

# **The impact of online product reviews from the consumer's perspective in the beauty and personal care industry**

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Master Thesis submitted in fulfillment of the Degree

Master of Science

in Management

Submitted to Dr. Christian Weismayer

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Vienna, 17<sup>th</sup> April 2023



## **AFFIDAVIT**

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## ABSTRACT

The advancement of technology, online networks and electronic commerce platforms established a new phenomenon of online product reviews. The digital phenomenon of online reviews enabled customers to create an opinion toward products before experiencing it in person. Digitalization and transformation of in-store purchasing into online purchasing through electronic commerce platforms gives customers the ability to voluntarily share their product experience with the society. Simple explanations of key product information such as product ingredients, product performance and product efficiency appeared to significantly influence the customer's purchasing decision. In fact, consumer comments, product recommendations and peer opinions developed a powerful source of information that has become significantly important for the consumer's decision-making process. This thesis aims to research the impact of online product reviews from the consumer's perspective in the beauty and personal care industry. The goal of this research is to provide a better understanding of the impact of online product reviews from the beauty and personal care industry on customer's purchasing decisions. The research question to be answered in this thesis is:

*Which online review characteristics have an impact on the customers' decision-making process?*

This research was conducted through an online questionnaire that was answered by 200 participants in total. The questionnaire analyzed which characteristics of online product reviews are meaningful for their purchasing choice. The primary data that were collected through this online questionnaire were further analyzed in R with the help of several statistical tests that tested the predefined hypotheses and the strength of relationships between the measured variables. The findings of the conducted research indicate that online review characteristics of review informativeness, valence, conformity, credibility, readability, review length, online rating and online response are significantly meaningful for the consumer's decision-making process. Moreover, participants indicated that the most significant review characteristic for them is review informativeness, followed by online rating and review readability. This research provides important managerial implications that are significant for many e-commerce managers since they emphasize the immense importance of online product reviews.

Key words: Online review, electronic commerce (e-commerce), decision-making process, purchasing choice, online purchasing behavior, beauty and personal care industry



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## **LIST OF ABBREVIATIONS**

E-Commerce – Electronic Commerce

eWOM- electronic Word of Mouth

EDI- Electronic Data Interchange





# 1 INTRODUCTION

## 1.1 Context and background of the thesis

The rapid growth of the Internet and implementation of digital technology into daily life completely changed consumers' purchasing behavior. Advanced technologies accelerated the development and usage of e-commerce marketplace and global society became keen to purchase online rather than to go into physical stores and purchase products in-person. With the rapidly growing number of Internet users online shopping websites became indispensable in the global retail environment. According to the study conducted by Statista the global e-commerce sales exceeded 5.7 trillion US dollars in the year 2022 and the number is expected to surpass even higher in the following years (Chevalier, 2022b). Genuinely, the wide accessibility of online platforms allowed customers to be free to choose from the extensive list of e-commerce websites and social media platforms where they want to purchase the desired product. Over the past years consumers enjoyed purchasing different products online and several industries were recognized as the most prominent. Those were industries of fashion, beauty and personal care, consumer electronics and household goods. Products from the beauty and personal care industry aim to be used each day and for several times in individual's routines when people take the time to take care of themselves. Frequent usage of these products transformed this industry to be massive in terms of product variety, number of brands and competitors. With so many people globally who are practicing self care everyday, marketers did not have a choice but to evolve the beauty and personal care products into e-commerce platforms and offer efficient purchasing experience to the global customers.

The phenomenon of online product reviews emerged from the human habit of purchasing online and became a very popular source of information for customers and marketers (Changchit et al., 2020). Recently, more and more consumers are consulting online reviews prior to the purchase. Online product reviews are explained as customers' individual opinions and product experience that they voluntarily and enthusiastically share with the society through the online network (Purnawirawan et al., 2012). This phenomenon is rising in popularity in society, and it tends to create a huge amount of significant data that reflect product evaluation and recommendation from people that have already purchased and used the product. Product evaluation often entails product quality, usability and customers' overall satisfaction and

opinion of the whole purchasing experience. Also, in online reviews customers might share their recommendation for the product and include appropriate substitutes that are worth purchasing and experiencing. Therefore, the purpose of the online reviews is to enhance the accuracy of customers' perception about a product, reduce the risk of purchasing in the decision-making process and improve customers' useful contribution to the website and data collecting (Kumar & Benbasat, 2006).

Over the last few years economists have experienced that this phenomenon has become so popular that it has more significant influence on customer's purchasing decision than any traditional marketing campaign had (Bickart & Schindler, 2001). The reason behind this claim is that society finds online reviews more trustworthy and unbiased compared to any traditional marketing communication. Among the variety of beneficial functions that online reviews of beauty and personal care products have, the most prominent appears to be its impact on consumers' perspective toward the product while making a purchasing decision. One of the most evident reasons for customers using online product reviews in the decision-making process is because of the evident level of notable usefulness of the huge amount of helpful product information that is easy to understand and apply in product experience.

## **1.2 Research question and aim**

The research about the impact of online product reviews from the beauty and personal care industry on consumers purchasing decisions in Europe is scarce. Economists have conducted numerous studies about online consumer behavior and influence of online reviews on purchasing behavior, but very little studies investigated its effect on the consumers that are purchasing products from the beauty and personal care industry. Notably the context of characteristics of online product reviews is lacking further research. The goal of this research is to provide a better understanding of the impact of online product reviews from the beauty and personal care industry on customer's purchasing decisions. More formally, this thesis aims to investigate the characteristics of online reviews that impact customers to purchase a product. The objective of this research is to detect if there are specific characteristics of online product reviews that impact customer's behavior. The phenomenon of online product reviews significantly benefits customers as much as it benefits marketers, brand reputation and brand

image in the global society. Therefore, this thesis will provide recommendations for marketers in Europe on the effectiveness of reviews in the scope of the beauty and personal care industry. In fact, this study is highly interesting for marketers competing in the digital environment because online product reviews may significantly increase profitability of the product and raise brand awareness (Wang, 2015). The central research question of this thesis is:

*Which online review characteristics have an impact on the customers' decision-making process?*

To answer the central question of this thesis a quantitative approach will be applied. An online questionnaire will be created and distributed through different online platforms in order to gain answers from the online audience.

### **1.3 Structure of thesis**

This thesis consists of the six main chapters. These are introduction, literature review, methodology, results, discussion, conclusion and recommendation. Each of these sections consists of comprehensively analyzed literature and research details that contribute to thoroughly analyze the topic of this thesis. This thesis starts with the introduction chapter that provides a brief outline of the topic and background information that support better understanding of the research aim. In the introduction chapter, the goal of the thesis is stated as well as the central research question which research aims to answer. Additionally, this section explains who may find the topic of this research specifically interesting. The introduction chapter is followed by the chapter of literature review where a broad overview of already existing literature and key definitions of the main concepts and theories related to the topic of this thesis are presented. The literature review will discuss the retail transformation that happened over the years and which brought the e-commerce platforms into business and society. Also, the phenomenon of online product reviews will be briefly analyzed as the vital information that supports customers choice and online purchase behavior. To understand the concept of online purchasing behavior the author will briefly explain the concept of online search behavior together with the prior and post purchase customer behavior. In addition, an overview of the beauty and personal care industry will be elaborated. In the end of this section the conceptual framework is provided with the hypotheses of this research. After the literature review chapter, the appropriate type of methodology for this research is discussed. In this chapter the research

design will be identified and the survey design will be explained in detail together with the ethical principles of the research. At the end of the methodology chapter the data collection will be noted and the analysis of data will be presented. Following the methodology chapter results of the conducted research will be stated and explained with the use of tables and diagrams created in Excel and R in the chapter of results. The next chapter of this thesis will be the discussion section where findings of conducted research and hypothesis testing will be discussed. The whole thesis will be summarized in the chapter of conclusion whereby conclusions from the conducted research will be drawn and managerial implications and advice will be noted. Lastly, limitations of the research will be identified and suggestions for the future research will be discussed in the conclusion chapter of the research.

