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THE IMPORTANCE OF CUSTOMER
RETENTION AND CUSTOMER
ATTRITION IN E-COMMERCE:
The case of Dermoshop Oy

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ABSTRACT

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The research problem regards companies' challenges in maintaining long-term relationships with potential customers in the era of increased digitalization. The study objectives are to determine the importance of customer retention and customer churn, providing an understanding of customer purchase behaviour to assist the firm in implementing sufficient strategies and increasing profitability.

The literature review presents the concept of customer relationship management, customer retention, customer attrition with the calculation, while determinants affecting retention and attrition terms are introduced and explained. The study methodology is the Quantitative method, and the data collection method is to gather and analyze quantitative data extracted from the BI system of Dermoshop Oy.

The study outcome revealed that the higher the customer retention rate, the greater the company's value, while minor increase in customer attrition can negatively impact the firm's revenue. By perceiving the business insights behind outcome figures, e-commerce enterprises can get more advantages. Companies can identify the exclusive milestones when existing customers and new customers are acquired the most, with minimal customer loss, to gain firm profitability and enhance the business performance.

Keywords Customer relationship management, customer retention, customer attrition, e-commerce

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APPENDIX 1. The first file includes customer data from 1985 to 31.12.2020.

APPENDIX 2. The second file includes customer sales data in defined period, the table below displays the customer sales data from 1.7.2018 to 31.12.2018.

APPENDIX 3. The second file includes customer sales data in defined period, the table below displays the customer sales data from 1.7.2018 to 31.12.2018.

1 INTRODUCTION

In this chapter, the background of research will be presented. It contains the theory related to E-commerce, customer relationship management, the significance of customer retention, and customer attrition. Then this is followed by the research objectives and relevant questions to highlight the comprehensive study purpose. After that, an introduction of a research problem will be discussed, and finally illustrating the thesis structure.

1.1 Background

After having become familiar with social media integration, people are adapting to a superior digital technology era with the e-commerce evolution, which expands from its traditional commerce. According to Enache (2018), a new integrated type of economy could be established under the age of e-commerce, be a tremendous potential, and adjust the method of operating business. As there is a transformation in the way of managing the business when implementing e-commerce, cash payment could be replaced by an online payment or mobile payment, electronic invoice instead of the physical invoice (Enache 2018; Lant 2017; Builderfly 2020). To be more specific, electronic commerce would supply various opportunities to improve separated online activities, promote customer relations, establish new services or products, and concentrate more on customer service performance by delivering niche markets (Hufford 2019). To be more precise, the transition from traditional commerce to e-commerce is evaluated to develop expeditiously with customer acknowledgment (Saeeda 2018).

To achieve success in e-commerce, a suggestion for firms considering the importance of customer relationship management could be one of the competitive solutions. A possible explanation is that it supports businesses in identifying the customer value and capitalizing on improving customer relationships, ensuring to serve the best product with high customer satisfaction with a customer-oriented philosophy (SuperOffice 2021). Having the capability to transform from product base to customer base provides the firm with an opportunity to attain high customer satisfaction and loyalty, managing the challenges from the e-commerce development. Along with the accelerated development in e-commerce, businesses would be challenged with customer loyalty and customer

retention when clients begin to contribute less value through each purchase, less loyal, and less service-oriented with the products (Kumar & Petersen 2012). Furthermore, applying customer relationship management could help businesses explore customer insights, understanding internal and external factors influencing customer attrition and their commitment, and be capable of maintaining a long-term relationship with potential customers. Additionally, Chen and Popovich (2003) stated that understanding the importance of customer relationship management assists a company in suffering from the fragmented market and achieve long-term profitability.

Many studies noted that when a company applies relationship marketing management to their internal operation, maintaining an existing customer to keep purchasing products might be prior to allocating more cost to acquire new customers (Hansemark & Albinsson 2004). There are various possible explanations for this priority, such as the cost used for acquiring new buyers would be more expensive, from five to 25 times, than retaining old customers, according to Gallo (2014). Several firms exclusively centralize new customer acquisition by investing time and resources into an advertisement to attract new clients although it is more costly than allocating capital to remain existing customers. Some studies found that it could not be a reasonable method to improve business performance by only concentrating on magnetizing new customers without considering the impact of customer retention and customer churn (Bird 2021; Bernazzani 2021). Because of these reasons, customer retention and customer attrition proportion should be monitored and evaluated periodically by the firms, especially with an e-commerce business. The purpose is to assess the success in retaining existing customers, comparing with the loss of customers to capture the key insights and conquer the challenges in customer relationship management.

1.2 Research Objective

Research objective is defined as an apparent and demonstrative statement that presents an orientation to examine the variables, summarizing the result expectations of a research study (SOAS 2021). Moreover, according to Jaikumar (2018), a research objective is crucial in a research paper to accomplish the appropriate result.

This research implementation aims to understand the concept of customer relationship management in an e-commerce business, the notions of customer retention and customer attrition, and investigate all factors that could affect it. Many firms mentioned the term customer relationship management, the general approach of customer retention or customer attrition in business with a broad level. At the same time, a minority of investigations recognize the importance of these metrics and the value transmitted to the firm.

In this study, the customer retention and customer churn of Dermoshop Oy would be a specific case to be examined and might contribute to the company operation strategies. Understanding the current business performance in customer retention and customer churn would support the company in capturing the essential features such as special periods when increasing customer repurchase intention dramatically, understanding the periods when loss of customers threatens the firm at the most. Furthermore, it is possible to compare the total number of customers that have remained, the total number of lost customers, and the total number of newly acquired customers in the same designated period of Dermoshop to revise and possibly adjust the customer relationship strategies in business operation.

1.3 Research Problem

A research problem is a statement presenting a subject under consideration, a condition to be enhanced, or an irritating question that remained in literature (Bwisa 2018; Alvesson & Sandberg 2014). To be precise, a research problem would illustrate the need and demand for essential understanding and conscious examination. With the presentation of the research problem, the research paper could be driven and targeted in-depth level; it explains the research procedure and provides the straight direction for the investigation (Tom 2021).

According to Saleem, Saleem, and Kayani (2014), the tremendous advantages would accompany complicated challenges, and a transformation from traditional commerce to electronic commerce can lead to various disadvantages for a business. The publication of product information on a company's online website provides customers with colossal information such as product features, ingredients, price, rating, and customer feedback on

specific products. Consequently, clients may have been flexible to search for the product they wish to buy at an affordable price after comparing various products with the particularized information. As a result, it provides the possibility and more alternatives for customers to select a reasonable vendor among competitors in the same industry, causing the phenomenon that the competition in e-commerce among businesses could be considered more challenging than the traditional competition (Vadwala & Vadwala 2017). Because there is an insignificant difference between competitive products provided by various suppliers with an identical product quality, an extra added value should be included in e-commerce business to obtain a competing advantage and attract consumer attention, according to Chermatony, Harris, and Riley (2000).

There is a tendency for electronic commerce businesses to understand and acquire more existing and new customers by integrating customer relationship management concepts into business operation systems. When companies understand their customers after recognizing customer demographics and purchasing behavior, an accommodated product or service could be suggested for the right potential customers at the right time to retain customers. Furthermore, it would be crucial to identify the key customers with their value from purchasing products, classify customers into various groups, and notice customer churn rate to prevent business from risky situations. According to Saleem, Saleem, and Kayani (2014), the firm's capacity to acquire more customers and avoid dropping customers might demonstrate its ability to manage the customer relationship. For that reason, customer retention and customer attrition could be some of the potential metrics to evaluate company performance in business development.

Therefore, it is widely held that knowing the importance of customer retention and customer attrition plays an integral part in e-commerce companies. A possible explanation is that it would likely help the firm understand its performance, improve customer purchase behavior, and get competitive advantages (Bird 2021).

1.4 Thesis Structure

The research paper will be divided into six chapters and references, which includes:

- Introduction
- Dermoshop as a case company

- Literature review
- Methodology of the study
- Empirical findings
- Conclusions and Recommendations

The first chapter includes the introduction of the thesis, presenting the background of the research, the term of e-commerce, the importance of customer relationship management, customer retention, and customer attrition. Then the second chapter will concentrate on introducing and describing Dermoshop Oy, an e-commerce company in the cosmetic industry in Finland, as a significant case study for this research, while the expected outcome will be discussed with further information. The literature review chapter will likely highlight the key concept related to customer relationship management in e-commerce, customer retention, customer attrition, and determinants influencing these critical concepts in e-commerce business. In the fourth chapter, the research method will be explained to define the investigation method, illustrating how to extract and integrate data and data analysis. Empirical findings, conclusions, and recommendations will be presented last chapters, demonstrating the concrete figures with insights and further suggestions based on the research analysis. However, to keep the confidential information of Dermoshop 's and follow a data protection regulation, the figures of customer retention rate, customer attrition rate, and analysis in empirical findings sections will not be visible.

2 DERMOSHOP AS A CASE COMPANY

2.1 General information

Dermoshop Oy is a cosmetic company under the brand Dermosil, located in Västanlidsvägen 50, 66201 Korsnäs, Finland. This company is one of Finland's largest webshops in cosmetic and skincare products, founded in 1983 by Mr. Henry Backlund (Dermoshop LTD 2021). In the first days of 1988, the firm started promoting and advertising their initial products from natural skincare and cosmetics to supply reasonable solutions for customers who suffer from sensitivities and skin problems (Postnord 2021). With Dermosil, the primary goal is to have active activities on the web constantly, and they are targeting to update the latest news before their competitors to attract more customers. Until 2021, Dermoshop has been continuously concentrated on four main markets in Finland, Sweden, Russia, and Estonia. At the same time, Finland plays an integral part in the general market, and Sweden is considered the largest export market (Postnord 2021).

Dermosil is mentioned as one of the most successful companies in the cosmetic and skincare industry, which comprises various tremendous firms such as Lumene and L'oreal in Finland. Although the competitors implement their strategies by promoting different channels in webshops and offline stores or corporations with supermarket chains, Dermoshop still maintains high performance with high speed by utilizing a unique channel - a webshop under the address *www.dermosil.fi*. When experiencing Dermosil.fi, customers could be advised and suggested various products with affordable prices and eco-friendly to the environment. This feature might be recognized as one of the most advantages of acquiring more customers. During 2020, Dermoshop successfully kept growth although the COVID-19 pandemic, the firm managed well strategies to acquire more new customers and retained former customers to buy products, with total revenue of more than 27 million euros (Dermoshop LTD 2021).

2.2 Company structure

According to Dermoshop LTD (2021), this cosmetic company includes five subsidiaries which will be illustrated in Figure 1 below.

