2021; Dawes, 2009; Park & Han, 2013), this study also analyses the customer's status as a variable that assumes merely two values:

$$ST_i = \begin{cases} 1 & \text{if the customer } i \text{ remain active} \\ 0 & \text{if the customer } i \text{ becomes inactive} \end{cases}$$

where i represents each client and ST_i represents customer's status after every purchase.

The independent variables (Appendix 3) were chosen according to what most influences customer retention mentioned by the literature in Chapter 2.

Thus, as mentioned before, trust is one of the factors that affect customer retention. According to Jaiswal et al. (2018), this effect is translated in the likelihood of the customer being retained and the customers' purchase amount influences the importance of trust in this occurrence. When analysing the provided data, the customers' purchase amount can be measured by the total amount of money that the customers has spent since its first acquisition until the present purchase. Therefore, the Present Total Amount Spent (PTAS) is the first independent variable of the model with the following hypothesis:

H1: Costumers that spend more in the company are more likely to stay active clients.

During the internship, it was notable that the company actively strives to maintain a continuous policy of discounts on specific products on its website. In this sense, although a customer may have spent a lot of money on a purchase, it is important to assess whether it is linked to the fact that he has taken advantage of discounts and whether this has influenced him to remain active in the company. In this way, the binary variable Discounts in the Purchase (DP) will be evaluated, where 1 represents the existence of discounts on products in that purchase and 0 the opposite. This reasoning gave rise to a new sub-hypothesis:

H1.1.: Customers who enjoyed discounts are more likely to remain active in the company.

The literature also mentions the tenure or relationship length as one of the main factors influencing customer retention (Dawes, 2009; Jaiswal et al., 2018). Since the date of each purchase and the date of registration of all clients was available, the customer time length (CTL) was computed by measuring the number of the days that the customer has been a client of the company until the present purchase. Thus, a new independent variable was created and, with it, the second hypothesis:

H2: The older the customer, the more likely it is to stay an active one.

In the same reasoning, the relationship breadth is mentioned in the literature as another significant factor (Dawes, 2009). To analyse this factor, the number of diversified categories (DC) in each purchase was calculated, originating a third hypothesis:

H3: Clients with a high level of different products' categories in their purchases are more likely to remain active.

In order to analyse the issue of product diversity more specifically in the purchase, the quantity of products (QoP) variable was also created, which indicates how many products the customer acquired in each purchase. For this analysis, a sub-hypothesis was created:

H3.1.: The more products a customer buys, the more likely he is to stay active in the company.

As mentioned before, the second part of the definition of retention was not included in the econometric study. One of the reasons of this was to understand what leads to changes in the status of the client, since to be retained, he must be active in the company according with its definition. But, besides that, retention would only be evaluated from the third purchase on, which would restrict the study even more and conclusions regarding the experience in the first and second purchase could not be analysed. Thus, the number of purchases was included in the study as an independent variable to understand if it would be reflected in the definition of active client or if even with several purchases in the period to be active, he might become inactive as any other client. Therefore, the present number of costumers' purchases (PCNP) represents the number of purchases that the client has gathered until that purchase and the following hypothesis was constructed:

H4: The more purchases a customer makes, the more likely it is to remain an active one.

In addition to the number of purchases, it was important to identify the first purchase of the client with a binary variable. The First Purchase (FP) variable was created, which assumes the value 1 when the customer is making a purchase in the company for the first time and the value 0 in the other cases. With this variable, it will be possible to assess what is the impact of returning to the company against the impact of buying at OfficeLink for the first time. Thus, the following sub-hypothesis was developed:

H4.1.: Customers that are returning to the company are more likely to remain active

The following table sums up all hypotheses of the study.

Table 1 - Hypotheses of the study

Hypotheses

H1.	Costumers that spend more in the company are more likely to stay active clients.
H1.1.	Customers who enjoyed discounts are more likely to remain active in the company.
H2.	The older the customer, the more likely it is to stay an active one.
H3.	Clients with a high level of different products' categories in their purchases are more likely to remain active
H3.1.	The more products a customer buys, the more likely he is to stay active in the company.
H4:	The more purchases a customer makes, the more likely it is to remain an active one.
H4.1.	Customers that are returning to the company are more likely to remain active

4.3. Method of Analysis

In the construction of the regression model, choosing the right method of analysis is fundamental, so the results of the model can be the most accurate possible. In this case, the dependent variable was a binary one, so the classical linear regression model would not be a good choice (Asteriou & Hall, 2016). With a binary variable as dependent variable, the regression would not fit the assumptions of the CLRM (Classical Linear Regression Model). Some of the most common choices are the logit and the probit models.

Contrary to what happens in the probit model, in the logit one it is not necessary that the variables follow a normal distribution (Asteriou & Hall, 2016). To understand which model is the most suitable, the Shapiro-wilk test was computed, in which the null hypothesis represents that the sample follows a normal distribution (Ruppert, 2004). Since there are variables, in both data sub-samples, with the p-value lower than 0.05 (the level of significance chosen), the null hypothesis of the same is rejected (Appendix 4 and 12). Thus, it is possible to state that there are variables that do not follow a normal distribution. For this reason, the logit model was chosen instead of the probit one. In this case, the method used maximum likelihood estimators instead of ordinary least squared (OLS) ones. To do so, STATA was

the statistical software used in the development of the regression and the analysis of the descriptive statistics of the data.

4.4. Development of the model

Considering these seven explanatory variables and the status of the client as the dependent one, the descriptive statistics of the variables used in this study were analysed in tables 2 and 3, each one for each sub-sample of the study (see Appendix 5 and 13 for the Stata results).

Regarding individual clients, the number of inactive clients after a purchase is way higher than the number of active ones, since the mean of the dummy dependent variable ST is 0.20. Also, there is a high number of first purchases in this sub-sample since the mean of FP is closer to 1 than 0, which may be an indicative of this type of client not being very loyal to the company. This conclusion is in agreement with the mean of PCNP variable, since it suggests that most clients purchase a bit more than one time in the company, meaning that they can be very volatile. The mean of CTL is 97.52, which means that, on average, the client sustains a relationship with the company during less than a month. In addition, they often purchase products on the same category, as the mean of CP implies. In the purchases of these clients, there are few ones that take advantage of discounts in the company since the mean is very close to 0 in the dummy variable DP.