## **2 LITERATURE REVIEW**

### **2.1 Introduction**

The following chapter will discuss the relevant literature and analyze the concepts and theories which are needed in this study to properly answer the research question. First, to create a link between online product reviews and online customer behavior, the activity of online shopping will be explained as well as the phenomenon of electronic commerce and social media platforms. The author will briefly analyze both phenomena and explain the act of purchasing through these platforms as well as writing a review on online platforms. Followed by the brief introduction to the concept of online reviews and how electronic Word of Mouth (eWOM) has a significant influence on the customers' purchasing decision. Under this part of the literature the author will explain how an online product review functions and what are important characteristics of online reviews to consider when analyzing a review. The third part of the literature will analyze the consumers' search behavior in the digital environment and how customers behave online. The last part of the literature will study the beauty and personal care industry and its connection to the online environment and online reviews of beauty and personal care products. Centrally, through the analyzed literature in this chapter the author will study the impact of online reviews on the purchasing decision and characteristics of online products that interest customers to purchase a product. At the end of the literature review, the conceptual framework will be presented and hypotheses will be set up in order to answer the research question of this study based on the reviewed literature and theory from this chapter.

## 2.2 Online shopping

Business world and society have witnessed historic changes with the advancement of the Internet. This invention enabled users to share a huge amount of different data and introduced society to the activity of online shopping. Economists explain online shopping as the process where customers directly purchase goods or services from the seller on the Internet platform, without any other person or intermediary service (Anitha, 2015). The widespread use and high efficiency of online shopping affected fast development of many electronic commerce (e-commerce) platforms that successfully replaced physical in store-purchasing. As a matter of fact, e-commerce platforms are very popular considering a Statista report (Chevalier, 2022b) that indicates that the worldwide e-commerce sales in the year 2022 were 5.7 trillion dollars. According to Statista (Chevalier, 2022b), figures are estimated to grow even more in the next years and reach approximately 8.1 trillion dollars by the year 2026. Researchers argue that justification for future increase in e-commerce sales can be given by immense market potential and serious prosperity of e-commerce power houses such as Amazon, Alibaba, Tenecent and Groupon (Lim et al., 2016).

Online shopping achieved significant upgrades in efficiency and availability with the advancement of smartphones and other Internet-enabled devices such as laptops and tablets (Tang et al., 2021). KPMG (2017) noted the high importance of smartphone devices for customers' online shopping. With the advancement of technology devices, customers can reach websites of e-commerce houses anytime they want and read all product details as many times as they want without any interruption or restrictions such as opening hours of a physical store. Within the new concept of online shopping customers purchasing behavior significantly changed and digitalized. In fact, KPMG (2017) discovered that 77 percent of consumers in the United States who chose to shop in the physical store still used their smartphones to research information about products and evaluate online product characteristics while purchasing offline. Today, customers search on a wide range of e-commerce websites and first gather information and compare products in terms of price, characteristics and after the research they purchase the best option (Wu et al., 2014).

The wide range of options and variety of products available within online shopping websites formed a massive audience of global customers with different consumer preferences in different age groups (Anitha, 2015). As reported by Anitha (2015), the age of consumers plays an

important role in online shopping. Anitha's (2015) study suggests that consumers who are within the 25-35 age group dominantly prefer the activity of online shopping, followed by consumers under 25 years old, while consumers above the age of 35 appeared to be less interested in purchasing online. The reason behind this evidence is different needs of young consumers and higher interest in adopting new technology innovations (Anitha, 2015).

Customers' motivation to shop online emerges from several important benefits of online shopping. First, the enhanced flexibility of online platforms and convenience of shopping online are of significant importance for customers because they can make a purchase whenever they want and wherever they are, without having to plan or contact the firm or any third party. Another important point of online retail platforms is that it offers the audience larger access to products in terms of a larger stock and often more colors and shapes that cannot all be presented at once in physical stores. Jain et al. (2021) emphasized the importance of time saving for both customers and businesses. Namely, customers save time as they do not have to go to the store and wait in line while businesses save time in terms of speeding up the selling process and saving time and money to transport products to stores (Jain et al., 2021). Online retail platforms provide customers the opportunity to see different product options from different price ranges and compare many items at the same time without having to ask someone to explain to them the usage and application like in physical stores (Taher, 2021). Another benefit of online shopping for customers and a significant factor that motivates customers to purchase online are the huge amount of product information and data that are available for customers in the online platforms. Here customers do not only see relevant details about products but also subjective reviews, comments, experiences and recommendations from global customers (Taher, 2021). Electronic platforms store this kind of information and make it available for anyone to read and research whereby this option is not provided in physical stores. Therefore, it is often discussed that customers shop online to reduce the perceived risk of purchasing the product that is not useful or does not function in the way the customer would experience it.

Even though globalization brought many changes that society was eager to accept and apply in daily life, trust in the online platforms and online payment transaction still seems to be an issue and misunderstanding for many people. When customers shop online, they pay money via electronic payment systems and society often lacks confidence in these transactions. Even if people gained experience as the time passed, they have failed to gain enough trust for the online payment methods. According to Mittal (2013) online trust is vital in forming a relationship between customers and online shopping platforms. Namely, economists argue that online trust

is at a lower level of confidence from the consumers' perspective than physical stores (Cassell and Bickmore, 2000). Trust in the environment of online shopping platforms is measured by the extent of how much security and privacy a specific webpage can provide to customers (Mittal, 2013). Trustworthiness to customers is often given from highly technical and well-known brand websites, popular electronic powerhouses that provide credible information, customer service contacts, location of available office and contact numbers (Mittal, 2013). All this information increases perceived customers' trust in a way that they believe the online business exists and it is secure and private (Cassell & Bickmore, 2000).

Online shopping is growing in popularity with every day and the future of the traditional so-called 'brick and mortar' stores is seriously threatened. Schwartz et al. (2002) noticed that customers tend to choose the mode of shopping based on the criteria which of the two modes fulfills their shopping wants and needs the most and maximizes their satisfaction in purchasing. Some portion of global customers still prefer to evaluate products in person and favor the 'brick and mortar' shopping mode, while others claim online shopping is more convenient (PWC, 2016). Recently, consumers' purchasing decisions have no limits in time and place considering the fact that customers can purchase directly online or go to a store and purchase the item physically, but they can also in some cases go to an offline store and purchase the item online later on (Shi et al., 2019). The competition between e-commerce platforms and traditional shopping became even more complex with social media getting features of a retail platform. In order to properly understand the relevance and function of e-commerce and social media platforms in the scope of online shopping and product review, it is essential to define them.

### **2.2.1 Electronic commerce**

Electronic commerce is often referred to as 'e-commerce' and represents an Internet website for buying and selling goods and services (Jain et al., 2021). The word 'commerce' stands for the transaction that is conducted and 'electronic' emphasizes that the activity is done over a digital network (Khan, 2016). On the e-commerce website huge varieties of digital goods are presented to global customers and they can read more about a product, look at the digital product photos and if they chose to purchase the item pay it electronically by credit card, debit card or electronic fund transfer (Jain et al., 2021). Widespread use and availability of the Internet enabled consumers to purchase outside of their local borders and purchase from the global market.



Moreover, e-commerce offers an advantage of expanding the number of participants in the international value chain as well as the open market access and improved market efficiency (Le Tan, 2017). While purchasing online customers can easily switch between different e-commerce websites and compare the price, features of items and find product substitutes (Khan, 2016).

E-commerce history starts from the early 1960s when companies discovered Electronic Data Interchange (EDI) and started using it in their business (Lukman et al., 2023). The primary use of EDI was to share documents with other organizations and later in 1979 American scientists have developed a universal standard for organizations to share their documents via the electronic network (Lukman et al., 2023). As a matter of fact, the creation of Amazon and eBay platforms completely transformed the retail industry. According to Lukman et al. (2023) after the invention of these electronic commerce websites consumers very quickly adopted them in their purchasing behavior and started ordering huge amounts of items online.