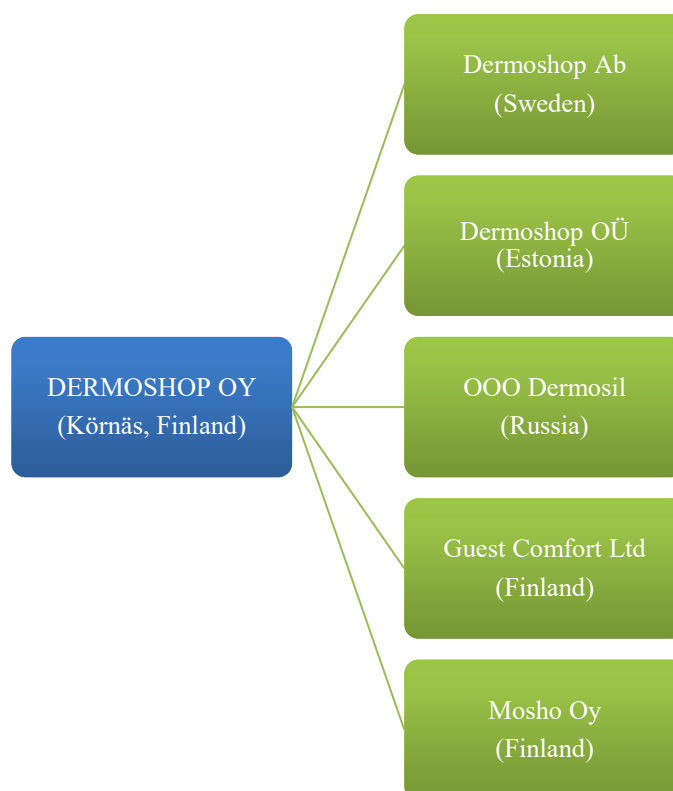


Figure 1. Dermoshop’s subsidiaries.

As displayed in the diagram, the three primary subsidiaries located in Sweden, Estonia, and Russia are responsible for promoting and selling Dermosil’s products generated for challenging the Nordic climate. Simultaneously, two Dermoshop Group members are taking diversified obligations more than selling the typical products. Guest Comfort Ltd will be accountable for trading guest facilities and Mosho Oy contributing resources for institution classes and sports organizations to raise funds. According to Guest Comfort Ltd (2021), by providing guest-friendly cosmetics, exclusive accessories, and amenity goods, the organization has achieved building a long-term relationship with partners from diverse industries such as hotels, airlines, cruise lines, and wellness equipment. At the moment, Dermoshop Oy and its subsidiaries are evaluated to manage the relationship with customers and potential partners sufficiently.

3 LITERATURE REVIEW

The following chapters will display the theoretical scheme, including the terms and theories related to customer relationship management and its metrics which will be described and explained in this research study. Initially, the main concepts about Customer Relationship Management in e-commerce, Customer Retention, and Customer Attrition will be presented at the beginning of this chapter. After that, the concentration will be switched to explain the factors that could influence Customer Retention and Attrition and then clarify the reasons for selecting these two concepts as the primary terms in customer management. Finally, after describing the essential philosophies, the formulas displaying how to compute customer retention and customer attrition rate will be illustrated as the last parts of this chapter, preparing the equation for the Dermoshop case study in the subsequent chapters.

3.1 Customer Relationship Management in e-commerce

Many studies determined that customer relationship management plays a significant part and is an essential factor of e-commerce to generate long-lasting relationships with potential customers by enhancing customer satisfaction, commitment, and retention (Sigala 2004). To be more specific, many investigations revealed that increased customer experience could drive a firm's development by improving customer satisfaction, loyalty, and customer commitment. Therefore, a company is recommended to evaluate the customer relation by revising various perspectives in customer relationship management, and the primary necessity is to determine the concept definition and understand its importance to the business.

3.1.1 Customer Relationship Management

Customer Relationship Management is defined as a valuable method for customer base enterprise, which includes principles, experience, and guidance applied by a business to maintain and enhance the customer relationship (Kumar & Petersen 2012). According to Adebajo (2003), CRM is considered to be one of the most accelerated growing supervision procedures which are approved and applied over businesses. There is a possible explanation that CRM is obtained from the companies' demand at a generic

level, and it provides the firm with a holistic picture of customer relationship management situation with its importance (Bhat & Darzi 2016).

Moreover, an additional reason explaining why CRM can be a comprehensive subject presents that it includes various factors and continuing progress from gathering, analyzing, and transforming customer level information to support the decision-making within an organization (Rygielski, Wang & Yen 2002). Furthermore, applying Customer Relationship Management into a business strategy will play an integral part in acquiring profitable customers, maintaining beneficial customers, and avoiding valuable customers from transferring to competitors. Moreover, it awakens the profitable customers, who have stopped buying for a long time, returning and making purchases by recognizing the value given by customers (Kumar & Petersen 2012). With a customer base enterprise, the term can provide the holistic view of the customer by emphasizing customer value during their entire life buying products, instead of evaluating only customers transactions.

In Customer Relationship Management, customer value can be defined as one of the most important concepts because it encompasses the financial benefit of the customer relationship providing the enterprise, and it can be mentioned as a critical metric to assess marketing accomplishment (Kumar & Petersen 2012). Moreover, there is a term presenting and consolidating the firm's customer value during their entire lifetime doing business with the brand, *Customer Lifetime Value (CLV)*. In 2002, Jain and Singh noted that "Customer lifetime value for a firm is the net profit or loss to the firm from a customer over the entire life of transactions of that customer with the firm." The given information of CLV demonstrates the customer's future value created from the marketing initiatives so that the firm can optimize the operational strategy with a reasonable budget plan to maintain the profit. According to Chang, Li, and Chang (2012), understanding the CLV concept provides the firm opportunity to recognize customer behavior and gain the capability to assess the relationship between the business and their potential consumers. Therefore, after having combined the advantages of CLV in a business, the exaggeration of the individual customer lifetime value would be the most transcendent intention to enhance the company's benefits.

The proper customer relationship management would provide several advantages to the firm. In terms of CRM initiatives, there are four main categories: *Customer Acquisition*,

Customer Retention, Customer Churn, and Customer win-back (Kumar & Petersen 2012). The term *Customer Acquisition* refers to the procedure of gaining new clients and could be recognized as the basis to establish the whole CRM process (Kumar & Petersen 2012; Galetto 2015). *Customer Retention* is specified as the process of a company in maintaining and enhancing existing customer relationships in repeating purchasing to improve customer profitability (Kumar & Petersen 2012; McEachern 2020). *Customer Churn* is recognized to determine the progress to manage the proportion of existing customer who leaves a firm after making their last purchase, which is also mentioned as Customer Attrition. In contrast, the last important metric is *Customer win-back*, defining the process of reattracting the customers who have migrated the attention to competitors, intending to prevent a high customer attrition percentage and develop customer commitment (Kumar & Petersen 2012; Gravy Analytics 2021). These four categories are connected and influence mutually in customer relationship management. Companies have to attract more new customers in the initial phase to build the brand image in the customer acquisition phase. Then, the new customers who are attracted and made the first purchases would become the existing customers during their entire life doing business with the firm. Moreover, the firm should implement the management strategies to remain and magnetize these current customers to repeat purchases over a period, which is the holistic meaning of customer retention. After that, some existing customers will decide to stop buying products and convert to other merchandise with better offers. The original firm should consider and evaluate this challenge to minimize the customer churn as it negatively affects revenue and profit. Finally, to gain profitability and prevent revenue loss, the company is encouraged to implement campaigns to re-attract customers, who have shifted to other competitors to purchase again, which is a customer win-back process. As described above, there is a compulsory connection between four categories, which should be concentrated thoroughly by the firm, especially with an e-commerce business.

After having compared customer churn to customer retention, customer churn has a significant difference to customer retention and even has a substantial contrast among these two metrics. A likely explanation is that churn demonstrates the number of consumers who discontinue purchasing, while retention displays how the existing customer's loyalty to the company maintains making purchases (Smith 2020). According

to Bird (2021), the diversity can be explained that the higher proportion of customer retention the company pursues to achieve, the lower the customer attrition they desire.

As described in the previous chapter, this research study would be centralized on customer retention and customer churn analysis, especially Dermoshop Oy's case. The objective is to assist Dermoshop in understanding and evaluating the current customer management performance. Furthermore, it would catch the firm's attention to notice the important occasions when the strategies can be implemented to attract new customers, retain old customers, and capture the special events within a year when losing the most customers. Before concentrating on customer retention and customer attrition evaluation, the term e-commerce should be clarified in the next section to provide an in-depth understanding. Understanding the e-commerce concept can be helpful when implementing comprehensive research in customer relationship management in e-commerce, especially to analyze the importance of customer retention and customer churn.

3.1.2 Theory concerning electronic commerce

Regarding e-commerce, Anderson (2020) and Chaffey (2009) defined that electronic commerce (e-commerce) as a trading model which supports businesses and customers to sell and purchase products or services through the Internet. In recent years, e-commerce has grown dramatically and has been an explosion with 19% increasing during the pandemic COVID-19 (Chaffey 2021). A possible explanation for the significant growth is that E-commerce provides benefits for both customers and enterprises for various reasons in different prospects of seller and buyer.

From the customers' perspective, electronic commerce can be implemented using digital devices such as computers, tablets, or mobile phones without the need to visit directly to the offline store. In other words, electronic commerce helps customers save more time and money because of its simplicity and comfort, providing a high-quality customer experience. Moreover, buyers are provided with a wide range of products when shopping online than offline stores. When shopping online, customers would gain more specific information to compare products from several brands and get various options in final decision-making. The available information about products given to customers may

include product description, usage instructions, product price, and customer feedback which is the most efficient factor when customers compare desired products (Pillemer 2020). From a business perspective, implementing electronic commerce provides a firm with substantial precious customer data containing customer name, email address, phone number, customer behavior, and customer demographic, helping a firm improve customer relationship management and gain more competitive advantages. Furthermore, instead of the storage limitation challenging the business when operating a physical store, an online store provides more capacity to present a diversity of products, providing more options and offers to sell to customers. According to Vadwala and Vadwala (2017), by converting to e-commerce, the firm can gain more advantages to broaden domestic and global markets with minimal financing expenditure. Simultaneously, e-commerce can help business increase the capability to attract new clients, cooperate with high-quality suppliers, and achieve sustainable partnerships over the world. In conclusion, electronic commerce is predicted to develop dramatically in the future, making selling and buying activities more uncomplicated and minimal time-consuming while maintaining benefits for both customers and enterprises.

Because online commerce is in progress to expand and be forecasted to have significant development in the next few years, it is recommended to investigate and understand various types of electronic commerce models, including four main types: *Business to business (B2B)*, *Business to consumer (B2C)*, *Consumer to consumer (C2C)*, and *Consumer to business (C2B)* (Bloomenthal 2020; Vadwala & Vadwala 2017).

Business to business (B2B) model is defined as a type of online commerce transaction when a business sells a product or service to other businesses, including a wholesaler or a retailer (Chen 2020). In other words, the B2B model is conducted between businesses more than between one business to an individual customer. A typical example for the B2B model is Amazon Business, the B2B marketplace on Amazon, and supply business consumers with the available pricing, option, and benefit of Amazon with designated features for all business sizes (Amazon Business 2021). In other words, Amazon Business is an e-commerce platform generated strictly for businesses of all sizes to implement the trading with business-only pricing terms, concentrating on the entrepreneur demands.