Table 2 - Individual Clients: Descriptive Statistics

<i>Variable</i>	<i>Observations</i>	<i>Mean</i>	<i>Standard deviation</i>	<i>Minimum</i>	<i>Maximum</i>
FP	2085	0.71	0.45	0	1
QoP	2085	15.28	26.09	1	507
DP	2085	0.04	0.18	0	1
PTAS	2085	43.28	82.95	0.51	1142.91
PCNP	2085	1.66	1.60	1	16
CP	2085	1.41	0.67	1	4
CTL	2085	97.52	231.31	0	1826
ST	2085	0.20	0.40	0	1

Even though the descriptive statistics of individual clients does not show a very good relationship with the company and the clients, this relation is very different when analysing the sample of purchases by companies. In fact, the mean of the dependent variable is closer

to 1 than to 0, which implies that more of the half of these clients remain active in the company after their purchases. There is evidence that, on average, these clients make purchases with a lot more products than the individual ones, because the mean of QoP is higher in this sub-sample. Also, since the mean of PTAS is higher for business clients, it is possible to affirm that they spent a lot more money in their purchases than individual clients. These clients, on average, have made 7.49 purchases in OfficeLink, which may indicate that they are more loyal to the company than the individual ones. In line with these conclusions is the mean of CTL that shows that, on average, business clients have a customer relationship of 256.30 days, which is around 8 months and half.

Table 3 - Business Clients: Descriptive Statistics

<i>Variable</i>	<i>Observations</i>	<i>Mean</i>	<i>Standard deviation</i>	<i>Minimum</i>	<i>Maximum</i>
FP	1711	0.36	0.48	0	1
QoP	1711	84.62	254.54	1	5700
DP	1711	0.12	0.32	0	1
PTAS	1711	1074.52	3020.39	0.84	24199.19
PCNP	1711	7.49	12.98	1	79
CP	1711	1.48	0.71	1	5
CTL	1711	256.30	343.80	0	1700
ST	1711	0.57	0.50	0	1

In both descriptive statistics, the variables QoP, PTAS and CTL stand out for being the ones with higher range between their minimum and maximum values, but also because of their high standard deviation. In order to be easier to interpret the results associated with them, these variables were transformed in logarithm variables (Appendix 8).

After this analysis, the following models for each sub-sample were created.

$$(4.1.) ST_i = \beta_1 + \beta_2 FP_i + \beta_3 \log QoP_i + \beta_4 DP_i + \beta_5 \log PTAS_i + \beta_6 CP_i + \beta_7 PCNP_i + \beta_8 CTL_i + u_i$$

$$(4.2.) ST_b(2) = \beta_1 + \beta_2 FP_b + \beta_3 \log QoP_b + \beta_4 DP_b + \beta_5 \log PTAS_b + \beta_6 CP_b + \beta_7 PCNP_b + \beta_8 CTL_b + u_b$$

where i represents the individual clients and b the business ones, u_i is the disturbance, $CTAS_i$ is the customer total amount spent, CTL_i is the customer time length, DC_i is the diversified categories in the customer's purchases and NR_i is the number of returns he made.

In addition, some control variables were included in the model. To do so, some dummy variables for identifying the channel used in the purchase and the district where the order was made were constructed (Appendix 6, 7, 14 and 15). Regarding the channel, the offline dummy was used as control since the results can be compared with the case of the online purchases, which represents most of the sample, as it was already mentioned. In the case of districts, the districts with frequency above 75 observations were used as control variables, since the purchases in the other districts have not a large representation in the transactions.

4.5. Discussion of results

4.5.1. Individual Clients

The data set includes 2085 observations. In this model, there are 16 degrees of freedom, as it is noticeable in likelihood ratio chi-square test (Appendix 9). The significance level (alpha) chosen was 0.05. This model is statistically significant, since the p-value is less than 0.05, rejecting the null hypothesis of the model not being statistically significant. Since the pseudo-R-squared is not equivalent to R-squared in OLS regressions, researchers usually do not use it in interpretations of logistic models (Asteriou & Hall, 2016).

The coefficients of the logistics regression implies that the dependent variable is on a logit scale, so the interpretation would rely on the effect the independent variables have on log odds and not the probability of the dependent variable's event to occur. Therefore, the predictors would not be included in the interval between 0 and 1, that is the correct range of probabilities (Asteriou & Hall, 2016). Due to this difficulty of interpretation, the coefficients are transformed into odds ratio, which is often applied to customer retention studies (Karp, 1998). In addition, the average marginal effects for each variable were computed to facilitate the interpretation.

Before moving on to the interpretation of odds ratios, it must be referred that the variables $\log QoP$, $\log PTAS$ and DP are not significant since their p-value is above 0.05, which does not reject the null hypothesis. Therefore, in the specific case of OfficeLink, the quantity of products in the purchase, the present total amount spent of money and if there was a

discount or not in the purchase does not seem to influence the status of the client. This suggests that the nature of past interaction, measured either by amount spent or quantity of products bought, does not increase or decrease the likelihood of retaining an individual client. The number of different categories purchased is significant variable, which suggests that clients with more diverse needs addressed are more likely to return. Regarding *DP*, since most purchases do not have a discount associated, maybe there is not information enough to understand the effect of it.

Since the odds ratio allow to conclude if a variable has positive effects on the odds or not, it is possible to affirm that *FP* and *logCTL* have negative effects on the odds, because their odds ratio is below 1, while *PCNP* and *CP* have positive effects on the odds since their odds ratio are above 1 (Appendix 10).