E-commerce transactions can be conducted between different parties. Even though e-commerce is gradually presented as individuals ordering products from businesses, there are vast numbers or different trading types that can happen online and under the name of e-commerce (Figure 1). In general, electronic trading happens as business-to-business, business-to-consumer, consumer-to-business, consumer-to-consumer, business-to-administration and consumer-to-administration (Jain et al., 2021). Business-to-business electronic commerce refers to transaction and trading that happens between companies, while consumer-to-consumer includes all trade of goods or services between consumers (Jain et al., 2021). Business-to-consumer illustrates the most popular and widely present type where companies offer products on online platforms and customers purchase the desired products via specific websites. This trading experience represents the conventional retail experience that takes place very often (Jain et al., 2021). On the other hand, consumer-to-business trading happens often in terms of exchanging the service where customers offer services to companies. The example of this type of e-commerce is present in crowdsourcing companies as well as customers selling already used items to businesses (Jain et al., 2021). Business-to-administration includes transactions that happen in-between firms and government and examples of these are taxation, legal documents, etc. (Jain et al., 2021). Lastly, consumer-to-administration e-commerce refers to transactions between government and consumers. Examples of these are consumers purchasing insurance, booking appointments and payments (Jain et al., 2021).

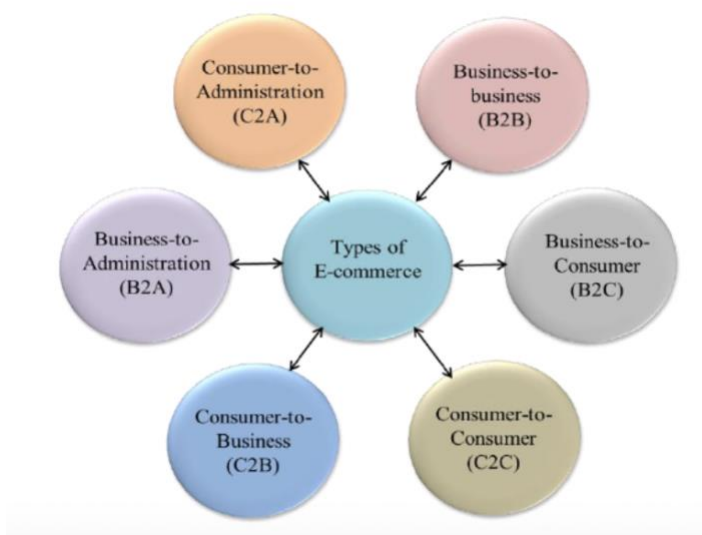


FIGURE 1: TYPES OF E-COMMERCE BASED ON THE TRADING CHARACTERISTICS (JAIN ET AL., 2021, P. 667)

The invention and adoption of e-commerce into society brought the retailing transformation. Society has undergone the shift of using their mobile devices to search, compare and purchase products or services needed. According to the study of Statista (Chevalier, 2022a), smartphone devices generated the most visits to retail websites and made the most orders in the year of 2022. Namely, more than 63 percent of global orders were made through smartphone devices. While only 35 percent were made through desktop devices and 2 percent via tablet (Chevalier, 2022a). In addition, Chevalier research (2022a) noted that 73 percent of global traffic share was generated from smartphones while 25 percent was generated via desktop devices and only 2 percent via tablet. This data can be explained by the fact that people spend a significant amount of their time each day on smartphones, and they tend to carry their devices throughout the day wherever they go. Because of this habit, it is understandable that people will create an order and traffic on websites via their smartphones as it is the most convenient and quick way for them to use their free time and place an order or research for a product.

## 2.2.2 Social media platforms

To properly understand the huge impact that social media platforms have on society it is necessary to define this digital phenomenon that revolutionized global communication. Social media was created with the Internet advancement and it is defined as the electronic networking space where people communicate and share information, photos and videos with their audience who are called 'followers' (Wang et al., 2020). Over the last few years social media became very popular and people tend to use it multiple times per day in the form of different platforms. Today as the number of Internet users grows so does the number of social media users. For a long time, it was believed that young generations who are in the age group 16 to 40 years old are the primary users of this platform, but lately a lot of users that are from older age groups tend to use it on a daily basis as well (Manan et al., 2020).

The most popular platforms that society currently uses are Instagram, YouTube, TikTok, Twitter and Facebook. All of these platforms can be used by individuals, groups, organizations and businesses. Today most people have multiple social media applications and accounts that are usually approached from their mobile device. But these platforms can also be reached via desktop devices and tablets. The ability to reach huge amounts of audience within a few posts and form engaging communication with followers has influenced many companies and brands to create their official profiles on social media platforms. Marketers followed customer's trends and needs and thereby enabled customers to purchase products on social media platforms through the function Instagram Shop. Namely, frequent use of social media platforms from global customers significantly accelerated the influence that these platforms have on users and brought many new potential opportunities to the market (Bruning et al., 2020). One of the most prominent characteristics of social media that is also its competitive advantage towards traditional media channels is the interactivity (Shen & Bissell, 2013). Social media has the outstanding feature of connecting brands and people in an interactive way where customers can disclose their opinion and purchase products and firms can directly answer to customers' choices and opinions.

Social media has different types of sites that are available for society to be used. This digital phenomenon consists of social networking sites, news sharing sites and blogs. All these platforms differ from one another with their unique features and have a different audience that uses these platforms and engages in the content that is shared within that platform. Lately, the Instagram social networking platform is very popular to be used in personal and business practices. For personal usage people use it in a way of sharing their memories, travels and recommendations with their friends and followers. In terms of business usage, firms and brands

use it to reach an extensive number of audience, communicate with customers, read their comments and interactively engage with customers, advertise their products and announce new product launches. As a matter of fact, social media websites became essential in distribution and storage of huge amounts of information (Muntinga et al., 2011). The unique opportunity that this platform offers to society is to share an opinion and distribute eWOM throughout the global network (Pütter, 2017). This key feature helped many marketers to develop brand awareness and economists lately discuss the immense effect that social media has on consumers' choice (Pütter, 2017). The availability for everyone to share their opinion and leave a subjective comment in discussions created a potential damage for any brand's image that company aims to create in the society (Pütter, 2017). As much as positive comments and posts influence consumer's desire and choice, so do the negative comments about products. Opinions that are shared via social media platforms cannot be controlled by any company and therefore customers find these reviews trustworthy (Pütter, 2017). Consumers often consider it important that they have the ability to participate in these discussions under a product post and to share their opinion with the world no matter if the post was published by an individual or by the company itself. The more comments and the more 'buzz' are created under specific posts, the more information is collected and more people are aware of the product. Additionally, high engagement of consumers in a specific post tends to encourage readers to find more about the brand and get interested in products that brand offers (Pütter, 2017).

The digital phenomenon of social media has a significant effect on marketers' strategic approach toward customers (Pütter, 2017). Therefore, it is more than understandable that approximately 93 percent of firms that are competing in the global market use one of the types of social media channels that are available (Shen & Bissell, 2013). Social media users tend to believe that content that is created on these platforms by different customers is honest and truthful. The high level of credibility that customers perceive toward this content suggests that customers are eager to accept social media recommendations and have the confidence in making a purchasing choice from the information they gathered on these platforms (Manan et al., 2020). The revolution that was brought to marketing with the high usage of social media platforms transformed a high share of brands' advertising into social media content that is created either by the brand or influencers who were paid to review products from the brand or voluntary customers. According to a Statista Research Development (2022) study, social media benefits marketers' in influencing customers to make a purchasing decision (Figure 2). The advantage of social media platforms with the highest value for business practices is the increased exposure of having all social media active users as potential customers. Namely, increased exposure results in 85 percent and it is

followed by the benefit of increased traffic that counts 75 percent. Next advantages of social media platforms for marketers are noted to be generated leads with 66 percent, possibility of creating loyal fans resulting 58 percent and improved sales of the business count 57 percent of benefit of using social media for business purposes (Statista Research Development, 2022). All these benefits brought significant influence on the perception of social media users' regarding many topics but especially customers' purchase intention. The high number of social media users is growing everyday with an increasing number of the global digital community and economists argue that social media will continue to be a trend as well in the future (Pütter, 2017).