Business to consumer (B2C) model is presented as the most attractive business model when the buying and selling activities are conducted over the Internet between business and individual customers. The business model of Dermoshop Oy, the case study company in this research paper, is the classic example of B2C. The firm offers various products on the webshop www.dermosil.fi and sells directly to the final customers in the typical operation. Moreover, another referred example could be the business model of Udemy. This online education platform provides and sells online courses to customers to accomplish the learner demand skills in programming, academics, language, or entrepreneurship (Udemy 2021).

Consumer to consumer (C2C) model is defined as online commerce in which an individual conducts selling activities of a specific product or service to other customers over the Internet. In other words, a buyer can purchase a product or service from another customer on a third-party platform or with the help of a third-party business to determine the transactions (Tarver 2020). For instance, Airbnb and Uber can be considered as two popular examples implementing the C2C model. Airbnb is an online platform that links the hosts with the demand to leasing the house space and the guests finding a reasonable price accommodation over a period (Sraders 2018). Airbnb provides a suitable online environment to help the host can lease the space and supply a competitive price apartment for the clients. Uber has the same operation as Airbnb, and it is described as a mobile app providing a platform for users to find their drivers by submitting a defined trip request to an Uber driver in the nearest area via the Uber app (Tillman 2019). To be more precise, an Uber app helps customers finding out their drivers and allows drivers to gain customers at a reasonable price with a suitable route.

Consumer to business (C2B) is defined as a business model in which individual customer sell their products or services with a named price to an organization (Arline 2018). An example could explain this business model in e-commerce, such as an influencer who is famous and has a massive audience on social media can cooperate with the brand that runs a marketing campaign to promote products. The influencer can get paid by sharing the experience in using brand products with the followers; in return, the product image is advertised to potential customers.

When mentioning e-commerce, four types of e-commerce, which are discussed above, are usually covered as the binding terms. Besides, two main perspectives are described to consolidate the e-commerce under buying and selling prospects: *Buy-side* and *Sell-side* e-commerce (Chaffey 2009).

Buy-side e-commerce presents the transactions implemented between a purchasing enterprise and its distributors (Chaffey & White 2011). Applying buy-side e-commerce would help the firm minimize the redundancy in inventory storage, manage product availability if needed, decrease transaction costs, and diminish the order processing expense. For instance, to produce coke products, Coca-Cola needs to purchase different ingredients such as sugar from Nordzucker Group supplier in Germany (The Coca Cola Company 2021). In this case, the transactions conducted under Coca-Cola's document are determined as buy-side e-commerce.

Sell-side e-commerce demonstrates the transactions conducted between a selling business and its customers (Chaffey & White 2011). There is a typical example explaining a holistic view of sell-side e-commerce, which is the selling activities of Coca-Cola company. After producing a wide range of products, Coca-Cola will sell coke products to customers. Under Coca-Cola's prospect, the transactions implemented between an organization and the consumers are defined as sell-side e-commerce. In general, sell-side e-commerce deriving from the selling organization prospect and buy-side e-commerce obtaining from the purchasing organization prospect. Figure 2 below will be illustrated to determine the differentiation between buy-side and sell-side e-commerce (Chaffey 2009).

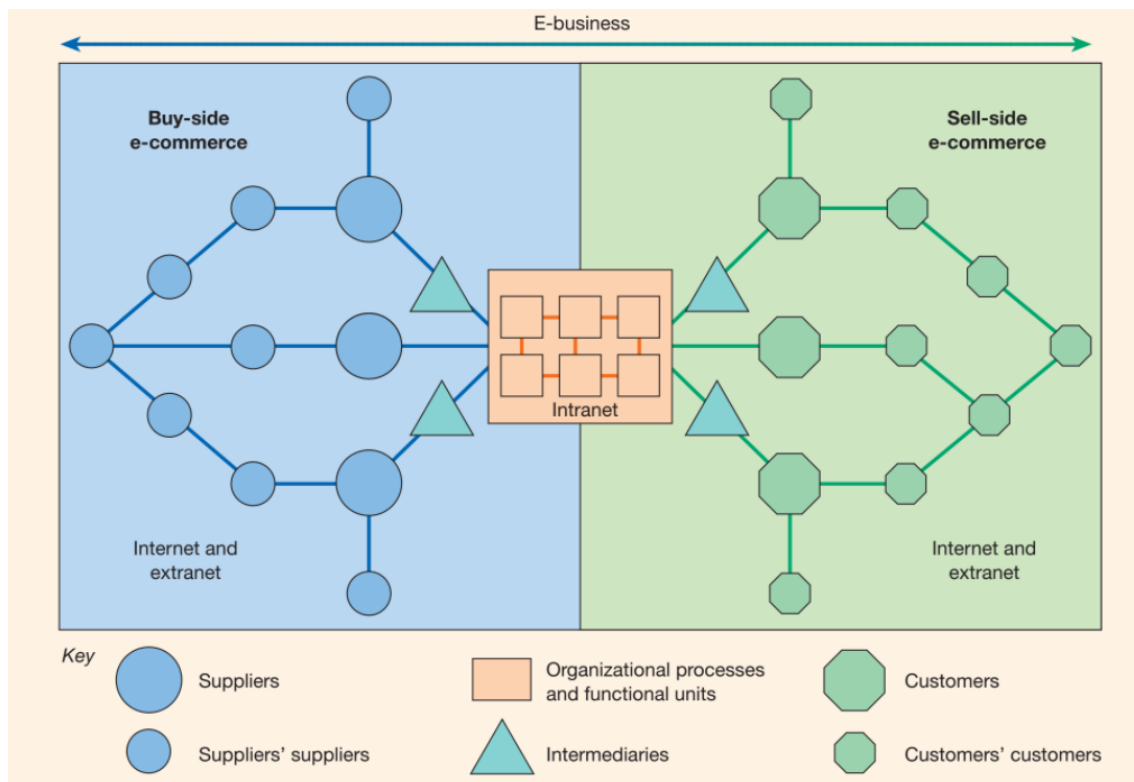


Figure 2. The differentiation between buy-side and sell-side e-commerce.

After identifying the distinction between buy-side and sell-side e-commerce and obtaining four primary types of e-commerce, an integrated view of e-commerce has been constructed, which becomes a basis for further investigation related to customer relationship management in online business. When making a consideration about the process of online trading activities, e-commerce is the most popular term to be mentioned. Still, another concept is similar to e-commerce, and it is recommended to be discriminated to gain a clear understanding, which is *e-business*. In terms of e-business, it is determined as the implementation of business with the usage of “internet, extranet, web and intranet” (Magento Expert 2017). Within e-business, various components are included and combined to make a completed business model consisting of e-procurement, online stores, online marketplace, online associations, and online organizations (Temok 2021). For example, Amazon.com is well-known to be one of the most successful e-business to serve a broad market with its vast online community and online marketplace. Although

there is a similarity between e-commerce and e-business, an identification differentiating between these two terms should be conducted to have an apparent perspective.

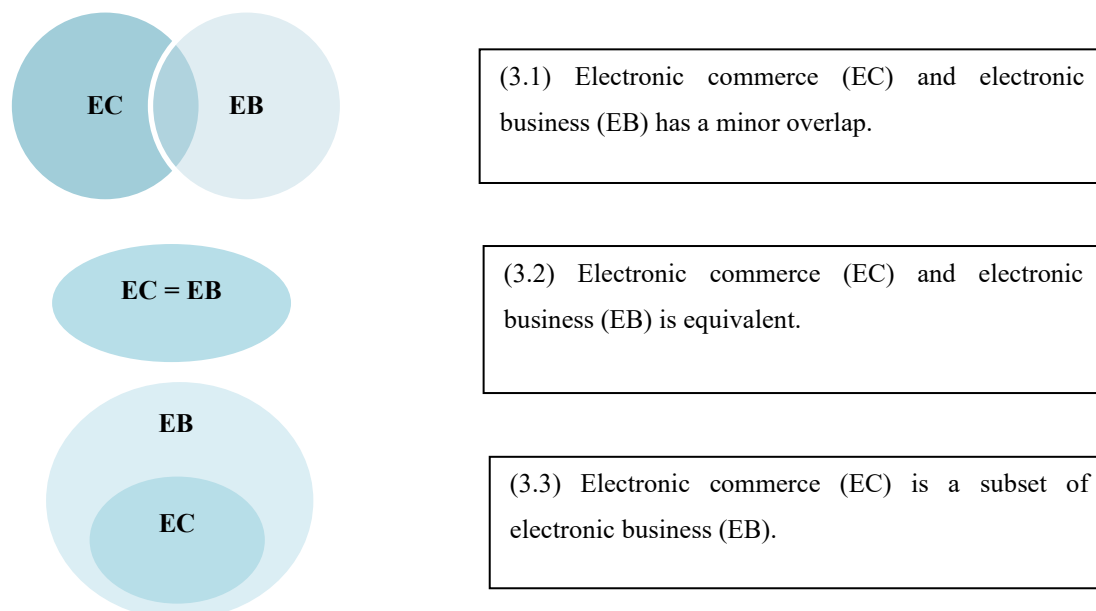


Figure 3. Three perspectives of the relationship between e-commerce and e-business.

As far as the relationship between e-commerce and e-business is concerned, Chaffey (2009) noted that there are various critical perspectives of the relationship, which are presented in Figure 3 above. The first perspective is illustrated in figure 3.1 when electronic commerce is shown to have a minor overlap with e-business, while figure 3.2 displays that it would be more reasonable when there is an equivalent relationship between e-commerce and e-business. The third viewpoint in figure 3.3 is designated as the most practical when describing that e-commerce can be assumed as a subset of e-business. This prospect was recommended to be the most realistic and can be considered as the principal perspective (Moriset 2018).

According to Sood (2012), e-commerce can be mentioned as a component of a large e-business concept, assisting in developing strong relationships between customers, suppliers, and firms while delivering high customer satisfaction and minimizing its cost consolidating their bottom line. As mentioned in the previous chapter, Dermoshop Oy is an e-commerce company, and its operation follows the e-commerce concepts, which is emphasized as a critical part of this research paper. After gaining an in-depth understanding of e-commerce and customer relationship management, the following chapters will be followed with the analysis of customer retention and customer attrition.

3.2 Customer Retention

The previous chapter has presented the description of Customer Relationship Management, its role in e-commerce business within the digital technology stage, the term of e-commerce, and the differentiation with e-business. In this chapter, Customer Retention and the importance of customer retention in business would be centralized and analyzed comprehensively. The beginning section explains why customer retention is selected as one of the key metrics to evaluate the firm's customer acquisition capacity; after that, the research progress will analyze and examine the main elements of customer retention. The next part will be presented on the factors influencing customer loyalty in business, investigating and assisting e-commerce companies in gaining a higher customer loyalty proportion within the business operation. Finally, the research paper will illustrate and examine the customer retention rate formula, explaining the logical calculation to achieve the result, displaying the company's competence in maintaining existing customers who repeat purchases during the given period.

3.2.1 The reasons why selecting Customer Retention

As mentioned in the previous chapter, customer retention could be considered a valuable and consequential factor. Many research studies found that understanding customer retention would assist a company in constructing a satisfactory relationship with potential clients, resulting in developing their customer's lifetime value, boosting the firm's revenue to achieve commercial success (McEachern 2020; Raab, Ajami, Gargeya & Goddard 2008). Several reasons are presented to explain why customer retention plays an essential part in the e-commerce business, related to customer development, the influence on company profitability, and the beneficial operational costs.