Table 4 - Individual Clients: Regression Results

<i>Variable</i>	<i>Odds ratio</i>	<i>Average marginal effects</i>	<i>P > z </i>
FP	0.4752	-0.1048	0.000
logQoP	1.0003	0.0000	0.915
DP	0.7807	-0.0349	0.460
logPTAS	1.0020	0.0003	0.105
PCNP	1.2319	0.294	0.002
CP	1.3927	0.0467	0.000
logCTL	0.9991	-0.0001	0.005

As mentioned before, the marginal effects were used to help the interpretation of the results (Appendix 11). The results are presented in the table below. Thus, a client that is purchasing for the first time decreases 10.48 percentage points the probability of becoming active than a client who is returning to the company. This means that clients that already bought at the company before are more likely to return in the next six months, so H4.1. is verified. Then, it is critical that the company incentives these clients to remain active. Along with this conclusion, *PCNP* shows that if there is an additional purchase of the same client in OfficeLink, the probability that he remains active increases by 29.4 percentage points. Therefore, hypothesis H4. is validated. Indeed, the more purchases a customer makes, the more likely he is to stay active. It is possible to conclude that the number of purchases influences customer retention. Regarding *CP*, the results show that if there is a small change

in the number of different categories bought in the same purchase, the probability of a client staying active in the company increases 4.67 percentage points. Hence, a client who seeks different types of products is more likely to remain active in the company, which validates hypothesis H3. This behaviour may rely on saving costs and time in searching for different types of products in different platforms. Finally, evidence shows that a 1% increase in the customer tenure is associated with a decrease of 0.01 percentage points in the probability of a client remaining active, which rejects hypothesis H2. Therefore, it is expected that being an older client in OfficeLink does not translates in retention. However, one should notice that OfficeLink is a recent company with only 5 years of existence. Hence, these results may be influenced by the foundation of the company and its volatile first clients.

4.5.2. Business Clients

Moving on to the second sub-sample of the study, this set includes 1711 observations. In this case, there are 15 degrees of freedom, and the model is also statistically significant, because its p-value is less than the significance level (0.05) (Appendix 16).

Overall, the interpretation of results is very similar to the ones before. The variables that were not significant in the last results are the same as in this model and it is assumed that the reasons behind this insignificance rely on the same justifications, since the data was extracted and measured in the same way.

Table 5 - Business Clients: Regression Results

<i>Variable</i>	<i>Odds ratio</i>	<i>Average marginal effects</i>	<i>P > z </i>
FP	0.2802	-0.2410	0.000
logQoP	1.0000	0.0000	0.953
DP	1.0748	0.0137	0.698
logPTAS	0.9999	-0.0000	0.400
PCNP	1.1457	0.0258	0.000
CP	1.2526	0.0427	0.006
logCTL	0.9985	-0.0003	0.000

Regarding the odds ratio interpretation, *FP* and *logCTL* have negative effects on the odds, while *PCNP* and *CP* have positive effects on it (Appendix 17). Thus, also in this case, the hypothesis H1.1. is accepted since a client that is purchasing for the first time is less likely of

becoming active by 24.10 percentage points than a client who is returning to the company. The average marginal effect of *PCNP* shows that the probability of the client remaining active increases by 2.58 percentage points with an additional purchase, which is in agreement with hypothesis H1. However, this number is much lower than the one in individual clients, revealing that *PCNP* has a much higher impact in individual clients than in business ones. One reason behind this may be that individual clients, on average, make less purchases in the company than the business ones. Furthermore, this probability also increases 4.26 percentage points if there is a small change in the number of different categories bought in the same purchase, which is similar to the impact on individual clients. Finally, there is a decrease of 0.003 in the probability of a client remaining active in the company when facing a 1% increase in the customer tenure, which, as mentioned before, may be due to the company's short lifespan (Appendix 18).

5. CONCLUSIONS

This chapter is divided in two sections: recommendations and final remarks and limitations of the study. Therefore, in the first section, the results of the study are used to make recommendations for future research but also of possible actions that the company can implement in its marketing plan. The second section will focus on the weaknesses of this study and the reasons behind them.

5.1. Recommendations and Final Remarks

This study was developed under the scope of an internship at OfficeLink, an e-commerce company of office and school supplies that also has offline channels that the customer can recur to, such as a store in Porto and the contacts of the commercial department. Even though being a very young company, with only five years of existence, OfficeLink aims to focus on the retention of its customers, since it is a crucial measure to boost companies' profitability (Alkitbi et al., 2020). Therefore, during the internship at the company, a marketing plan was developed according to the past performance of the company and the established goals for 2022. However, the difficulty of understanding client retention in the company became clear, and an econometric study was a solution to produce insights regarding the consumer's behaviour.

One of the objectives of this study was to identify the customers that were more likely to be retained in the company, through what makes them active and inactive customers as defined by the company. By identifying these clients, the company might produce a strategic plan to incentivize the loyalty of the consumers. In addition to business customers, it would be important to do a study on the reasons behind an individual customer who is more assiduous in terms of purchases. This analysis can explore the reasons behind the purchases, through the implementation of a questionnaire to the company's customers and incentives to carry it out.

Furthermore, according to the results, the company should focus on the customers more likely to make more purchases. Since the more diversified the purchase, the more likely it is to remain active, it would be good for the company to promote the idea that it can answer to different types of needs at the same time. In this way, campaigns or promotions should

probably be more focused on covering many needs and cross-selling actions than focusing on specific items.

Since one of the internship's goals was the improvement of customer experience and journey, some recommendations were developed by following the main topics addressed in the literature. Regarding service satisfaction, during the internship, the difference between the service provided to business clients and individual clients became clear. First, business clients have the benefit of lower prices, which seems to be an efficient method to incentive their purchases. Along with it, business clients contact more frequently with the commercial department and, therefore, with the company's employees. This phenomenon does not happen so much with individual customers since most purchases are made over the internet without contacting people in the company. Hence, trust between the customer and the company becomes much more difficult to achieve.

Business clients seem to be more satisfied than individual ones since they repurchase more. Since purchases from individual clients could be a greater way of obtaining high margins, the service satisfaction of these clients should become a priority of the company. Current retention strategies are associated with discounts in products or newsletter or the OfficeLink Loyal Customer program. During the internship, it was noticed that the loyalty program has not influence clients to stay active in the company. Currently, they must spend 100€ in the company to obtain 10% in purchases higher than 50€, however, on average, an individual client spends 23,47€ on a purchase at OfficeLink. Thus, one might suggest that the program offers some advantages in terms of service and easiness in the purchase, rather than monetary benefits.