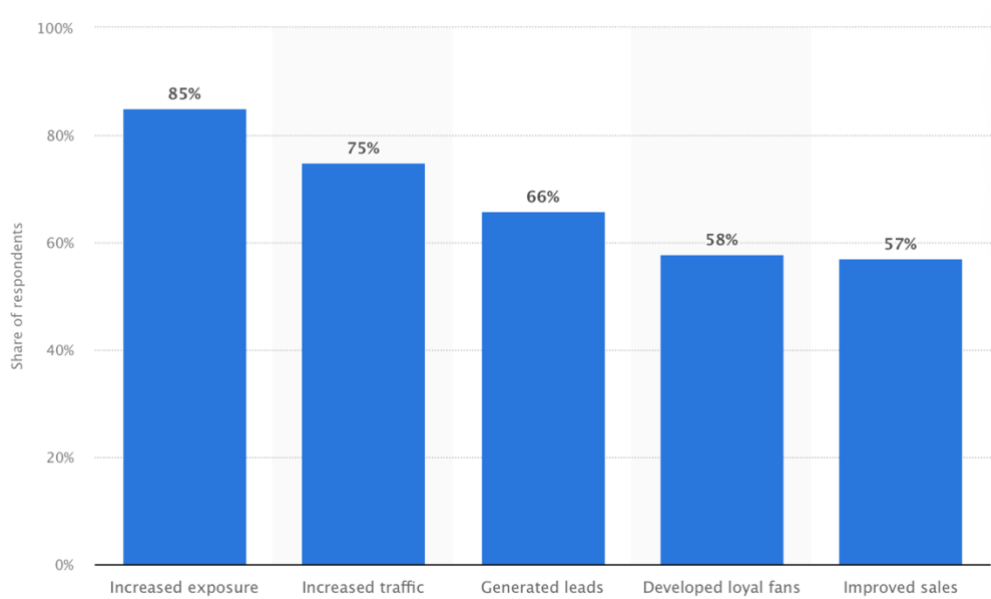


FIGURE 2: ADVANTAGES OF USING SOCIAL MEDIA FOR BUSINESSES PURPOSES (STATISTA RESEARCH DEVELOPMENT, 2022)

### 2.3 Online product reviews

The widespread use of the global network significantly advanced the global communication and credibility of information shared. In order to meet technology innovations and high usability of e-commerce platforms, customers' opinions about products have moved to the online environment. An online environment, in contrast to a traditional marketplace, allows customers to interact and quickly create a huge amount of valuable information (Perren & Kozinets, 2018). Online product reviews are usually explained as opinions shared on the Internet by the customers (Purnawirawan et al., 2012). These opinions represent informal personal and subjective comments written by the customers.

According to Jensen et al. (2013) advanced technologies have made product reviews extensive and contributed to the fact that these reviews significantly shape opinions and influence customers' purchasing decisions. Lately, customers first read subjective comments from other customers and then evaluate the product based on what they have found on the Internet. It is argued that customers practice reading online reviews and use the content to handle the perceived risk that may occur while purchasing a product (Jepsen, 2007). As a matter of fact, for more than a decade this concept influenced both the pre-purchase choice as well as the post-purchase product perception (Purnawirawan et al., 2012).

As soon as the Internet transformed itself into a more engaging platform rather than the 'broadcast' platform its' users changed as well (Chua & Banerjee, 2015). The dominant audience of online reviews are interactive people who are looking for more information to create a perspective towards products (Hennig-Thurau et al., 2004). Many researchers argue that the acceptance and usage of online review platforms is inevitable as their impact on customer choice is massively growing (Lu et al., 2014). One of the key features of online reviews and the reason for its widespread use is the ability to reach a huge audience (Dellarocas, 2003). In fact, scientists claim that nowadays online reviews have more influence on customers' choice than any marketing campaign has ever had (Bickart & Schindler, 2001). Customers tend to have more trust and connect much more similarities with unknown people who write reviews and believe them more than they would ever believe a sponsored advertisement or a marketing campaign. Lately, brands became aware of the significant impact of online reviews and started answering the audience on their comments and trying to deal with their concerns. This action was made by brands to save their reputation and interact more with the audience and get to know product compliments and complaints from users' perspective.

Henning-Thurau et al. (2004) identified that customer comments can be both positive or negative statements depending on how satisfied potential or ex-customers are with specific

products. Online reviews are usually written by people who have already purchased, tried the product and are willing to share their experience with an audience and discuss the product advantages and disadvantages. The study of Nisar et al. (2020) explains that customer written reviews have a more significant impact on potential users than information provided by the brand. Certainly, customers significantly value the feedback about products and thereby check regularly for others opinion before purchasing (O'Reilly et al., 2018). This consumer-to-consumer communication appears to be highly trustworthy as according to O'Reilly et al. (2018) consumers trust in online reviews generally as much as they would trust in personal suggestions from someone they know. Considering the high influence of words written by strangers on online platforms, its massive development in the future is undoubtful.

The following Table 1 compares trust that consumers have in online reviews compared to personal recommendations and its development over the period of four years, from 2014 to 2018, based on a survey conducted by Statista (Dixon, 2018). This survey shows that by the end of 2018 a higher percentage of customers (19 percent) have trust in online reviews and perceived them as authentic and a small percentage (6 percent) had no trust. However, this percentage was different in 2015 showing that only 8 percent of customers have trust in reviews and 20 percent do not trust reviews. This can be explained by the fact that online product review popularity and usability significantly increased in the last few years. Moreover, belief of customer review being authentic was volatile over the four years. As in 2014 customers indicated that 22 percent of them believed reviews are authentic, in 2015 the percentage increased to 31 percent and by 2018 percentage decreased to 19 percent. According to the Statista survey, customers were consistent through years in indicating that high number of product reviews make them have trust in reviews (25 percent). Namely, 34 percent of the survey respondents in 2014 indicated that they trust reviews in some types of business and in some they do not.

Do you have trust in online customer reviews?	2014	2015	2016	2017	2018
<b>Yes, always</b>	-	8%	18%	19%	19%
<b>Yes, if I believe the reviews are authentic</b>	22%	31%	27 %	27%	19%
<b>Yes, for some types of businesses, no for others</b>	34%	22%	19%	20%	15%
<b>Yes, if there are multiple customer reviews to read</b>	26%	19%	20%	20%	25%
<b>No, I am often skeptical about online reviews</b>	-	-	12%	13%	16%
<b>No, I don't trust reviews</b>	17%	20%	4%	3%	6%

TABLE 1: TRUST IN ONLINE CUSTOMER REVIEWS 2014-2018 (DIXON, 2018).

O'Reilly et al. (2018) in their study identified several factors affecting customers to consider online reviews while purchasing a product. Researchers classify factors as "motivational-decision factors and outcomes" (O'Reilly et al., 2018, p. 377). Motivational-decision factors explain customer desire for a better choice while, the outcome factor include saving time purchasing the product and reducing the risk of being unsatisfied with the purchase (O'Reilly et al., 2018). This explains the fact that customers are willing to search the Internet to find information that will be sufficient for them to elaborate themselves that the perceived benefit of purchasing a product is much higher than the cost they pay for buying that specific product (Jepsen, 2007).