Firstly, customer retention plays a significant role in forming the long-term customer relationship and contribute to customer development. The customer life cycle includes Customer acquisition, Customer retention, and Customer development, which means that customer retention builds the central part of it among three critical components in customer life cycle (Buttle 2009). Moreover, figure 4 below would be presented to describe the relevance of customer retention and emphasize its importance in connecting between customer and company achievement (Raab et al. 2008). As illustrated below, customer retention stands in the location between customer satisfaction and customer value, playing as a critical connector leading to high company achievement by maintaining satisfied customers and improving customer value.

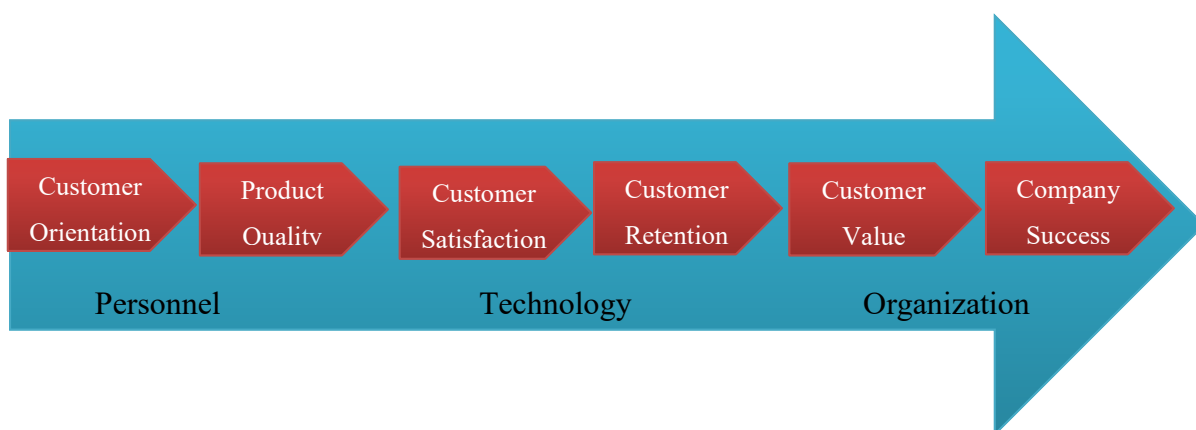


Figure 4. The whole concept and relevance of customer retention.

Besides, Kumar and Petersen (2012) presented a perspective to consolidate the concept and relevance of customer retention. By implementing numerous researches to analyze customer relationship management across several industries from telecommunications, commercial services, food and beverage, and retailing, there is a consistent connection between product quality, customer satisfaction, customer retention, and company success. When product and service quality is developed, it will enhance customer satisfaction, resulting in customer retention growth. It can be suggested that a satisfied quality would improve the relationship between satisfaction and retention (Kumar & Petersen 2012; Odunlami 2015). While increasing customer retention, the company performance will be strengthened in the same direction. In the general prospect from these integrated connections, customer retention would play a pivotal part in assisting a company gain high performance, and the firm achievement can be complicated without emphasizing customer retention development. Figure 5 below illustrates and explains the importance

of each component that causes the success in the firm's achievement (Kumar & Petersen 2012).

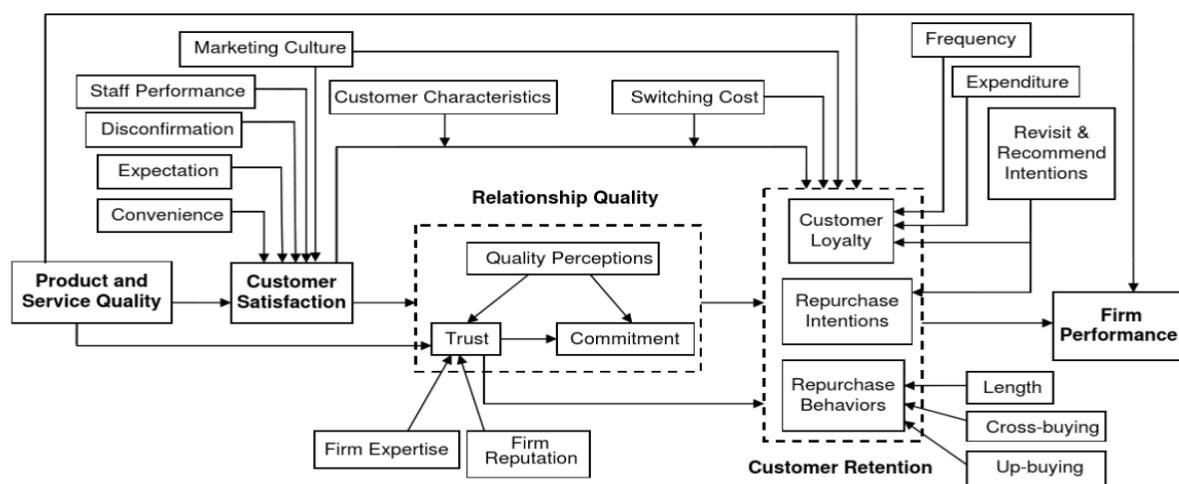


Figure 5. The merged relationships directed in customer retention.

Secondly, one likely explanation is that customer retention has a strong correlation with the company revenue since the 5% growth in customer retention can improve company profit by 25% to 95% (Bernazzani 2021). Therefore, it is likely that the development of customer retention could significantly contribute to an organization's revenue, and 80% of the expected interest can be generated from 20% of the existent customers (Murphy & Murphy 2002; Bernazzani 2021). When an organization fails to encourage old customers to repeat the product purchases, the company sales amount and profitability will be declined definitely, which causes a negative effect on the business performance.

Furthermore, customer retention has a significant influence on company operational costs, such as the cost of acquiring new customers and the cost of maintaining old customers. When implementing a comparison, attracting new buyers would be more expensive six times than the cost of retaining old customers to purchase the firm's products (Raab et al. 2008). Moreover, implementing marketing projects related to customer retention would benefit the firm from the increased contribution of loyal customers. Inversely, acquiring new customers would be more expensive from promoted strategies such as creating new account users or advertising expenses (Nasir 2015). Additionally, after the firm achieved success in acquiring new buyers, it is undeniable that it could require many years to obtain revenue from this customer group and

regenerate the acquisition cost. After that, the newly acquired customers would become existent customers who are beneficial to the firm, and the relationship maintenance cost among the company and existing customers can be decreased. To be more precise, the firm would need to allocate more time and resources to conquer the new customer acquisition, and customer retention has contributed positively to the firm's financial benefits. By concluding all positive consequences above, customer retention should be concentrated and allocated consistently by various companies and prioritized on investing by researchers.

3.2.2 Components of Customer Retention

Regarding customer retention components, Kotler (1994) and Odunlami (2015) found that customer satisfaction could be considered one of the essential factors affecting customer retention. Moreover, trust and commitment are mentioned as two additional determinants contributing significantly to the high customer retention in customer relationship management (Hennig-Thurau & Klee 1997).

Many research papers have explored customer satisfaction as a mandatory element when mentioning customer retention components because of its strong relationship (Kotler 1994; Odunlami 2015). According to Gerson (1993), customer satisfaction is defined as the measurement displaying a customer's enjoyment of certain provided products or services over customer expectation. While customer satisfaction illustrates customer experience on specific products or services, presenting customer perception to the firm, customer retention allows the company to recognize the customer response to the company's brand and products after making the first purchase. In recent years, customer retention and its relationship with customer satisfaction are increasingly concentrated by companies and progressing to be a significant consideration within business operations to enhance the profitable long-term relationships between business, consumers markets, and final customers.

Moreover, fulfilling the customer demands and desires could be concentrated to increase customer satisfaction, achieve customer well-being, enjoyment, and convenience (Raab et al. 2008). When potential customers' needs and demands on specific products or services are satisfied, the firm can gain more open opportunities to maintain and increase

the consumer repurchase intentions to generate loyalty for continuous customers. In other words, delivering tremendous extra value through high-quality products or exclusive services would develop high customer satisfaction. Furthermore, satisfaction-oriented is suggested to be emphasized by firms to generate the emotional relationship with consumers, resulting in increased customer retention (Nasir 2015). By concentrating on developing customer satisfaction, the firm might have more opportunities to gain benefits. There is less price sensitivity with satisfied customers who tend to purchase supplementary products, especially have more negligible effect by competitors and maintain a long-term relationship with the firm (Zineldin 2000). In 2020, Chambers stated that 81% of satisfied consumers would like to repeat buying products of the firm which provided a positive experience in the previous purchase, and 95% of dissatisfied buyers can convert to other suppliers after a negative experience. Therefore, it is also worth noting that satisfaction would be an integral part of strengthening customer retention. However, Eriksson and Vaghult (2000) argued that there are suddenly occasions when satisfied consumers can switch to competitive suppliers, while several customers remain to repurchase many times although they are not satisfied with the firm performance because of the limited supplier options. Depending on that argument, many researchers noticed that customer satisfaction could not be the unique determinant leading to customer retention, resulting in the need for further investigation on other various factors.

As customer satisfaction cannot ensure the customer repurchase intention, additional determinants leading to the high customer retention should be mentioned and combined with customer satisfaction, which is trust and commitment (Hennig-Thurau & Klee 1997; Morgan & Hunt 1994). The centralization of trust and commitment in relationship management would construct a positive connection between customers and business, strengthen customer retention and improve company productivity.

Trust occurs when companies gain an in-depth understand of customer's needs and offer suitable relevant products or services to customers, and the trust is a glue attaching customers to remain with an organization. When mentioning commitment, the term would be considered as the customer encouragement of maintaining a long-term relationship with the firm (Moorman 1992). Many researchers noted that retained customers with high satisfaction and trust would likely repurchase products with regular suppliers. In contrast, the lack of trust can cause a decrease in retention even for customers

who satisfy with the firm (Ranaweera & Prabhu 2003). In several situations, when a supplier fails to provide satisfactory products or services, the customers who have a high level of trust will tend to maintain and purchase products with the regular firm instead of switching to other distributors. Trust likely plays a role as complementary components to satisfaction in enhancing customer retention (Raab et al. 2008; Ranaweera & Prabhu 2003). Besides, when customers gain a high level of trust in a service or product, they are more efficiently committed to the supplier. As a result, a strong, effective between customers and businesses can lead to high customer retention and incline to maintain purchase activities (Gounaris 2005).

Furthermore, Alkitbi, Alshurideh, Kurdi, and Salloum (2020) have provided an argument that consolidates the relationship between trust, commitment, customer satisfaction, and customer retention. It is stated that the level of trust between customer and supplier is strongly affected by the quality of service, resulting in a sufficient commitment to the supplier, which improves customer intention in purchasing additional products and strengthens the relationship with a regular supplier. In other words, service quality is considered to be a trust antecedent (Gounaris 2005). A new model is established by implementing a combination between Trust, Commitment and Overall Quality Perception, which is Relationship Quality, influencing customer retention (Hennig-Thurau & Klee 1997). An accomplished model would be introduced below in figure 6, presenting the internal relationship between essential determinants influencing customer retention.