Regarding customer response, the company does not have much information. The consumer behaviour is only addressed in the registration of purchases and their past in transactions with the company. Therefore, OfficeLink should provide means to gather consumers' opinions regarding the company's offers and services, something that ultimately might improve service satisfaction as well. To do so, technology plays a big role in this achievement. Through the company's communication channels or its e-commerce platform, the consumers should be motivated to show what they value the most at OfficeLink, but also what in their opinion could be improved.

Furthermore, technology allows the company to have access to what products the consumers are more interested in now, through a market analysis, but also if some other information is requested during the registration in the company's website. The gender and age of the client is something that affects their purchases in this sector, thus, this information could be provided by the consumers in a voluntary way. This would allow a greater segmentation of the customers. Also, by requesting this information, the company could develop a more personalized service in terms of interests or by pointing out relevant dates, such as the anniversary of the clients at the company or their birthday.

In terms of co-creation, it is a very recent topic in literature and very influenced by social media since it allows consumers to create content in their platforms. Although interactions of OfficeLink's social media are very low, some partnership would be useful to gather younger clients. Currently, most followers of the company's social media are around 40 and 50 years, while many of school suppliers are targeted for teenagers that already have access to technology. Through a partnership, the company could reach this target audience.

Thus, a greater combination of all the channels' potential should be made, in order for the company to gain more visibility and therefore, increase consumers' purchases.

5.2. Limitations of the study

Regarding the weaknesses of the study, the customer experience was very limited to the aspects of the purchases that are registered during the transactions and did not consider many aspects on the customer journey, nor every touchpoint that he could have had access to. Therefore, there is not a compartmental analysis of the company.

In addition, the study does not consider the purchases in terms of time. The clients' purchases could be analysed according to the year and month which could give more insights about the choices of the products, or the money spent. Also, there is no analysis to possible seasonal effects that might influence the purchases.

According to Dawes (2009), the breadth of a purchase in terms of products' categories affect more short-tenure customers than long-tenure ones. However, the study does not take this in consideration when measuring the CP variable.

Furthermore, the study does not include the market context and how the company is facing its competitors. Therefore, there are no conclusions regarding switching costs from moving to another company.

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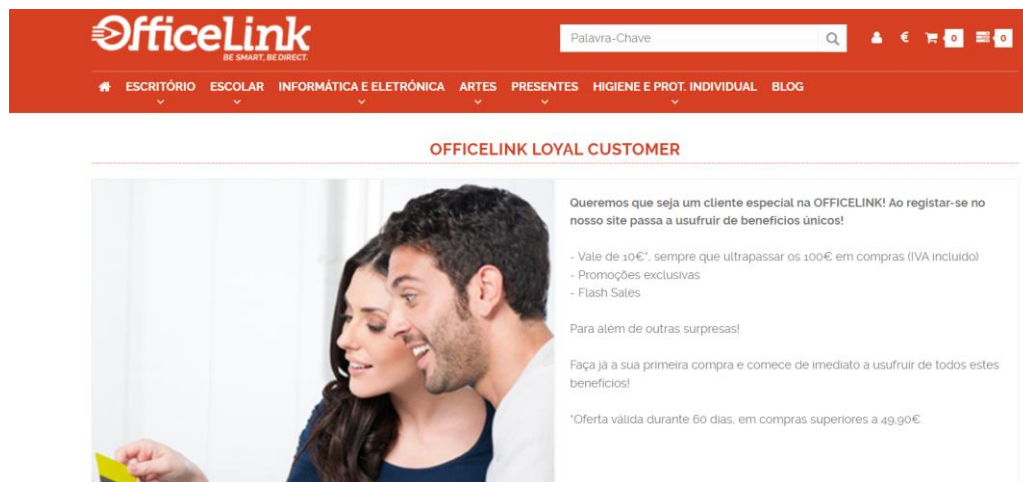
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APPENDIX

Appendix 1 – OfficeLink Loyal Customer



The screenshot shows the OfficeLink website header with the logo and navigation menu. Below the header, there is a section titled "OFFICELINK LOYAL CUSTOMER". On the left, there is a photo of a smiling couple. On the right, there is text in Portuguese explaining the benefits of being a loyal customer, including a 10€ voucher and exclusive promotions.

OFFICELINK LOYAL CUSTOMER

Queremos que seja um cliente especial na OFFICELINK! Ao registar-se no nosso site passa a usufruir de benefícios únicos!

- Vale de 10€, sempre que ultrapassar os 100€ em compras (IVA incluído)
- Promoções exclusivas
- Flash Sales

Para além de outras surpresas!

Faça já a sua primeira compra e comece de imediato a usufruir de todos estes benefícios!

*Oferta válida durante 60 dias, em compras superiores a 49,90€.

Appendix 2 – Report of Marketing Strategies for 2022



The slide features a red background with a large, stylized white circle. Inside the circle is a photo of a brown cardboard box with a white tag attached. The tag has the OfficeLink logo and the tagline "BE SMART. BE DIRECT." Below the photo, the text "PLANO 2022" is displayed. At the bottom, there is a section titled "Estrutura" (Structure) with five icons representing different stages of the marketing process: Diagnóstico (green circle with a line graph), Objetivos (orange circle with a target), Estratégias (red circle with a handshake), Ações (teal circle with a tag), and KPIs (blue circle with a bar chart).

OfficeLink
BE SMART. BE DIRECT.