### 2.3.1 Electronic word of mouth (eWOM)

The concept of eWOM was introduced with the invention of e-commerce platforms. As soon as the Internet started to be used as a marketplace, product marketing as well transformed itself and adapted to the new digitized environment. The concept of eWOM is defined as "any positive or negative statement" that was written or said by potential or actual customer about a product experience and was shared on the Internet platform (Henning-Thurau et al., 2004, p.39). Nowadays, the eWOM phenomenon is recognized as the most powerful resource of information used to spread information among global society (Jalilvand et al., 2011). The power of the eWOM influences lies in its independence of marketers which signifies high trustworthiness



(Wang et al., 2015). The word 'electronic' in front of the concept represents the advanced concept that transcended from the traditional word-of-mouth (WOM) into the digital phenomenon that is not limited by any social, geographical or time boundaries (Verma & Yadav, 2021). The high efficiency and widespread use and availability of the Internet network to provide customers the opportunity to share their advice and express their opinion informally and anonymously about different topics and different products or services (Wang et al., 2015).

According to many economists, the concept of eWOM tends to be effective even more than advertising and mass media content (Katz & Lazarsfeld 1955, cited in Verma & Yadav, 2021). EWOM can take place on any of the platforms available on the electronic network (Henning-Thurau et al., 2004). Most of eWOM is written in e-commerce websites under the comments section of specific products, published as a photo and caption review on social media platforms such as Facebook and Instagram, filmed in short videos for YouTube or TikTok platforms or written on online forums. No matter where the review is published, all of them tend to have significant power in advising potential customers to purchase the product.

The intention of eWOM is to influence the judgement and perception of the audience about specific products or services (Wang et al., 2015). Characteristics of this phenomenon such as an infinite volume, quick reach of huge amounts of people globally and author anonymity allow eWOM to play a significant role in consumer choice (Dellarocas 2003, cited in Ismagilova et al., 2017). Researchers tend to illustrate eWOM as an "innovative venue for gathering reliable information" because of the ability of the Internet to store a huge amount of peer customers' reviews (Jeong & Jang 2011, p. 356).

The Internet enabled fast spread of information globally and allowed consumers to exchange their opinion with people who they have never met (Jalilvand et al., 2011). The question that often arises from the fact that people share their opinions with others is for what reason customers want to spread their review. Jalilvand et al. (2011) in their research discover several factors that can be acknowledged. The most noticeable factor is the personal need to share extreme satisfaction or dissatisfaction with the product (Maxham & Netemeyer, 2002). The real product experience can activate extreme feelings in users that can be positive or negative and act very powerful in influencing users to share the experience and write a review online. Positive feelings come from customers that were satisfied with products, whereas negative feelings come from dissatisfied customers that did not enjoy using the product and complained about the item (Richins 1984, cited in Ismagilova et al., 2017). Another factor that can be a reason for users to write a review is the strong connection and loyalty that users created with a specific

brand or product (Jalilvand et al., 2011). This strong connection can be from the many years that users trusted a brand and this tends to create a positive feeling and confidence toward product's quality and motivate users to write sincere reviews.

Table 2 shows different motives for writing WOM. This table identified several theories from different scientists that elaborate motives for eWOM communication. Dichter is one of the scientists who classified motivators for spreading positive WOM into product-involvement, self-involvement, other-involvement and message-involvement (Dichter 1996, cited in Henning-Thurau et al., 2004). According to Dichter, product involvement motivation indicates that customers feel a strong need to share an experience because they have built a strong connection with the product and want others to experience it as well (Henning-Thurau et al., 2004). Self-involvement motivation is usually the factor that influences customers to write a review if a product was involved in some emotional experience with the customer (Henning-Thurau et al., 2004). Message-involvement motive is usually written as an answer to product advertisement or public event where the product was involved. Engel, Blackwell and Miniard added a bit of change to Dichter's classification and added dissonance reduction as a motive for negative WOM (Engel, Blackwell & Miniard 1993, cited in Henning-Thurau et al., 2004). The dissonance reduction motive is a factor that reduces uncomfortable doubts of the purchase decision (Henning-Thurau et al., 2004). The third classification of motives was published by Sundaram, Mitra & Webster (1998) and has some of the motives that were stated in previous classifications and few new motives. According to the classification of these researchers, there are positive motives: altruism, product involvement, self-enhancement and helping company and there are negative motives: negative altruism, anxiety reduction, vengeance and advice seeking (Sundaram, Mitra & Webster 1998, cited in Henning-Thurau et al., 2004).

Author	Motive
<b>Dichter (1996)</b>	Product-involvement
	Self-involvement
	Other involvement
	Message-involvement
<b>Engel, Blackwell &amp; Miniard (1993)</b>	Involvement
	Self- enhancement
	Concern for others
	Message intrigue
<b>Sundaram, Mitra &amp; Webster (1998)</b>	Dissonance reduction
	Altruism (positive WOM)
	Product involvement
	Self-enrichment
	Helping the company
	Altruism (negative WOM)
	Anxiety reduction
Vengeance	
Advice seeking	

TABLE 2: MOTIVES FOR WORD-OF-MOUTH COMMUNICATION BEHAVIOR (HENNING-THURAU ET AL., 2004, P.41)

## 2.4 Characteristics of online product reviews

Human beings observe and experience the same things in different ways. Each person has its unique and complex way of analyzing and judging received information (Bughulashvili, 2013). This alludes that some information may be considered important and impact certain people while others may judge the same information as worthless. This situation may be the same as interpreting online product reviews. Some readers may consider a review trustworthy, impactful and useful whereas others may judge the review as not reliable and not important. No matter what a review was written about, researchers have experienced that consumers perceive positive reviews as more persuasive than negative reviews (Wang et al. 2015). In general, scientifically discovered positive reviews appeared to be more impactful for consumer choice (East et al., 2008). This may be justified by consumers' desire to experience the same or even a greater level of satisfaction by using the same product that the peer customer wrote about.

This desire may provoke users to frame the message and magnify positive product features during information-processing and the decision-making process. According to Wang et al. (2015) negative opinions tend to be analyzed more carefully and questioned by readers' actual needs. When customers read a negative review they tend to question whether they would consider it reliable and whether that negative feature of the product would impact their product experience.

Numerous studies have researched the persuasiveness feature of online product reviews as well as other important features such as awareness, motivation, helpfulness of reviews in product purchasing and impact on purchase intention (Wang et al., 2015). All these features play a significant role in the consumer purchasing process. Awareness of online product reviews emphasizes the extent to which consumers surf on the Internet and read comments on e-commerce websites. Moreover, the level of awareness may relate to the product popularity and how much attention consumer opinions reached (Bailey, 2005). In fact, the more online attention a product generates the higher awareness it reaches in the society. When society becomes aware of a product, it is more likely that people will get influenced by the product's existence and decide to purchase it.

Motivation for writing online product reviews can come from different reasons. Some consumers often lack the motivation to share their experience and describe product attributes while others feel the need or even pressure as global customers to pass the experience to other potential customers (Silverman, 2011, cited in Lim et al., 2016).

Motivation for seeking online reviews comes from the need to collect more product information such as product features, price, product aesthetic and product utility. Helpfulness of product reviews is represented in the form of messages that advise potential customers whether a product is useful and if a reviewer was satisfied with the purchase. All these product review features significantly impact customers' purchasing decisions in a way that customers after reading a review often decide to purchase that product or find a substitute for the product. The impact feature of online reviews demonstrates the significant power that information distributed through online platforms have. In fact, economists often indicate that information written by peer customers has a stronger influence on customers' perception than any advertising has (Constantinides & Fountain, 2008). This can be explained by the fact that readers feel deeper connected and perceive peer customers as more reliable than sponsored brand content (Bickart & Schindler, 2001).

Huge amounts of available online reviews made it difficult for consumers to select useful and helpful reviews. Therefore, for an easier understanding of the value of a product, review qualities may be examined through six components of informativeness, valence, credibility, conformity, readability and user characteristics (Figure 3). Informativeness of online reviews is examined by the amount of useful information, evidence and explanation that support the written review (Mackiewicz, 2015). This important quality is often questioned by the balance of subjective and objective statements in customers' reviews. In fact, researchers usually explain this quality as helpfulness of reviews since it may significantly reduce customers' uncertainty while purchasing a product (Sun et al., 2019). The length of a review can be also connected to quality of informativeness. According to Mudambi and Schuff (2010), reviews with longer length may have more details and information about product usage but this does not mean they are more useful than short length reviews. Long reviews may have a lot of useless information that weaken the review's quality. Based on Hong et al.'s (2017) research, medium length reviews appear to be more convenient and helpful for readers compared to long and short length reviews.