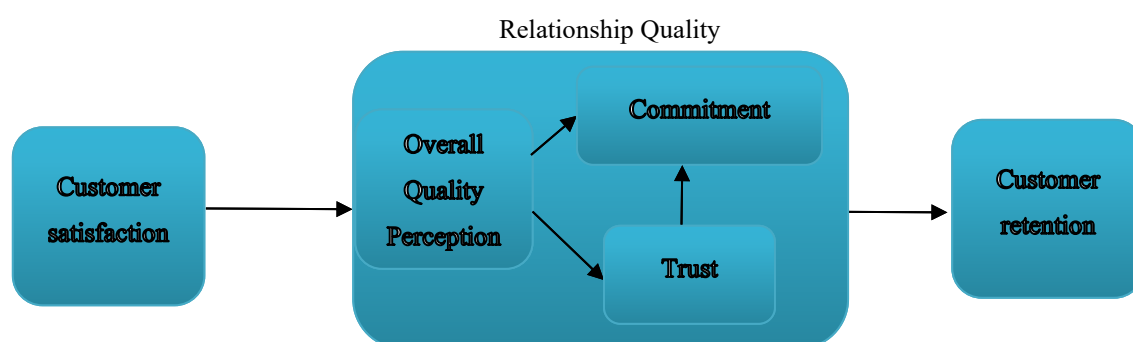


Figure 6. Relationship between components affecting Customer retention.

As customer satisfaction has been introduced as a factor affecting customer retention, *Relationship quality* would be another crucial determinant to assist a company in achieving high customer retention. In this model, customer satisfaction is located as the

fundamental part, initiating the model, while relationship quality is centralized, consisting of three main components: *Overall quality perception*, *Commitment*, and *Trust*. This relationship model should be highlighted because only satisfied customers are insufficient to be considered long-term customers; by combining with Relationship quality, there is a more accurate to ensure customer retention. As illustrated in figure 6, the overall quality has a crucial effective influence on commitment and trust, while existing a significant impact from trust to commitment, and the Relationship Quality part would directly influence customer retention.

In summation, this section has centralized on the primary components that generate customer retention with the updated model illustrating the relationship between overall quality perception, trust, and commitment. Moreover, satisfaction, trust, and commitment also contribute to a successful relationship resulting in customer loyalty related to customer repurchase intentions. Thus, it would be a connection between customer loyalty and customer retention. The following section will be allocated to describing and examining customer loyalty in business, exploring factors that would lead to customer loyalty in the e-commerce business.

3.2.3 Factors that lead to customer loyalty in e-commerce business

Regarding customer loyalty, the term is mentioned to demonstrate the long-term relationship between customers and an organization that assists in profitability enhancement without financial expenditure (Upamannyu, Gulati, Chack & Kaur 2015). Many researchers conducted a study about factors affecting customer loyalty and noted seven primary determinants, including *Satisfaction*, *Trust*, *Commitment*, *Emotions*, *Perception of corporate image*, *Value perception*, and *Quality* (Agrawal, Gaur & Narayanan 2012; Lin & Luarn 2003).

With three determinants, Satisfaction, Trust, and Commitment, the definitions are described in the previous section and influence customer loyalty in the same direction with customer retention. When introducing satisfaction as a determinant of customer loyalty, satisfaction is determined to improve customer loyalty, build the brand reputation, and enhance the strong customer referral ability (Upamammnyu, Gulati, Check & Kaur 2015). Satisfied consumers are more likely to do business with a firm and

conduct positive word-of-mouth power about the brand and magnetize other buyers to purchase products. In other words, satisfied customers can be referrers who spread the positive brand image and reputation to other consumers and increase business profit (Buttle 2009). In contrast, low customer satisfaction, which leads to an explosion of customer word-of-mouth phenomenon, can negatively affect the brand image, business profitability and destroying customer loyalty. The statistical research of Nasir (2015) has claimed that a dissatisfied customer in a physical world can expand the negative impression of the firm's product to 6 other consumers, while a displeased customer on social media can be capable of broadening the pessimistic experience up to 6000 consumers.

Trust also impacts customer loyalty, and when the firm possesses the capability to increase customer belief and commitment, the more loyal customers will be acquired. Regarding the effect of trust on customer loyalty, a company with a high level of customer trust can be a reliable basis for customers in certain vulnerable situations and prevent customers from uncertainty in switching to other competitors (Aydin & Ozer 2005). Moreover, when customers gain high trust in a brand, a regular purchasing intention will be generated. As a result, the perceived risk with the supplier is declined, and the long-term loyalty relationship becomes more critical. Furthermore, there is a primary term presenting the reflection of trust definition, which is credibility. When an organization serves customers with the purpose of gaining high credibility, there would be a diminution in customer risk perception and a positive influence on the long-term loyalty to the firm (Vuuren, Roberts-Lobard & Tonder 2012). As mentioned, customer trust should be emphasized as it significantly impacts building customer loyalty with the company.

Commitment presents the third determinant affecting customer loyalty as it is the critical factor illustrating the endeavor in remaining and improve customer relationships (Vuuren, Roberts-Lobard & Tonder 2012). Many studies found that commitment is an essential component generating a profitable long-term relationship by enhancing customer loyalty (Wlater, Helfert & Mueller 2000). An increase in customer commitment will likely improve customer's intention, which makes customers maintain to repurchase in a long term period. Moreover, a committed customer will have a higher desire to rebuy products from regular brands, increasing customer loyalty and playing a role as referrers to suggest the brand image to other buyers.

Moreover, *emotion* and *perception of a corporate image* are included in a set of customer loyalty determinants. Many researchers indicated that only concentrating on customer satisfaction could not be effective in analyzing customer purchase behavior without evaluating customer emotions. An explanation is that emotions can impact customer decision-making, and the confident feeling can lead to high customer repurchase intention. On an in-depth level, there is a strong correlation between positive emotion and effective word-of-mouth. Customers with positive emotions are willing to share conclusive experiences with other buyers and more enthusiastic about spending more resources, maintaining a long-term relationship with an organization (Yu & Dean 2001). Besides, the *perception of corporate image* is also a crucial factor to customer loyalty, such as a company's reputation. Ogba and Tan (2009) noted that "...a good brand image can enhance the customer experience and satisfaction for long-term commitment." Furthermore, it is explained that a powerful brand will attract a massive number of consumers with high commitment, increasing customer repurchase intention, the growth in customer loyalty, and active interaction between the brand and loyal customers.

In addition, *quality* and *value perception* is the last two determinants mentioned in the factors affecting customer loyalty. *Quality* presents the product or service features, which determines its ability to meet the customer needs and requirements (MBA Skool Team 2018). If a firm can provide high product quality to the end consumers, customer satisfaction will be increased, resulting in a high customer tendency in repeating purchases. Additionally, after gaining a positive quality perception, consumers could maintain doing business with the brand with a supportive mindset, enhancing positive word-of-mouth and high customer loyalty. Additionally, *value perception* is an essential determinant when evaluating the cause of customer loyalty. The customer value perception is created when customers recognize the value provided by a firm is higher than the other competitors. A positive value perception would increase customer satisfaction and loyalty because customers will likely have a strong eagerness to purchase the products from high-value perceived brands, resulting in high customer repurchase intention in long-term relationships (Yang & Peterson 2004).

This section has been emphasized the determinants influencing customer loyalty and explained the relationship between customer satisfaction, trust, commitment, customer loyalty, and customer retention. After clarifying the definition and the mutual connection

in the in-dept level, the next section will centralize the formula computing customer retention rate in the general level, which prepares a basis to calculate the customer retention percentage of Dermoshop Oy case study in later chapters.

3.2.4 Customer retention rate, CRR

As was mentioned in the previous chapter, the customer retention rate is described as a critical metric for businesses to evaluate the percentage of their existing customers with their loyalty, who maintain with the company and duplicate their purchases throughout the period (Baer 2020). Understanding customer retention rate could support the firm with multiple advantages because the 5% increase of customer retention rate can rise in profits of 25-95%. Furthermore, the probability of transforming an existing customer into a loyal customer can be 70%, while it could be 5-20% to convert a non-buyer into an existing customer (Bernazzani 2021; Salesforce 2021).

Regarding the customer retention rate calculation, CRR can be calculated in various flexible periods, such as weekly, quarterly, monthly, or annually, depending on the company's strategies, mission, and vision (Salesforce 2021; Ahmad & Buttle 2002). The straightforward formula below will illustrate how to calculate the customer retention rate for an organization (Salesforce 2021; Baer 2020).

$$\text{CRR} = ((E-N) / S) \times 100 \quad (1)$$

E: The total number of customers at the end of the given period.

N: The number of new customers the firm achieved during that given period.

S: The number of customers at the beginning of the given period.

In other words, to compute the customer retention rate, the number of newly acquired customers (N) should be subtracted by the total number of customers at the end period (E); the result stands for the total number of existing customers during the given period. The next step is to divide the result by the number of customers at the start period (S), and then the result must be multiplied by 100 to achieve the final customer retention rate, as illustrated in the formula above (Salesforce 2021). As this formula can be considered an elementary computation, it is necessary to introduce it in this research paper. By

applying the customer retention rate, the firm would be well-equipped to capture and understand customer purchase behavior and enhance its profit.

3.3 Customer Attrition

In the previous chapter, the research paper's concentration has emphasized customer retention, its importance with an e-commerce business, its components, factors affecting customer loyalty, and displayed the formula to compute customer retention proportion. In this chapter, the customer attrition and the significance of customer attrition in business would be the fundamental concepts to be presented and examined. The first section is allocated to re-introduce the customer attrition definition and explain why customer attrition might be considered as an essential determinant in business performance evaluation. The following section will explore elements that could drive and influence customer attrition in the e-commerce business. After that, the formula computing the customer churn rate will be illustrated in this final section with the description and explanation of the relationship between customer retention rate and customer attrition rate in business situations.

3.3.1 The reasons why selecting customer attrition

As mentioned in the previous chapter, customer attrition is introduced to evaluate customers who discontinued their description with a firm (Rodriguez & Shin 2013; Amaresan 2018). While customer retention illustrates how the firm achieves success in maintaining existent customers, customer attrition can demonstrate the loss of customers to a business. Many studies have suggested that it is essential for a firm to determine customer churn and implement strategies to provide encouragement and prevent consumers from switching merchandisers. According to Yang and Chiu (2006), there is a separation of customer churn into three various types, which are *Involuntary churn*, *Inevitable churn*, and *Voluntary churn*. To be more precise, the *Involuntary churn* could exist when the bill's payment is dismissed by customers, resulting in the service cancelation from the company. The *Inevitable churn* would be a consequence of the customer's death or customer migration in discarding customers from the market ultimately. Finally, *Voluntary churn* occurs if a customer switches from the original company to other merchandise for a superior value (Yang & Chiu 2006). To be more

precise, there are various reasons and factors causing the customer churn in active or passive ways. Therefore, companies are recommended to acknowledge and concentrate on customer attrition. Different explanations have been mentioned to explain why the firm should highlight customer attrition, which is associated with the failure of company revenue, business risk reduction, and competitive advantages.