PLANO 2022

Estrutura

- Diagnóstico
- Objetivos
- Estratégias
- Ações
- KPIs

Appendix 3 – Independent Variable

Independent variables

CP	Number of Categories Purchased
CTL	Customer Time Length
DP	Discount in the Purchase (binary)
FP	First Purchase (binary)
PCNP	Present Customer Number of Purchases
PTAS	Present Total Amount Spent
QoT	Quantity of Products

Appendix 4 - Individual Clients: Shapiro-wilk test

```
. swilk FP QoP DP PTAS PCNP CP CTL ST Cha1 Cha2 Dis1 Dis2 Dis3 Dis4 Dis5 Dis6 Dis7 Dis8 Dis9 Dis10 Dis11 Dis12 Dis13 D
> is14 Dis15 Dis16 Dis17 Dis18 Dis19 Dis20 Dis21 Dis22
```

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
FP	2,085	0.99914	1.065	0.161	0.43612
QoP	2,085	0.48931	629.040	16.417	0.00000
DP	2,085	0.97296	33.303	8.931	0.00000
PTAS	2,085	0.39932	739.883	16.831	0.00000
PCNP	2,085	0.73064	331.786	14.788	0.00000
CP	2,085	0.97932	25.475	8.248	0.00000
CTL	2,085	0.54434	561.258	16.127	0.00000
ST	2,085	0.99675	4.003	3.534	0.00020
Cha1	2,085	0.99067	11.486	6.219	0.00000
Cha2	2,085	0.99203	9.812	5.818	0.00000
Dis1	2,085	0.98503	18.439	7.425	0.00000
Dis2	2,085	0.50042	615.357	16.361	0.00000
Dis3	2,085	0.96332	45.176	9.708	0.00000
Dis4	2,085	0.97822	26.832	8.381	0.00000
Dis5	2,085	0.95059	60.855	10.467	0.00000
Dis6	2,085	0.95503	55.390	10.227	0.00000
Dis7	2,085	0.97964	25.080	8.209	0.00000
Dis8	2,085	0.98271	21.301	7.793	0.00000
Dis9	2,085	0.94034	73.483	10.947	0.00000
Dis10	2,085	0.60313	488.834	15.775	0.00000
Dis11	2,085	0.50042	615.357	16.361	0.00000
Dis12	2,085	0.50042	615.357	16.361	0.00000
Dis13	2,085	0.97004	36.904	9.193	0.00000
Dis14	2,085	0.99773	2.790	2.614	0.00447
Dis15	2,085	0.93660	78.098	11.102	0.00000
Dis16	2,085	0.99777	2.742	2.570	0.00508
Dis17	2,085	0.98166	22.589	7.942	0.00000
Dis18	2,085	0.98940	13.058	6.546	0.00000
Dis19	2,085	0.94034	73.483	10.947	0.00000
Dis20	2,085	0.87317	156.217	12.869	0.00000
Dis21	2,085	0.95697	53.003	10.115	0.00000
Dis22	2,085	0.94935	62.391	10.530	0.00000

Note: The normal approximation to the sampling distribution of W' is valid for 4<=n<=2000.

Appendix 5 – Individual clients: Descriptive statistics

```
. sum FP QoP DP PTAS PCNP CP CTM Channel District ST
```

Variable	Obs	Mean	Std. dev.	Min	Max
FP	2,085	.7103118	.4537265	0	1
QoP	2,085	15.28058	26.089	1	507
DP	2,085	.0345324	.1826359	0	1
PTAS	2,085	43.27812	82.9526	.51	1142.91
PCNP	2,085	1.66235	1.602885	1	16
CP	2,085	1.410072	.6660064	1	4
CTM	2,085	97.52374	231.3102	0	1826
Channel	0				
District	0				
ST	2,085	.1956835	.3968211	0	1

Appendix 6 – Individual clients: Creation of dummy variables from Channel

```
. tabulate Channel, generate(Cha)
```

Channel	Freq.	Percent	Cum.
Offline	193	9.26	9.26
Online	1,892	90.74	100.00
Total	2,085	100.00	

```
. describe Cha1 Cha2
```

Variable name	Storage type	Display format	Value label	Variable label
Cha1	byte	%8.0g		Channel==Offline
Cha2	byte	%8.0g		Channel==Online

Appendix 7 – Individual clients: Creation of dummy variables from Customer District

```
. tabulate District, generate(Dis)
```

District	Freq.	Percent	Cum.
Aveiro	127	6.09	6.09
Açores	1	0.05	6.14
Beja	53	2.54	8.68
Braga	89	4.27	12.95
Bragança	39	1.87	14.82
Castelo Branco	43	2.06	16.88
Coimbra	95	4.56	21.44
Faro	111	5.32	26.76
Guarda	32	1.53	28.30
Ilha da Madeira	3	0.14	28.44
Ilha de Porto Santo	1	0.05	28.49
Ilha de Santa Maria	1	0.05	28.54
Leiria	65	3.12	31.65
Lisboa	492	23.60	55.25
Portalegre	30	1.44	56.69
Porto	496	23.79	80.48
Santarém	105	5.04	85.52
Setúbal	173	8.30	93.81
Viana do Castelo	32	1.53	95.35
Vila Real	14	0.67	96.02
Viseu	45	2.16	98.18
Évora	38	1.82	100.00
Total	2,085	100.00	

```
. describe Dis1 Dis2 Dis3 Dis4 Dis5 Dis6 Dis7 Dis8 Dis9 Dis10 Dis11 Dis12 Dis13 Dis14 Dis15 Dis16 Dis17 Dis18 Dis19 Di
> s20 Dis21 Dis22
```

Variable name	Storage type	Display format	Value label	Variable label
Dis1	byte	%8.0g		District==Aveiro
Dis2	byte	%8.0g		District==Açores
Dis3	byte	%8.0g		District==Beja
Dis4	byte	%8.0g		District==Braga
Dis5	byte	%8.0g		District==Bragança
Dis6	byte	%8.0g		District==Castelo Branco
Dis7	byte	%8.0g		District==Coimbra
Dis8	byte	%8.0g		District==Faro
Dis9	byte	%8.0g		District==Guarda
Dis10	byte	%8.0g		District==Ilha da Madeira
Dis11	byte	%8.0g		District==Ilha de Porto Santo
Dis12	byte	%8.0g		District==Ilha de Santa Maria
Dis13	byte	%8.0g		District==Leiria
Dis14	byte	%8.0g		District==Lisboa
Dis15	byte	%8.0g		District==Portalegre
Dis16	byte	%8.0g		District==Porto
Dis17	byte	%8.0g		District==Santarém
Dis18	byte	%8.0g		District==Setúbal
Dis19	byte	%8.0g		District==Viana do Castelo
Dis20	byte	%8.0g		District==Vila Real
Dis21	byte	%8.0g		District==Viseu
Dis22	byte	%8.0g		District==Évora