Valence of reviews is another important quality of reviews. The extent of consumers' positive or negative thoughts may significantly influence the value of written comments. As reported by Pan and Zhang (2011) positive reviews are more likely to be rated as very useful than negative reviews. Namely, negative reviews usually do not receive a rating, but they are perceived as more credible and altering than positive reviews (Mackiewicz, 2015). Users explain this by the fact that negative reviews are minor in comparison to the massive number of positive reviews available online.

The third quality of reviews is credibility. Review's credibility greatly depends on the person that writes a review. Readers perceive reviews from a person with a reputation more credible than when the reviewer is unknown (Mackiewicz, 2015). Reviewers who already wrote few reviews and are known to the audience are considered as credible and trustworthy. These reviews tend to be widely noticed and recognized among many other comments. However, if the review is written by anonymous reviewers and receives a lot of attention in means of response and ratings, this review is considered as very credible since it received wide feedback from society.

Fourth characteristic of online product reviews is conformity in the means of "the extent to which reviews rating corresponds to the rating consensus of surrounding review" (Mackiewicz, 2015, p. 12). Mackiewicz (2015) pointed out that the quality of specific reviews is often judged by how that review accords among other reviews on the same product. As reported by Korfiatis

et al. (2012, p. 206), "Reviews closer to consensus may be considered more helpful by potential consumers than those exhibiting extremes of opinion".

Fifth, a characteristic of online reviews is readability which represents how easy it is for a reader to read and understand the written review. Simple and consistent reviews with key information of product performance are more than comfortable to understand. Additionally, it is often uncomfortable to read long text, small fonts with unnecessary information and complex language. Readability of review is important for users being more likely to read and be influenced by the recommendation than if a review was not understandable.

The sixth characteristic of online reviews is the user characteristics which unlike previous characteristics are not technical but attributes of the people who are reading reviews (Mackiewicz, 2015). As reported by Zhu and Zhang (2010) users who are experienced in using the Internet are more comfortable in searching on the online network, trusting the reviews and being influenced to purchase a specific product online. Familiarity with the Internet and ease in communicating and using online platforms plays an important role in forming perception toward relying to online recommendations.

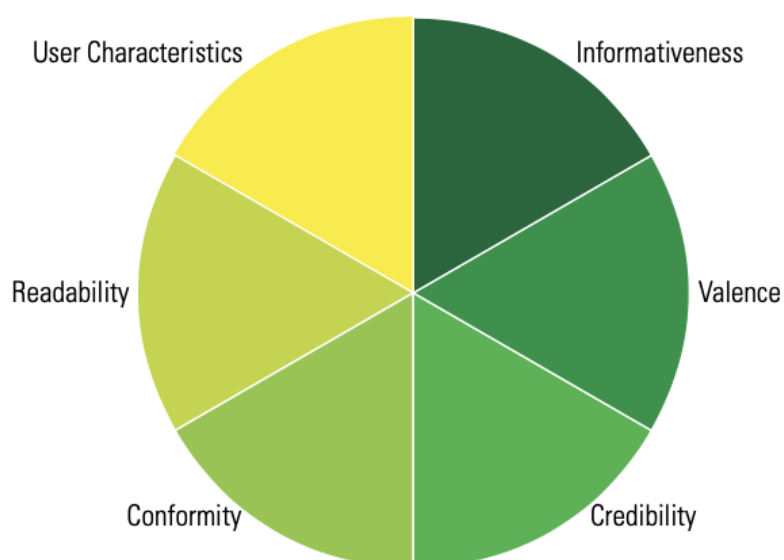


FIGURE 3: CHARACTERISTICS OF ONLINE PRODUCT REVIEW (MACKIEWICZ, 2015, P.6)

Figure 4 underlines what information is considered most helpful in product reviews (Petrosyan, 2019). This statistic indicates that 60 percent of respondents claimed that for them the most helpful information in online product reviews is the product performance. Next, purchase satisfaction was found to be with high performance of 55 percent and product quality with 54 percent. At the surprisingly low place in terms of helpfulness the value of a product was found to be in sixth place with 44 percent in being helpful. Reasons for purchasing and advising about the use have been found to be significantly less helpful for users with 15 percent and 21 percent respectively.

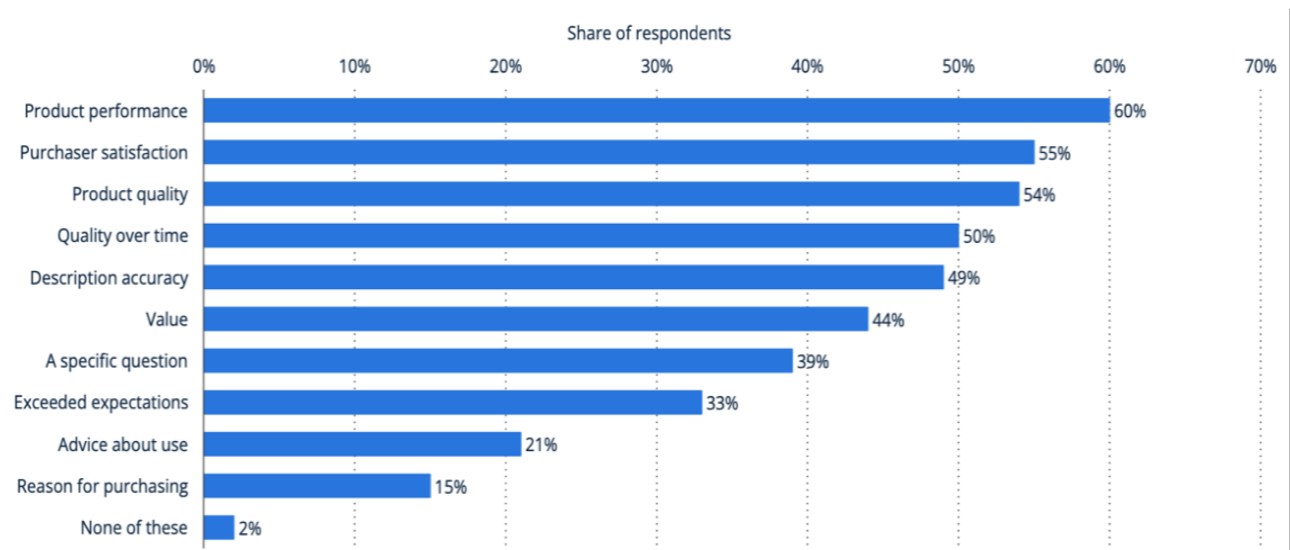


FIGURE 4: INFORMATION THAT INTERNET USERS CONSIDER HELPFUL IN 2018 (PETROSYAN, 2019)

Online reviews that go viral tend to be ones that trigger the reader to emotionally connect to the experience and intrigue interest that further drives customers to purchase the product and try to feel the same level of gratification as the peer consumer already wrote about in the online review (Lim et al., 2016). Wang et al. (2015) in their study state that online product reviews can significantly influence product profitability and seriously increase the brand and product popularity. The dominant amount of the online product review audience comes from consumers wanting to know more product information and seeking for different perspectives from product experiences (Lu et al., 2014).

## 2.5 Consumer online purchasing behavior

Technological emergence drastically changed the way people purchase products. For decades human beings were going physically into stores to purchase products and bring them home. The new construct of customers searching on the Internet and purchasing products on e-commerce websites transformed the physical purchasing process into quick and 24/7 available online shopping processes. The phenomenon of online purchasing significantly boosted the e-commerce industry and made the online marketers' environment highly competitive (Sajid et al., 2022). Digitalization did not only change the way people purchase products but also customers' taste and choice, pre-purchase and post-purchase behavior.