Baer (2020) has argued that a minor increase in churn proportion can immediately have a negative influence on the firm's growth, especially with the loss of revenue. Moreover, a company would be under pressure and forced to overcome the high churn rate with the frustration of attracting enough new customers to accomplish the loss of churn customers (Lindfors 2019). As a consequence, the churn can cause a higher customer acquisition cost and decrease revenue to a firm as attracting new customers could be more expensive than retaining existing customers to repeat purchases. When a firm drops more customers, it is a possible situation that more capital should be allocated to recoup the lost revenue by acquiring new buyers. Therefore, understanding customer churn analysis could assist businesses in diminishing these financial problems (Baer 2020). Correspondingly, to minimize the operational costs such as acquisition costs and avoid dropping profitability, companies are suggested to select customer attrition as a critical metric that should be followed and monitored periodically to keep the most minimal proportion.

Furthermore, understanding and endeavoring to shorten the customer churn is considered as the key factor in assisting companies in the sophisticated market, increasing customer retention rate (Ahn, Han & Lee 2006). According to Reichheld (1996), with the 5% improvement in customer retention rate, there is a 35% increase in the average customer net sale value for technology enterprises and 95% for advertising businesses. By calculating the customer churn percentage over different defined periods within a year, a firm would capture the essential occasions when the customer churn hits the highest point and becomes a sensitive difficulty challenging the firm. Consequently, the highlighted events would provide more evidence to an organization to implement the most appropriate strategies to conquer customers' loss and prevent predicted risks. With the customer churn avoidance, the brand can gain more information in various prospects, which are noticed to be enhanced for future business development. Additionally, it would help the firm obtain an in-depth understanding of the target marketplace by recognizing

the hidden layers within the market, equipping valuable supplies for an organization to compete with other competitors in the same industry.

Therefore, many studies suggested that companies can assume to recognize the customer attrition rate and explore the aggregate pessimistic consequence during a given period. Many appropriate strategies can be conducted, such as recall management which could win back customers and reconstruct the relationship with customers who have shifted to other competitors. Moreover, to prevent customer churn within a firm, understanding the determinants influencing business is recommended, which will be explained further in the next section.

3.3.2 Factors that affect customer churn in e-commerce business

The previous section has defined customer attrition, emphasized its importance in an e-commerce business, and explained why selecting customer attrition is a primary metric in business operation. In this section, the research paper would centralize and analyze the main vital determinants that could affect customer churn. As mentioned above, customer churn could generate negative consequences, declining the firm profits and causing financial and social challenges for the company, especially e-commerce companies (Hejazinia & Kazemi 2014). In terms of customer churn determinants, there are seven factors that influence customer attrition, which will be introduced and explained in Figure 7 (Hejazinia & Kazemi 2014; Ahmed 2019).

Switching cost could be mentioned as the first factor influencing customer churn within a business operation, and it is the value that arrives when the customers aspire to convert from an initiative company to other suppliers (White & Yanamandram 2007). According to Shi, Zhou, and Liu (2010), the switching cost can consist of economic, temporal, passionate, and time. By canceling the subscription and converting to other product suppliers, it is likely that customer time, and money can be wasted, and the same with the buyer's benefit provided by a specific organization. To avoid a loss of money and benefit elimination, existing customers or even dissatisfied customers prefer to maintain the relationship with the firm (Hejazinia & Kazemi 2014). Therefore, it can be said that customer churn would be affected negatively, and the company revenue can be altered positively by the switching cost.



Figure 7. Determinants are affecting customer attrition.

Service price is presented as the second factor, referring to the customer expenditure to receive the offered service (Ahmed 2019). In a modern digital market, e-customers tend to do business with merchandise that offers a lower price than other competitors. To be more specific, the companies with lower prices would likely have the possibility to attract customer awareness and avoid the customer from shifting to other merchandise (Kenton 2020; Hejazinia & Kazemi 2014). In contrast, when the offered price is higher than other brands, the company would be challenged by the dropping value perception of dissatisfied customers (Jiang & Rosenbloom 2005). In other words, the service price has a positive direction with the customer attrition when a higher service price can cause higher customer attrition.

As illustrated in the diagram above, customer satisfaction would play a pivotal factor in customer churn, and it has a significant influence on customer retention, which was introduced and explained in the previous chapter. In other words, the company gains high customer satisfaction when the valuation of the customer perceived is more advanced than the customer expectations (Raab et al. 2008). High product quality and exclusive

service would raise customer satisfaction, remain existing customers to repeat purchases and minimize the customer churn (Nasir 2015).

Quality is presented as the fourth determinant influencing consumer attrition. In terms of product quality, the explanation mentions the product's accomplishment provided by suppliers that could fulfill numerous demanded standards of the buyers (Jain 2021). The quality of product primary indications from product price, brand, reliability, and product appearances provides customers' usage experience, who would evaluate the given product quality to decide either maintain to the company or shift to other beneficial suppliers (Teas & Agarwal 2000; Jain 2021). Moreover, many research papers insisted that a substandard quality would cause an adverse effect on customer satisfaction, resulting in a high possibility of customer attrition to a business. In in-depth level analysis, customers who are provided with low products or service quality will likely gain an undesirable expectation. It contributes to increasing the customer churn when the displeased customers tend to migrate to other merchandise.

Security concern would be the fifth factor, according to Hejazinia and Kazemi (2014). When a service supplier provides a lack of assurance in service, security concerns can occur to customers' experience and lead to negative customer attention (Ahmed 2019). Finally, a customer churn would be a consequence of the company's deficiency in developing a security solution, providing more opportunities for customers to accept competitor offers.

Furthermore, many studies found that customer attrition of a firm could be affected by competitors in the same industry who can supply superior and cutting-edge technology to customers (Ahmed 2019; Hejazinia & Kazemi 2014). It is an indisputable fact that potential customers are attracted by suppliers who could offer superior service at a minimal price. Especially in an extraordinary competition, there are various preferences for customers to switch from an original supplier to another merchandise. To be more precise, when customers are magnetized by superior technology competitors, it leads to the decrease of customer satisfaction with the regular firm and increases the customer attrition shifting to other beneficial suppliers.

The last determinant impacting customer churn is presented as advertising, which is determined as encouragement of ideas, products, and services combined with a fee (Kotler & Armstrong 2000). To build a consistent assumption for customers to decide the future trading suppliers, various firms prefer to apply advertising into the business strategies. By using a good advertising approach, an organization has more advantages to attract loyal buyers and dismiss customer attrition (Hejazinia & Kazemi 2014).

After having defined all seven determinants that could negatively or positively affect customer churn, a firm will be well-equipped to gain a holistic prospect in customer attrition. Moreover, a formula displaying the way computing customer churn rate over designated stages will be introduced in the next section, which will be considered as the fundamental for the investigation of customer attrition analysis of Dermoshop Oy in the following chapter.

3.3.3 Customer attrition rate, CCR

Being specified as the principal metric for business, which indicates the company's performance in maintaining existing customers, the customer attrition rate is an adverse metric with customer retention rate. The higher the customer retention rate, causing the lower the customer attrition rate (Smith 2020). According to Bonnie (2020), if there is a possibility to decrease the customer churn rate by 5%, the company profitability can increase by 75%. These metrics play a crucial role in assisting the company in forecasting the company's growth in revenue or adjust endeavors to improve the firm performance. The defined period is flexible and adjustable to calculate customer attrition rate, depending on the company objectives and strategies. For example, to evaluate the firm's long-term vision, the annual or quarterly calculation can be examined. In contrast, it is suggested to apply monthly basis calculation to track the business performance with short-term campaigns. Furthermore, the given formula below will illustrate the method calculating customer attrition rate for a business (Smith 2020; Emily 2020; Frankenfield 2021; Bonnie 2020).

$$\text{CCR} = ((\text{CB} - \text{CE}) / \text{CB}) \times 100 \quad (2)$$

CB: Customers beginning of given period

CE: Customers end of given period

By applying the formula, firstly, a total number of customers at the end of the period is extracted by the total number of customers at the beginning of the given period. The result is defined as the total of lost customers within the same given period. After that, the figure of total lost customers will be divided by total customers at the beginning of the period and multiply by 100 to achieve the final proportion, demonstrating the customer attrition rate of the firm. According to Farley (2020), it is an acceptance with the typical adequate monthly churn rate from 3-5%, depending on the company's size mainly. In other words, the company size and the customer attrition rate are two inverse metrics as the superior the business size, the inferior the target customer churn rate.

Finally, previous chapters and this chapter have introduced and explained the customer retention rate and customer churn rate; understanding and controlling both metrics would support the firm in enhancing the company performance. The following chapters would concentrate on Dermoshop Oy to evaluate customer retention rate and customer churn rate. After that, a comparison between two metrics over the same periods will be implemented to recognize the special occasions when the firm gained more new customers, maintained existing customers, and dropped the most customers. By noticing the critical features with the provided information, an investigation would help Dermoshop conduct the most suitable strategies in future operations to maximize customer retention, minimize customer churn and enhance company profitability.

4 METHODOLOGY OF THE STUDY

The research study will concentrate on research methodology in this fourth chapter, illustrating how the author constructs a statistic to ensure conclusive and trustworthy results, supporting the research purposes and research objectives. To be more specific, the initial section will be introduced with the research method by presenting and explaining how to conduct the analysis and provide a description of the Business Intelligence at Dermoshop Oy. Accordingly, the data collection method, sample selection, data analysis will be presented later in this chapter, while the limitations and outliers' presentation will be explained in the last section.

4.1 Research method

The research method consists of three main types of research methods: *Qualitative research*, *Quantitative research*, and *Pragmatic research* (Ilyas 2017). Each research method delivers different functions and significant contributions to the thesis paper to achieve the targeted objectives. *Qualitative research* is introduced as a disorganized methodology working with transcribed documents, transcriptions of personal discussions, or group interviews, determining to generate insights and understanding in a study sample (Grossoehme 2014). In comparison, research in the quantitative method could be defined as a procedure that evaluates the data and applies many statistical examination types to investigate the final results and create the perception (Babbie 2010; Creswell 2009). Moreover, there is a combination of these two mentioned methods, which is *Pragmatic research*, could be an alternative to support the research paper in achieving the final objectives.

In this study, the quantitative method will be introduced as the primary method to be emphasized, which includes an investigation of existing customer sales data derived from the Dermoshop' Business Intelligence system. By analyzing the customer transactions dataset, the calculation of customer retention rate and customer attrition rate will be implemented to evaluate company performance in maintaining the existing customers and dropping customers during a designated period. In this case study, the period is defined to be six months. Moreover, the aspect of Business Intelligence of Dermoshop Oy will be

described in the next section before implementing further investigation of a firm's customer data.

As was mentioned in the previous chapter, this research intends to support Dermoshop's more advanced conclusion to evaluate the success in maintaining existing customers by computing the proportion of customer retention and customer attrition. After that, the firm can recognize the business insights behind these obtained figures, such as comparing a total remaining customer and the total number of lost customers during the same period. Furthermore, it is possible to highlight the certain occasions when Dermoshop can remain the most customers repeating purchases or events when they were challenged by the highest customer churn. Therefore, understanding the hidden reasons affecting customer retention and customer attrition can assist the firm manage in customer relationship strategies, prepare a suitable plan for improvement, minimize the predicted risks, and build highly competitive advantages in the cosmetic industry.