Appendix 8 – Creation of variables with log for QoP, PTAS e CTL

```
. generate logQoP = ( QoP + 1 )
. generate logPTAS = ( PTAS + 1 )
. generate logCTL = ( CTL + 1 )
```

Appendix 9 – Individual clients: Logit regression

```
. logit ST FP QoP DP PTAS PCNP CP CTL Cha1 Dis1 Dis4 Dis7 Dis8 Dis14 Dis16 Dis17 Dis18
```

```
Iteration 0: log likelihood = -1030.7403
Iteration 1: log likelihood = -939.7872
Iteration 2: log likelihood = -934.91778
Iteration 3: log likelihood = -934.85942
Iteration 4: log likelihood = -934.85938
```

```
Logistic regression                                Number of obs = 2,085
                                                    LR chi2(16) = 191.76
                                                    Prob > chi2 = 0.0000
Log likelihood = -934.85938                        Pseudo R2 = 0.0930
```

ST	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
FP	-.7441333	.1605636	-4.63	0.000	-1.058832	-.4294344
QoP	.0002664	.0024892	0.11	0.915	-.0046123	.0051451
DP	-.2475698	.3352853	-0.74	0.460	-.9047169	.4095774
PTAS	.0020771	.0012814	1.62	0.105	-.0004344	.0045886
PCNP	.2085534	.0679612	3.07	0.002	.0753518	.341755
CP	.3312498	.0841464	3.94	0.000	.1663259	.4961737
CTL	-.0009301	.0003286	-2.83	0.005	-.0015742	-.000286
Cha1	.3682399	.2052319	1.79	0.073	-.0340072	.770487
Dis1	-.0110711	.2737939	-0.04	0.968	-.5476974	.5255551
Dis4	-.8359148	.3824389	-2.19	0.029	-1.585481	-.0863483
Dis7	.0036794	.298219	0.01	0.990	-.5808191	.5881778
Dis8	-.4402866	.3115687	-1.41	0.158	-1.05095	.1703768
Dis14	-.3169275	.1821193	-1.74	0.082	-.6738747	.0400198
Dis16	.1099153	.1720994	0.64	0.523	-.2273932	.4472239
Dis17	-.054733	.2834827	-0.19	0.847	-.6103489	.5008828
Dis18	-.8141568	.2900104	-2.81	0.005	-1.382567	-.2457469
_cons	-1.68652	.2496945	-6.75	0.000	-2.175912	-1.197128

Appendix 10 – Individual clients: Logit regression with odds ratio

```
. logit ST FP logQoP DP logPTAS PCNP CP logCTL Cha1 Dis1 Dis4 Dis7 Dis8 Dis14 Dis16 Dis17 Dis18, or
```

```
Iteration 0: log likelihood = -1030.7403
Iteration 1: log likelihood = -939.7872
Iteration 2: log likelihood = -934.91778
Iteration 3: log likelihood = -934.85942
Iteration 4: log likelihood = -934.85938
```

```
Logistic regression                                Number of obs = 2,085
                                                    LR chi2(16) = 191.76
                                                    Prob > chi2 = 0.0000
Log likelihood = -934.85938                        Pseudo R2 = 0.0930
```

	ST	Odds ratio	Std. err.	z	P> z	[95% conf. interval]	
FP		.475146	.0762911	-4.63	0.000	.3468607	.6508771
logQoP		1.000266	.0024898	0.11	0.915	.9953984	1.005158
DP		.7806957	.2617558	-0.74	0.460	.4046564	1.506181
logPTAS		1.002079	.0012841	1.62	0.105	.9995657	1.004599
PCNP		1.231895	.0837211	3.07	0.002	1.078263	1.407415
CP		1.392708	.1171913	3.94	0.000	1.180958	1.642425
logCTL		.9990703	.0003283	-2.83	0.005	.998427	.9997141
Cha1		1.445189	.2965988	1.79	0.073	.9665645	2.160818
Dis1		.9889899	.2707794	-0.04	0.968	.5782799	1.691398
Dis4		.4334778	.1657788	-2.19	0.029	.2048492	.9172747
Dis7		1.003686	.2993182	0.01	0.990	.55944	1.800704
Dis8		.6438519	.2006041	-1.41	0.158	.3496055	1.185752
Dis14		.7283836	.1326527	-1.74	0.082	.5097297	1.040831
Dis16		1.116184	.1920945	0.64	0.523	.7966075	1.563964
Dis17		.9467378	.2683838	-0.19	0.847	.5431613	1.650177
Dis18		.4430127	.1284783	-2.81	0.005	.2509336	.7821202
_cons		.1849013	.0461742	-6.76	0.000	.1133378	.301651

Note: _cons estimates baseline odds.

Appendix 11 – Individual clients: Average marginal effects

```
. margins, dydx(*)
```

Average marginal effects

Number of obs = 2,085

Model VCE: OIM

Expression: Pr(ST), predict()

dy/dx wrt: FP logQoP DP logPTAS PCNP CP logCTL Cha1 Dis1 Dis4 Dis7 Dis8 Dis14 Dis16 Dis17 Dis18

	Delta-method					
	dy/dx	std. err.	z	P> z	[95% conf. interval]	
FP	-.1048783	.0224182	-4.68	0.000	-.1488172	-.0609394
logQoP	.0000375	.0003508	0.11	0.915	-.00065	.0007251
DP	-.0348925	.0472419	-0.74	0.460	-.1274849	.0576999
logPTAS	.0002927	.0001803	1.62	0.104	-.0000606	.0006461
PCNP	.0293935	.0094962	3.10	0.002	.0107813	.0480058
CP	.0466864	.0117651	3.97	0.000	.0236272	.0697456
logCTL	-.0001311	.0000461	-2.85	0.004	-.0002214	-.0000408
Cha1	.0518998	.0288671	1.80	0.072	-.0046786	.1084782
Dis1	-.0015604	.0385886	-0.04	0.968	-.0771927	.074072
Dis4	-.117814	.0538202	-2.19	0.029	-.2232997	-.0123283
Dis7	.0005186	.0420311	0.01	0.990	-.0818608	.0828979
Dis8	-.0620541	.0438783	-1.41	0.157	-.1480539	.0239457
Dis14	-.0446678	.0256362	-1.74	0.081	-.0949138	.0055782
Dis16	.0154915	.0242493	0.64	0.523	-.0320362	.0630192
Dis17	-.0077141	.0399537	-0.19	0.847	-.0860219	.0705937
Dis18	-.1147474	.0407783	-2.81	0.005	-.1946713	-.0348235