Economists explain the complex concept of consumer behavior through consolidation of sociology, psychology, economics and management (Singh & Sailo, 2013). In the literature consumer behavior is defined as "the mental, emotional and physical activities that people engage in when selecting, purchasing, using and disposing of products and services to satisfy needs and desires" (Wilkie 1994, cited in Rai, 2013, p. 75). This concept covers the process of product searching, product selecting, buying a product and product purchasing feedback. In fact, customer's buying experience significantly affects customer's eventual future behavior and repurchase intention (Rita et al., 2019). To understand and try to predict future the online purchasing behavior of customers, economists have addressed a few steps that lead customers to their final purchasing decision.

Economists Kotler and Armstrong (2018) divided the process into stages of need recognition, information search, evaluation of alternatives, purchase decision and post purchase decision (Figure 5). First of all, any online purchasing process starts with the recognition of the desire or need to purchase a product. Lately, this desire and need has been influenced by the online product reviews' and product content that can be found all around the Internet. Customers in this phase usually make a choice to look for a product based on someone's online review on social media platforms or e-commerce product reviews. After this stage, customers are searching if this product is a proper solution that they are looking for. In this second stage customers read more of online reviews and judge reviews more carefully. This stage turns on the next stage of evaluation of the product that includes evaluating the product by the customer preferences. After all these stages and careful evaluation of the product's usefulness and consideration of other options as well, the customer decides whether to purchase the desired



product or not. Finally, the phase of post purchase behavior is the feedback that customers formed after using the product. In recent years, customers are keen to share their experience online with the global audience and write a comment on an e-commerce website or publish their review on social media platforms.

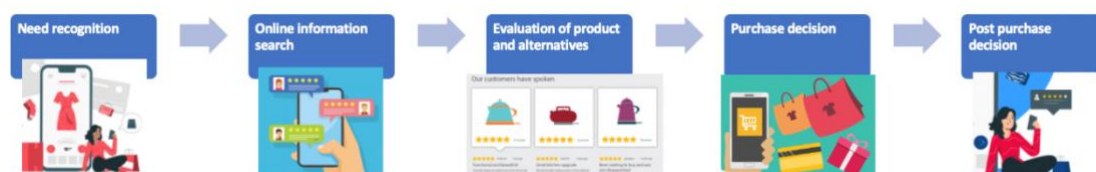


FIGURE 5: CUSTOMER DECISION PROCESS (KOTLER & ARMSTRONG, 2018)

Researchers often claim that it is essential to understand psychological aspects of purchasing to thoroughly understand online consumer behavior (Barmola & Srivastava, 2010). According to Barmola and Srivastava (2010) two customers can purchase the same product for two completely different reasons, use it in different ways and one can create emotional attachment toward that product while the other does not. Namely, knowledge about consumers, specifically their behavior, routines, taste, wants and desires are critical for marketers to recognize any potential change in trends or the need to acquire new trends in keeping customers satisfied and interested (Barmola & Srivastava, 2010).

Consumer choice is usually defined as a decision behavior of a customer during the process of purchasing a product or service (Danish et al., 2019). As the market advances so does customers' taste and competition at the market. Quick adoption of new trends brings huge amounts of different products for customers to choose from. In this way, customers are constantly in the process of defining their preferences and developing their taste. Therefore, economists claim that maintaining customer satisfaction in online shopping is one of the biggest challenges for marketers (Rita et al., 2019). High competition in the online environment requires businesses to provide superior services in terms of high-quality websites, superior customer service and superior delivery service to maintain customers' satisfaction. Gounaris et al. (2010) in their study discovered that the quality of e-service has a positive effect on the customers' purchase intention, purchase evaluation and post purchase feedback.

Online purchase and post online purchase behaviors are both strongly connected to the impact of online product reviews. In this complex process consumers' perspective about the product tends to be significantly influenced by consumers' attitude and personality. Customers with different attitudes and preferences have different search behavior and search on different platforms for product reviews. For instance, customers who enjoy following reviews on social media platforms in the form of video reviews or photo reviews will look for that content on Instagram and Youtube. While customers who like to read product recommendations in the form of comments will look up reviews on e-commerce and with completely different search behavior form their decision towards product purchasing. In the same way, customers who were later satisfied with the product purchase or dissatisfied with the product often behave in the way to reply to comments in the e-commerce website. Others who are confident in sharing their opinion on social media platforms choose to post a picture or video with their opinion recommending to their friends and followers to purchase or skip the product. All these different ways of online consumer behavior point out a wide range of platforms where marketers should significantly engage with customers, track their reviews and connect with them in order to further form loyal relationships.

## **2.6 Beauty and personal care industry**

Since ancient times human beings have been using beauty products in various forms from nature products to manufactured products. The importance of the beauty and personal care industry in the life of human beings can be seen in its essential usability of individuals taking care of themselves (Kumar, 2005). The persistent need of taking care about the personal look evolved with the time and in the consumer industry is called the beauty and personal care. The huge popularity of personal care items in today's society brought significant growth to the global beauty and personal care market, reaching over 16 percent increase in revenue for 2022 compared to results of the previous year 2021 (Petruzzi, 2022b). According to Statista Research department (2022), the revenue of the global beauty and personal care market for 2022 was 100,493.8 million dollars and is expected to rise in future years and reach approximately 131,041.2 million dollars in 2026 (Statista, 2022). The significant growth of the market revenue can be explained by the wide range of new products and technological improvements that global beauty and personal care companies are regularly offering to society. This includes an extensive number of brands that are competing with their products in the beauty and personal care market. As a matter of fact, the digitalization of the beauty and personal care market moved

significant amounts of sales from drugstores and perfumeries to e-commerce websites. E-commerce websites in comparison to physical drugstores offer customers to look at product ratings, look at availability of products and compare similar products by price and effectiveness.

Product classification that this industry includes refers to skincare, makeup, haircare, fragrance, body care and oral care. The broad range of beauty products created a high level of indecisiveness for customers making a choice while purchasing. Today, beauty and personal care brands offer few different lines, product shapes and product features for simple face cream and customers are often faced with the risk of purchasing the product which may or may not be appropriate for their skin. Therefore, customers are more and more keen to search online for certain products, look for reviews and read through opinions and recommendations of previous customers. By using online reviews for purchasing beauty products, customers significantly reduce the risk of being unsatisfied with their purchase. Product review creators usually describe ingredients, product application, product effectiveness and publish pictures of product swatches so potential customers can already see how it looks on the skin. The upgrade of the beauty and personal care industry offering products on e-commerce platforms drastically changed the industry in terms of increasing the revenue and being one of the most popular products to purchase online.

The following graph (Figure 6) shows the breakdown of the global beauty and personal care market by product categories sold from 2011 to 2021 (Petruzzi, 2022a). According to this Statista Report skincare category resulted in 41 percent of the global beauty and personal care market in the year 2021. Haircare products made up 22 percent of the global market followed by makeup reaching 16 percent, perfumes 11 percent and hygiene products 10 percent of the global beauty and personal care market in 2021. According to Petruzzi (2022a) these results were dominated throughout the last ten years with minor changes. Overall, skincare and hair care showed continuous growth throughout the time period of the ten years. Based on the results of Petruzzi (2022a), perfumes were more popular in 2011 reaching 14 percent of the beauty and personal care market while by 2020 the percentage of this product category slightly decreased to 10 percent.