4.2 Introduction of Dermoshop' Business Intelligence system

With the high-speed development of technology, most companies refer to integrating business management software into the internal operational system and minimizing human interference. Regarding business process management software, Soliman and Karia (2015) defined that Enterprise Resource Planning (ERP) is a software package that would be determined to supply and develop diversified business functions. A firm is authorized to manipulate the system of integrated utilizations to operate the business and create the automation of several back-office operations, which are associated with technology, services, or human resources management. Soliman and Karia (2015) noted that "ERP system could include software for manufacturing, order entry, general ledger, accounts receivable and payable, purchasing, warehousing, transportation, and human resources.", but there are several disadvantages with the assembled information in ERP system. A possible explanation is that it would be strenuous to modify the system's existing data and marginally incompetent to be utilized in the report. As a result, many studies found that massive companies would pursue to use Business Intelligence to gain more advantages in manage the business operations and minimize the difficulties developed from ERP or CRM software (Phocas 2021; Watson & Wixom 2007). According to Pratt and Fruhlinger (2019), Business Intelligence presents the program and

services which implement the data transformation into understandable insights acknowledging an organization to make decisions in business future strategies. While ERP can operate back-office duties, provide a firm with a particular operational aspect, and improve the business processes, the BI system such as DL BI Prime 3000 would centralize the model on reporting. It supplies data visualization from multiple intersections and advises a firm with advanced strategic decisions through data governance, comprehensive dashboards, and advanced reporting (Bergen 2021; ERP Desk 2017). By receive more comprehensive data from BI, the company could forecast the outlook and identify aspects influencing business development.

Dermoshop Oy utilizes DL Prime 300 as the primary business intelligence software used to monitor and evaluate the company's growth periodically and achieve organizational objectives, including confidential data, especially the company's customer data. In this research, the customer retention and customer churn rate will be calculated from the data extracted from DL Prime 3000. It consists of the dashboard illustrating the company's leading performance in total revenue, total customers, invoices, and product quantities in a given period with integrated data visualizations. Furthermore, all statistical figures in the system are based on real-time data, which are revived every 3 hours. With customer data, all the customer information will be extracted, such as customer ID, customer name, the first day customers start making a purchase; the last day customers making purchases; customer date of birth, and customer transactions as necessary variables for customer retention and customer attrition rate computation.

4.3 Data collection method

For Kabir (2016), the concept of data collection is introduced as the progress of assembling and evaluating the information on the related subject in the research paper to clarify the declared research questions, hypotheses testing, and appraise the outcomes. In all research aspects, the data collection concentration is suggested to guarantee the accuracy and integrity accumulation because an accurate data collection could be a significant factor remaining the research' accuracy (Kabir 2016; Ayedun-Aluma, Ajibade & Folayan 2018). By conducting a data accumulation, the study would be equipped with comprehensive quality evidence, which enables to be converted to data analysis progress,

generating the reasonable conviction so that the stated questions would be fulfilled (Kabir 2016).

There are two broad categories of data types: *Qualitative and Quantitative*. According to Kabir (2016) and Archer (2018), qualitative data are described as non-numerical, explanatory, and nominal information, which is illustrated in the scheme of words and sentences to investigate the correlations and analyze the topic research. By utilizing qualitative data and answering the “how” and “why” of the subject, the study will emphasize the awareness, empathy, and subjective perception of the research scheme (Kabir 2016; McLeod 2019).

On the other hand, quantitative data is introduced as numerical data and can be calculated in an analytical approach with various scales such as nominal scale, ordinal scale, interval scale, or ratio scale. The objectives of analyzing quantitative data are examining the correlations between variables, implementing target forecasting, and investigating the generalization to broader populations (McLeod 2019).

Besides, when mentioned the sources providing data to implement the data collection, there are diversified sources, including *primary data* and *secondary data* (Mahto 2011). Primary data is mentioned to have a significant effect on the research trustworthiness as it is gathered from the sources such as experiments, surveys, questionnaires, observations, or private interviews, which could not be altered and have high reliability (Kabir 2016; McLeod 2019; Ajayi 2017). Secondary data is defined as data that has been declared in specified schemes in the past (Ajayi 2017). In other words, various sources are suggested to accumulate from books, records, biographies, newspapers, online articles, online journals, and organization databases to gather secondary data. Secondary data has its significance and conquers the difficulty when gathering primary data in certain research situations (Kabir 2016).

In this research paper, the data collection would be implemented by gathering and analyzing the quantitative data extracted from Dermoshop’s Business Intelligence system under the databases. The data will be pulled into three types of Excel files which will be displayed in Appendix 1, 2, and 3. One Excel file will include the data of total customers from the initial stage of Dermoshop in 1985 until 31st December 2020. The other five

Excel files contain the information of customers who made purchases in five different periods. After deriving the secondary data from the BI system, Jupyter Notebook would be the primary mechanism to implement the data cleaning and data modeling to capture the pre-final results, which will be provided to Excel to calculate the final customer retention and customer attrition proportion. According to Project Jupyter 2021, the Jupyter Notebook is described as a non-charge, publicly available, collective web application for users to generate and distribute documents. Moreover, there is a wide range of functions with Jupyter Notebook depending on the different organization's objectives. These functions include cleaning and transforming the data, simulating the numerical data, implement statistical modeling, visualize data, or applying machine learning to identify patterns and support decision-making with minimal user interference (SAS 2021; Perkel 2018).

4.4 Sample selection

As was mentioned in the previous section, the raw database would be withdrawn straight from the Business Intelligence database under seven Excel files.

There are three types of data files. One file contains customer data from 1985 until 31st December 2020 to calculate Customer retention, including various variables such as Customer code, Name, Premium, Created Date.

The second document type presents the customer sales data in various assigned periods within six months, consisting of several variables such as Customer code, Name, Birthday, Created Date, Total Sum, Invoices, Products, and Average. Combining customer data from these two types of documents can examine the customer retention rate of Dermoshop in various stages.

The third document type providing data for computing the Customer Attrition rate includes the customer information who have postponed purchasing at Dermoshop with specific last purchase date. There are diversified variables included in the document, such as Customer Code, Name, Premium, Created Date, and Last Sales Date. The example of three types of datasets is mentioned in Appendix 1, 2, and 3.

From 1st June 2018 to 31st December 2020, every six months should be grouped as a period, resulting in five different timeframes:

The first period: 1st July 2018 to 31st December 2018.

The second period: 1st January 2019 to 30th June 2019.

The third period: 1st July 2019 to 31st December 2019.

The fourth period: 1st January 2020 to 30th June 2020.

The fifth period: 1st July 2020 to 31st December 2020.

At Dermoshop, customers who made purchases equal to or more than two times within a financial year will be recognized as potential and profitable customers, explaining why 6-months period is the most reasonable option for customer retention and customer attrition rate formula. These mentioned variables classified in the files will be illustrated and described with further information below.

Customer code: every customer has a distinct code, which will be the primary key to recognizing the customer if there is a duplication in customer names. The customer code can connect with other variables within the database to monitor the customer sales, customer status, or product analysis.

Name: customer name.

Birthday: customer date of birth.

Created Date: the first date when a customer registered at Dermoshop.

Last Sales Date: the last date when a customer made the last purchase and stopped.

Total Sum: total sales amount of a customer over a period.

Invoices: total invoice of a customer in the defined period.

Products: the number of products that customers purchased over a period.

Average: average purchase value of each customer.

Premium: customer status in the BI system. At Dermoshop, there are three main types of customers: A, B, and C depending on the purchase value.

4.5 Data Analysis

This section follows from the previous section, concentrating on analyzing the raw figures extracted from the BI system. Customer sales data will be exported to seven files from DL Prime 3000, which will be imported to Jupyter Notebook to implement the data cleaning and data modeling.

Regarding customer retention analysis, in the first period from 1st July 2018 to 31st December 2018, the total existing customer at the beginning period will be defined and extracted. First, the query is executed to extract the list of the total existing customer at the beginning of the first period with the “Created Date” which is equal or earlier than “30-06-2018”. After that, it will be merged with the list of total customers purchasing in the same period based on the primary key “Customer Code “, with the list is contained in the period Excel file.

After conducting the query on Jupyter Notebook, the result, illustrating the total existing customers remaining and making purchases during the first period, will be divided by the entire existing customer at the beginning of a period. Then it will be multiplied by 100 to get the customer retention rate for the first period from 1st July 2018 to 31st December 2018. By applying the same technique to calculate the customer retention rate of the first period, the customer retention rate of the four following periods can be examined and computed to complete the target objectives of this study.

Regarding customer attrition analysis, the calculation progress will apply the same periods with customer retention rate to compare two metrics: customer retention rate and customer churn rate. There is likely an identical technique to calculate the customer churn rate among different periods, which will be described with further information.

In the first timeframe from 1st July 2018 to 31st December 2018, the total existing customer at the beginning period is extracted in the same way as the customer retention part. The “Last Sales Date” variable will be executed to extract the list of customers who have made the last purchase equal or more one year than the first date of the designated

period. To be more specific, the discontinued customers in the first period are customers with the “Last Sales Date” equal or less than “30-06-2017”. By extracting the list of stopped customers within the first period, the result will be divided by the total existing customer at the beginning of a period and be multiplied by 100 to achieve the final rate of customer attrition from 1st July 2018 to 31st December 2018. Furthermore, the calculation of customer churn rate in the five subsequent stages can be conducted identically as the first-mentioned period.

As a sequel, the calculated results about customer retention and attrition rate in the data analysis will be illustrated and explained in the next chapter to conclude the investigation, determine business insights, and present the final recommendations to Dermoshop.

4.6 Limitations and Outliers

When implementing the data analysis, there are numerous limitations and outliers which occurs from internal business operation. Research limitation is defined as a standardized partiality of research design that the researcher could not manipulate, impacts the analysis and outcomes of the investigation (James & Judy 2014). A research paper might include various limitations, which are the consequences caused by the small sample size, inadequacy in trustworthy and accessible information, shortage of prior investigation on the research topic, or the techniques supported to data collection. Consequently, it generates several disadvantages to the external validity of the research outcomes (Price & Murnan 2004). When the study limitations are not mentioned or partially specified in the research plan, it will lead to substandard knowledgeable research readers and diminish outcomes' credibility. Therefore, many studies have noticed that it should be essential for researchers to recognize and introduce the research limitations as a crucial part of the investigation report (Ioannidis 2007; Kinloch 2020).

In this study about customer retention and customer churn rate of Dermoshop Oy, the limitations were the elimination of customer sales data before 1st June 2018. The data over that period was re-arranged and converted to the data warehouse as a backup dataset because of internal reasons. With the lack of customer sales data, there is a minor possibility to make a comparison of customer retention and customer attrition rate between the current period with different timeframes in previous years before 2018.