Appendix 12 - Business Clients: Shapiro-wilk test

```
. swilk FP QoP DP PTAS PCNP CP CTL ST Cha1 Cha2 Dis1 Dis2 Dis3 Dis4 Dis5 Dis6 Dis7 Dis8 Dis9 Dis10 Dis11 Dis12 Dis13 D
> is14 Dis15 Dis16 Dis17 Dis18 Dis19 Dis20 Dis21 Dis22 Dis23
```

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
FP	1,711	0.99921	0.818	-0.509	0.69456
QoP	1,711	0.26146	759.912	16.776	0.00000
DP	1,711	0.99151	8.739	5.482	0.00000
PTAS	1,711	0.35593	662.713	16.430	0.00000
PCNP	1,711	0.61826	392.783	15.107	0.00000
CP	1,711	0.97399	26.763	8.313	0.00000
CTL	1,711	0.80777	197.798	13.372	0.00000
ST	1,711	0.99992	0.079	-6.420	1.00000
Cha1	1,711	0.99968	0.334	-2.771	0.99721
Cha2	1,711	0.99989	0.111	-5.570	1.00000
Dis1	1,711	0.97716	23.505	7.985	0.00000
Dis2	1,711	0.50051	513.945	15.787	0.00000
Dis3	1,711	0.97282	27.966	8.424	0.00000
Dis4	1,711	0.97798	22.657	7.892	0.00000
Dis5	1,711	0.89852	104.418	11.756	0.00000
Dis6	1,711	0.91885	83.497	11.191	0.00000
Dis7	1,711	0.97117	29.669	8.574	0.00000
Dis8	1,711	0.97565	25.055	8.146	0.00000
Dis9	1,711	0.93463	67.259	10.644	0.00000
Dis10	1,711	0.50051	513.945	15.787	0.00000
Dis11	1,711	0.94217	59.507	10.334	0.00000
Dis12	1,711	0.99810	1.954	1.695	0.04508
Dis13	1,711	0.50051	513.945	15.787	0.00000
Dis14	1,711	0.50104	513.401	15.784	0.00000
Dis15	1,711	0.84388	160.641	12.846	0.00000
Dis16	1,711	0.99814	1.911	1.638	0.05066
Dis17	1,711	0.50051	513.945	15.787	0.00000
Dis18	1,711	0.97242	28.374	8.461	0.00000
Dis19	1,711	0.98457	15.876	6.992	0.00000
Dis20	1,711	0.89852	104.418	11.756	0.00000

Appendix 13 – Business clients: Descriptive statistics

```
. sum FP QoP DP PTAS PCNP CP CTL Channel District ST
```

Variable	Obs	Mean	Std. dev.	Min	Max
FP	1,711	.3588545	.4798046	0	1
QoP	1,711	84.62396	254.5361	1	5700
DP	1,711	.1168907	.3213839	0	1
PTAS	1,711	1074.523	3020.394	.84	24199.19
PCNP	1,711	7.48685	12.9759	1	79
CP	1,711	1.475745	.7078273	1	5
CTL	1,711	256.2981	343.7969	0	1700
Channel	0				
District	0				
ST	1,711	.565751	.4958029	0	1

Appendix 14 – Business clients: Creation of dummy variables from Channel

```
. tabulate Channel, generate(Cha)
```

Channel	Freq.	Percent	Cum.
Offline	721	42.14	42.14
Online	990	57.86	100.00
Total	1,711	100.00	

```
. describe Cha1 Cha2
```

Variable name	Storage type	Display format	Value label	Variable label
Cha1	byte	%8.0g		Channel==Offline
Cha2	byte	%8.0g		Channel==Online

Appendix 15 – Business clients: Creation of dummy variables from Customer District

```
. tabulate District, generate(Dis)
```

District	Freq.	Percent	Cum.
Aveiro	84	4.91	4.91
Açores	1	0.06	4.97
Beja	71	4.15	9.12
Braga	87	5.08	14.20
Bragança	18	1.05	15.25
Castelo Branco	23	1.34	16.60
Coimbra	67	3.92	20.51
Faro	79	4.62	25.13
Guarda	29	1.69	26.83
Ilha da Madeira	1	0.06	26.88
Leiria	33	1.93	28.81
Lisboa	473	27.64	56.46
Madeira	1	0.06	56.52
Portalegre	11	0.64	57.16
Porto	479	28.00	85.15
Reino Unido	1	0.06	85.21
Santarém	70	4.09	89.30
Setúbal	121	7.07	96.38
Viana do Castelo	18	1.05	97.43
Vila Real	13	0.76	98.19
Viseu	25	1.46	99.65
Évora	6	0.35	100.00
Total	1,711	100.00	

```
. describe Dis1 Dis2 Dis3 Dis4 Dis5 Dis6 Dis7 Dis8 Dis9 Dis10 Dis11 Dis12 Dis13 Dis14 Dis15 Dis16 Dis17 Dis18 Dis19 Dis20 Dis21 Dis22
```

Variable name	Storage type	Display format	Value label	Variable label
Dis1	byte	%8.0g		District==Aveiro
Dis2	byte	%8.0g		District==Açores
Dis3	byte	%8.0g		District==Beja
Dis4	byte	%8.0g		District==Braga
Dis5	byte	%8.0g		District==Bragança
Dis6	byte	%8.0g		District==Castelo Branco
Dis7	byte	%8.0g		District==Coimbra
Dis8	byte	%8.0g		District==Faro
Dis9	byte	%8.0g		District==Guarda
Dis10	byte	%8.0g		District==Ilha da Madeira
Dis11	byte	%8.0g		District==Leiria
Dis12	byte	%8.0g		District==Lisboa
Dis13	byte	%8.0g		District==Madeira
Dis14	byte	%8.0g		District==Portalegre
Dis15	byte	%8.0g		District==Porto
Dis16	byte	%8.0g		District==Reino Unido
Dis17	byte	%8.0g		District==Santarém
Dis18	byte	%8.0g		District==Setúbal
Dis19	byte	%8.0g		District==Viana do Castelo
Dis20	byte	%8.0g		District==Vila Real
Dis21	byte	%8.0g		District==Viseu
Dis22	byte	%8.0g		District==Évora