Furthermore, comparing customer retention rates between the latest financial year with more prior years, such as from 2017 until 2020, can support the firm to identify the current situation and evaluate the company's performance. Although the mentioned research limitations, the assembled dataset still ensures effectiveness when the research paper concentrates and analyzes the data from 1st July 2018 to 31st December 2020 to conduct the customer retention and customer attrition analysis.

As regards outliers, Cousineau and Chartier (2010) determined that outliers are distrustful figures or data points illustrating the significant difference with the massive majority or population. Minor outliers would likely be the main reason distorting the final research outcomes by adjusting the mean value of the dataset, skewing the direction of distribution, and resulting in difficulty in data analysis (Frost 2021). As outliers can lead to deleterious influences on an analytical investigation, it is recommended to implement outliers' elimination out of the dataset or modify the outlier into the mean or median value of the dataset (Ferguson 2018).

In the customer dataset of the Dermoshop system, existing outliers have influences straightforwardly to the further research, which are invalid values in the "Birthday" variable, when a customer didn't provide the birthday information, causing the null value in the variable. Furthermore, if the "Quantity" and "Average" variables illustrate the negative figures, they can be mentioned as outliers. However, these outliers can not cause significant influences on the final results in this study because "Customer code" will be used as the critical variable to recognize and identify the customer to evaluate, and it is not affected by these mentioned outliers. As explained in the previous chapters, this research's target objectives are to identify and assess the customer retention rate and customer churn rate, explaining why the occurred outliers would not affect straightforwardly to the outcome. Otherwise, if further research conducts an advance analysis about the customer's customer demographic or stopped customer, the investigation needs to eliminate or adjust the outliers to prevent the final results from being misleading.

This chapter has been introduced the methodology of the research study with the description of the research method and data collection method, which are used to collect and analyze data in the case study. Furthermore, the data analysis part introduced the

progress and explained how to interpret the original customer dataset to achieve the target customer sales figures. After calculating customer retention rate and customer attrition rate, the next chapter, Empirical findings, will illustrate the investigation outcomes with the in-depth analysis from the Dermoshop Oy perspective.

5 EMPIRICAL FINDINGS

Previous sections have introduced the methodology to calculate customer retention rate and customer attrition rate in general and apply it to Dermoshop Oy. In this chapter, the research concentration will centralize the research outcomes and thoroughly analyze them to explore the business insights behind the accomplished figures. However, according to the company's desire, the specific numbers and detailed explanations in research results and research analysis section will not be published.

5.1 Research Results

The research outcomes section consists of two main parts: customer retention rate and customer attrition rate results. Besides the provided figures in Table 1 and Table 2, the visualization of customer retention and customer attrition tendency over defined periods will provide the general prospect of the firm ongoing situation.

5.1.1 Customer retention rate results

Regarding the customer retention rate of Dermoshop Oy, Table 1 below provides the customer retention analysis outcomes in five previous periods, and each period includes six months within a defined year from 1.7.2018 until 31.12.2020. The table consists of 6 variables:

Period: illustrates the starting point and the ending point of the designated period.

The total customer at the beginning: the total number of acquired customers at the beginning of the period.

New acquired customers: the total number of new over a period.

Total customers purchasing: the total number of customers who made purchases over a period.

Total existing customers purchasing: the total number of old customers who retained to repurchase products over a period.

Retention rate: the proportion of total old customers remaining to repurchase in total customers at the beginning.

Table 1. The customer retention rate of Dermoshop Oy.

Figure 8. The comparison of customer retention rate between different periods.

5.1.2 Customer attrition rate results

The results in Table 2 present the percentage of customer churn in different periods from July 2018 to December 2020 of Dermoshop Oy.

Table 2 presents five key variables when “Period”, “Total customers at the beginning” and “New acquired customers” were introduced and explained in the previous section. Besides, the two remained variables will be presented:

Total customer left: the total number of customers who had stopped purchasing for equal and more than one year from the beginning of the defined period.

Attrition rate: the percentage of the total number of customers who have left in total customers over a period.

Table 2. Customer attrition rate in different periods at Dermoshop Oy.

Figure 9. Customer attrition rate in different periods.

To be more precise, with the figures from customer retention and customer attrition rate of Dermoshop, a firm has proved convincing evidence in monitoring the customer relationship management. In other words, they are successful in retaining existing customers, acquiring new customers, and preventing customers from dropping purchases, especially in the period from 1.7.2020 to 31.12.2020.

5.2 Research Analysis

In the previous sections, the results of customer retention and customer attrition of Dermoshop were introduced and explained to provide an understanding of the current firm situation. The research paper will consolidate the research outcomes by exploring and investigating the business insights in this section by consuming the given results. The comparison between total customers at the beginning and total existing customers who

made purchases in defined periods with customer retention rate could be assessed in Figure 10, while the connection between newly acquired customers and total current customers who made purchases will be progressed to investigate in Figure 11. Moreover, after comparing newly acquired customers and total customers who had left a firm in specific periods shown in Figure 12, the concentration will be converted to determine the relationship between customer retention rate and customer attrition rate in defined periods that will be presented in Figure 13. However, as explained in previous part, these classified figures and analysis containing figure 10, 11, 12, 13 are not included in the published version to follow the company' agreement.

Figure 10. The comparison between total customers at the beginning and total existing customers made purchases in defined periods with customer retention rate.

Figure 11. The comparison between total new acquired customers and total existing customers who made purchases in defined periods.

Figure 12. Comparison between newly acquired customers and Total customers who had left in different periods.

Figure 13. Relationship between customer retention rate and customer attrition rate in different periods.

In terms of the relationship between customer retention rate and customer churn rate in various stages, Smith (2020) suggested that a firm with the major retention proportion would have a minor attrition rate. When analyzing the correlation between the two ratios of Dermoshop, these two metrics' trends through different periods are inverse which are illustrated in figure 13. The analysis is conducted to compare total retained customers, newly acquired customers, and two ratios throughout numerous stages, especially from 1.7.2020 to 31.12.2020. As a result, the firm performance in managing customer relationships can be evaluated to be successful in attracting new customers to purchase products, maintaining existing customers to keep loyalty to the firm, and controlling the loss of customers to achieve the target objectives.

6 CONCLUSION AND RECOMMENDATIONS

In this chapter, the research paper's centralization will present conclusions to revise the connection between the theoretical frameworks about customer relationship management, customer retention rate, and customer attrition rate with the evident case study. After discussing the summation, further suggestions for advanced research will be introduced based on the current investigation's key highlights and insights to consolidate the contemporary research observations.

6.1 Conclusion

This research study has introduced and discussed the customer retention rate, customer churn rate, and importance to e-commerce business while applying the specified theories to analyze the case company to explore the company performance in managing customer relationship. Understanding the valuable insights behind the percentage of customer retention and customer attrition can assist the firm in capturing the key milestones over a period when customers tend to maintain the purchase activities. Furthermore, an organization can recognize the events when the major new registered customers are attracted and identify when the loss of customers can be a significant challenge. By identifying customer purchase behavior in advance, the company can prevent from dropping existing customers and get more advantages in attracting new customers, conquering the total revenues, and developing the current financial situation.

After analyzing the customer relationship management of Dermoshop, the results described in the previous chapter have been emphasized that there is a period can be noticed to be the essential stage within a financial year. By noticing this critical occasion, the firm can avoid losing revenue from the lost customers and increase profitability from acquired and retained customers. After having acknowledged in prior, the company can review these retention and attrition figures to prepare a particular plan these periods. The concentration will centralize on marketing strategies to maximize customer retention and gain more value from new registered customers to achieve the target revenue covering the loss of another period within a year and enhance the company profitability in a whole year.

After observing this feature, Dermoshop can launch suitable marketing campaigns to win back the customers who have a risk of leaving the firm. Suppose a firm can notice the period occurring the peak in customer attrition in advance and prepare the initial plan to prevent the risks. In that case, it will minimize the loss of customers while maintaining company revenue with competitive advantages in the cosmetic industry.

When combining and evaluating all the given figures in the previous chapter, there was evidence illustrating that the firm was also influenced by the pandemic COVID-19. However, the figures provided evidence proving the company's ability to win back customers and repeatedly after the first pandemic in 2020. The development illustrates that the marketing campaigns in customer win back and customer retention is implemented effectively and help the company go back on track to the normal situation.

In conclusion, the reexamination of the figures provided in the case study has consolidated the research statement and emphasized the importance of customer retention and customer attrition rates, especially with e-commerce companies. To maximize the customer retention rate and minimize the customer churn rate, firms are encouraged to investigate the current customer purchase activities, concentrate on elements that could affect customer retention, and prevent the determinants from generating the extreme customer attrition rate.

6.2 Recommendations

As mentioned in the previous section, investigating customer retention and customer attrition would help the company prevent risks from dropping customers and develop the firm's profitability. The research study outcomes would recommend various related subjects suggested for further investigations corresponding to customer analysis.

After identifying churned customers who decided to postpone making purchases, further study can analyze this customer group's customer demographic with total profit. By classifying the customer demographic with the sales contribution and gather consumer information such as gender, age, marital status, and education, there are diversified advantages for the firm to conduct the customer segmentation and identify the general standard features of customers who tend to stop purchasing. To be more specific, further investigation will provide the company more in-depth information about discontinued

customer's features with customer purchasing tendency. Furthermore, the firm can identify and predict when customers tend to discontinue purchasing to launch the appropriate strategies to win back risky customers. Likewise, the additional study can combine with the computation of customer lifetime value to analyze the financial value of consumers and determine the future value created by customers to the business during the entire life. Understanding and analyzing the customer lifetime value can help the company investigate customer purchase behavior and capture potential customers (Ramachandran 2006).

By combining the analysis of suggested research and the current study, a firm can achieve an understandable outlook to conquer customer relationship management by enhancing customer retention rate, minimizing the customer churn rate, and improving profitability.

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APPENDICES

Appendix 1: The first file includes customer data from 1985 to 31.12.2020

Customer code	Name	Premium	Created Date
0000	Magaret	A	01.05.2018
1111	Bill	A	23.04.2000
2222	Emma	B	22.05.2014
3333	John	C	23.11.2020
4444	Lucy	C	24.08.2019

Appendix 2: The second file includes customer sales data in five defined periods, the table below displays the customer sales data in one period from 1.7.2018 to 31.12.2018.

Customer code	Name	Birthday	Created Date	Total Sum	Invoices	Products	Average
0000	Magaret	01.01.2000	01.05.2018	500€	45	50	11€
101010	Hellen	31.10.1998	23.04.2000	345 €	67	70	5€
2222	Emma	17.10.1992	22.05.2014	100 €	3	80	33€
23233	Mike	03.02.2001	31.12.2020	234 €	2	20	117€
54543	Michael	21.10.1978	12.12.2004	343 €	12	15	29€

Appendix 3: The third file includes customer sales data with the last purchase date.

Customer code	Name	Premium	Created Date	Last sales date
12121	Aleksi	A	23.04.2000	22.05.2014
323323	Camila	A	31.12.2020	31.12.2020
12123	Johnn	B	22.05.2014	23.11.2020
1111111	Emily	B	24.08.2019	23.11.2020
3232	Kim	C	01.05.2018	24.08.2019