Appendix 16 – Business clients: Logit regression

Logistic regression

Number of obs = **1,711**

LR chi2(15) = **444.28**

Prob > chi2 = **0.0000**

Pseudo R2 = **0.1897**

Log likelihood = **-948.99816**

ST	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
FP	-1.272252	.139359	-9.13	0.000	-1.545391	-.9991138
logQoP	.0000133	.0002274	0.06	0.953	-.0004324	.0004589
DP	.0721263	.1857865	0.39	0.698	-.2920085	.4362612
logPTAS	-.0000888	.0001054	-0.84	0.400	-.0002955	.0001178
PCNP	.1360959	.0236613	5.75	0.000	.0897206	.1824711
CP	.2252304	.0819199	2.75	0.006	.0646703	.3857905
logCTL	-.0014535	.0002546	-5.71	0.000	-.0019525	-.0009545
Cha1	.5050557	.1353068	3.73	0.000	.2398592	.7702522
Dis1	.029485	.2697922	0.11	0.913	-.499298	.558268
Dis4	.0410717	.2704796	0.15	0.879	-.4890586	.571202
Dis7	.2686254	.3204259	0.84	0.402	-.3593979	.8966486
Dis8	.2853495	.2803335	1.02	0.309	-.264094	.834793
Dis12	-.1577402	.1686517	-0.94	0.350	-.4882914	.172811
Dis15	.1481846	.1639451	0.90	0.366	-.1731419	.4695111
Dis18	.1689443	.2338202	0.72	0.470	-.2893349	.6272235
_cons	-.1467578	.202879	-0.72	0.469	-.5443934	.2508778

Appendix 17 – Business clients: Logit regression with odds ratio

```
. logit ST FP logQoP DP logPTAS PCNP CP logCTL Cha1 Dis1 Dis4 Dis7 Dis8 Dis12 Dis15 Dis18, or
```

Iteration 0: log likelihood = **-1171.1379**
Iteration 1: log likelihood = **-967.63274**
Iteration 2: log likelihood = **-949.79959**
Iteration 3: log likelihood = **-949.00545**
Iteration 4: log likelihood = **-948.99816**
Iteration 5: log likelihood = **-948.99816**

Logistic regression

Number of obs = **1,711**

LR chi2(15) = **444.28**

Prob > chi2 = **0.0000**

Pseudo R2 = **0.1897**

Log likelihood = **-948.99816**

ST	Odds ratio	Std. err.	z	P> z	[95% conf. interval]	
FP	.2801998	.0390484	-9.13	0.000	.2132285	.3682056
logQoP	1.000013	.0002274	0.06	0.953	.9995677	1.000459
DP	1.074791	.1996817	0.39	0.698	.7467622	1.546913
logPTAS	.9999112	.0001054	-0.84	0.400	.9997046	1.000118
PCNP	1.145792	.0271109	5.75	0.000	1.093869	1.200179
CP	1.252611	.1026138	2.75	0.006	1.066807	1.470776
logCTL	.9985475	.0002542	-5.71	0.000	.9980494	.9990459
Cha1	1.657078	.2242139	3.73	0.000	1.27107	2.160311
Dis1	1.029924	.2778654	0.11	0.913	.6069566	1.747643
Dis4	1.041927	.2818199	0.15	0.879	.6132034	1.770394
Dis7	1.308165	.41917	0.84	0.402	.6980965	2.451374
Dis8	1.330227	.3729071	1.02	0.309	.7679014	2.304337
Dis12	.8540716	.1440406	-0.94	0.350	.613674	1.188641
Dis15	1.159727	.1901316	0.90	0.366	.8410183	1.599212
Dis18	1.184054	.2768558	0.72	0.470	.7487614	1.872405
_cons	.8635031	.1751867	-0.72	0.469	.5801936	1.285153

Note: **_cons** estimates baseline odds.

Appendix 18 – Business clients: Average marginal effects

. margins, dydx(*)

Average marginal effects

Number of obs = 1,711

Model VCE: OIM

Expression: Pr(ST), predict()

dy/dx wrt: FP logQoP DP logPTAS PCNP CP logCTL Cha1 Dis1 Dis4 Dis7 Dis8 Dis12 Dis15 Dis18

	Delta-method				[95% conf. interval]	
	dy/dx	std. err.	z	P> z		
FP	-.2409548	.0234737	-10.26	0.000	-.2869624	-.1949473
logQoP	2.51e-06	.0000431	0.06	0.953	-.0000819	.0000869
DP	.0136602	.0351801	0.39	0.698	-.0552916	.082612
logPTAS	-.0000168	.0000199	-0.84	0.399	-.0000559	.0000223
PCNP	.0257755	.0043472	5.93	0.000	.0172552	.0342958
CP	.0426569	.015385	2.77	0.006	.012503	.0728109
logCTL	-.0002753	.0000467	-5.90	0.000	-.0003667	-.0001838
Cha1	.0956537	.025234	3.79	0.000	.0461959	.1451115
Dis1	.0055842	.0510959	0.11	0.913	-.0945619	.1057304
Dis4	.0077787	.051226	0.15	0.879	-.0926225	.1081798
Dis7	.0508756	.0606512	0.84	0.402	-.0679985	.1697497
Dis8	.054043	.0530296	1.02	0.308	-.049893	.157979
Dis12	-.0298748	.0319042	-0.94	0.349	-.0924058	.0326562
Dis15	.028065	.0310242	0.90	0.366	-.0327413	.0888713
Dis18	.0319968	.0442591	0.72	0.470	-.0547495	.118743

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