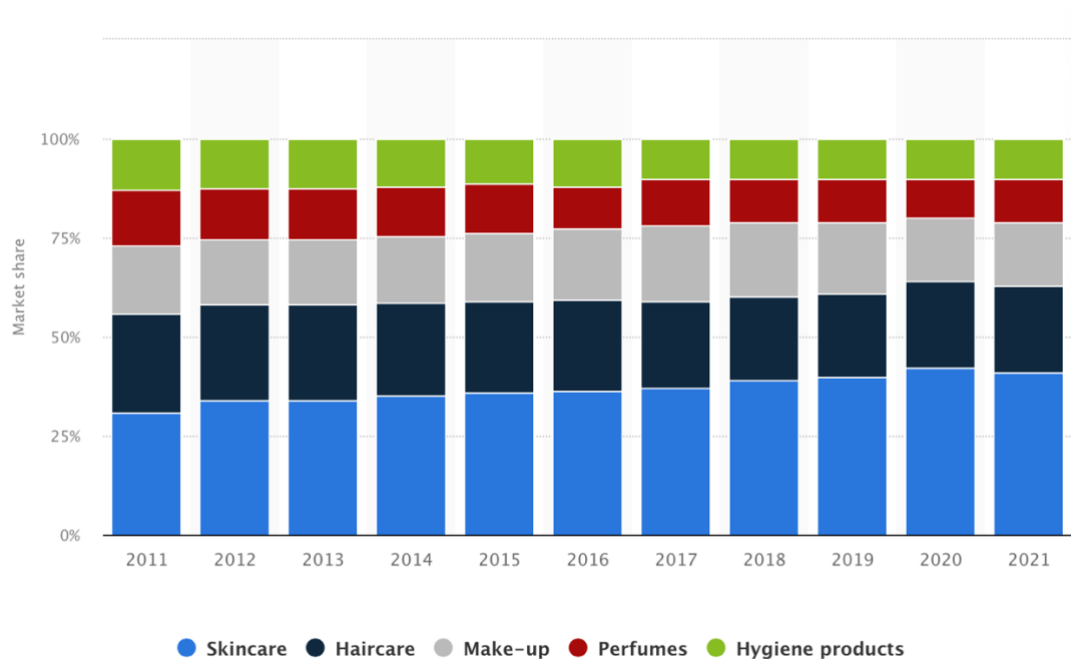


FIGURE 6: MARKET SHARE OF GLOBAL PERSONAL CARE AND BEAUTY MARKET FROM 2011 TO 2021, BY PRODUCT CATEGORY (PETRUZZI, 2022A)

With regards to the massive growth of the beauty and personal care industry, currently and in the future, economists often claim that this industry benefited significantly from the increasing popularity of social media platforms like Instagram and YouTube (Petruzzi, 2023). Customers publishing their social media content with beauty products boosted the demand for these products and created a topic which became very trendy online. Beauty and personal care appeared to be an easy topic where users commented and discussed with other users about certain products and started recommending and sharing their opinions. The global audience quickly became influenced by these comments and it resulted in people writing a lot of reviews about products. In fact, after a product becomes popular in the online environment a lot of users appear to be more likely to purchase this specific product online, try by themselves and later leave a comment or review online. This trend of communicating online about products is currently very popular and platforms such as Instagram, Youtube and TikTok are reaching performance peaks in beauty product reviews. It is inevitable that the beauty and personal care market will grow even more in the future considering the hype that is culminating in the online environment. The marketers' online environment is more competitive than it has ever been and it can be noted that the competitiveness will only grow with the time and there will be many new product innovations on the beauty and personal care market.

## 2.7 Conceptual framework and hypotheses development

Based on the literature review that was provided in this chapter, eight hypotheses have been developed to answer the research question and determine what characteristics of the online product reviews have an impact on consumer's decision-making process. Each hypothesis tests a specific characteristic of online product reviews that may be significant for consumers in the decision-making process. To determine the relationship between consumers' purchasing choices and characteristics of product reviews different variables were used such as the online activity on Instagram and e-commerce platforms. The predicted relationship between the variables and the outcome are analyzed with the help of eight quantitative hypotheses (Creswell, 2014). In general, hypotheses are defined as predictions made by the researcher about a specific phenomenon and expected relationship between tested variables (Marczyk et al., 2005). The collected data of this research were used to evaluate the suggested statements and determine what characteristics of reviews impact consumer's purchasing decisions. The proposed hypothesis and their relationship are visualized in the conceptual framework (Figure 7). A summary of hypotheses that will be analyzed in this research is provided as follows:

### **Hypothesis 1**

H0: There is no significant preference for review informativeness in consumer's decision-making process.

H1: There is a significant preference for review informativeness in consumer's decision-making process.

### **Hypothesis 2**

H0: There is no significant preference for review valence in consumer's decision-making process.

H1: There is a significant preference for review valence in consumer's decision-making process.

### **Hypothesis 3**

H0: There is no significant preference for review credibility in consumer's decision-making process.

H1: There is a significant preference for review credibility in consumer's decision-making process.

#### **Hypothesis 4**

H0: There is no significant preference for review conformity in consumer's decision-making process.

H1: There is a significant preference for review conformity in consumer's decision-making process.

#### **Hypothesis 5**

H0: There is no significant preference for review readability in consumer's decision-making process.

H1: There is a significant preference for review readability in consumer's decision-making process.

#### **Hypothesis 6**

H0: There is no significant preference for review length in consumer's decision-making process.

H1: There is a significant preference for review length in consumer's decision-making process.

#### **Hypothesis 7**

H0: There is no significant preference for online rating in consumer's decision-making process.

H1: There is a significant preference for online rating in consumer's decision-making process.

#### **Hypothesis 8**

H0: There is no significant preference for online response in consumer's decision-making process.

H1: There is a significant preference for online response in consumer's decision-making process.

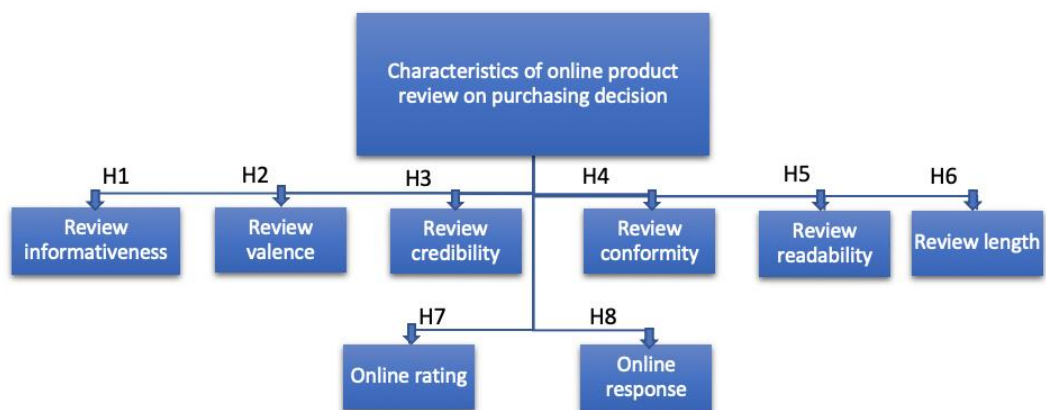


FIGURE 7: HYPOTHESIS EFFECT ON CONSUMER'S PURCHASING DECISION

### 3 METHODOLOGY

In this chapter of the thesis a suitable research method will be discussed. Many scientists identify methodology as one of the most important parts of the research since this part leads the research and the study design in a way to examine the central research question (Kazdin, 1992). As outlined in the introduction the central research question of this thesis is:

*Which online review characteristics have an impact on the customers' decision-making process?*

The methodology chapter will explain in depth all the essential parts of the quantitative research process such as the research instrument used in the study, the sampling method and the data collection. Finally, the data analysis procedure will be outlined and research ethics will be highlighted.

#### 3.1 Research design

Research method is generally classified into the three different types known as quantitative, qualitative and mixed methods (Creswell, 2014). All three types represent the different approaches that are used in the research process to discover the proposed effects. The qualitative research method uses more of the words, descriptions and open-ended questions to explore the phenomenon while quantitative methods rely more on the usage of numbers and short-ended questions (Creswell, 2014). Mixed methods incorporate both quantitative and qualitative research approaches to explore the phenomenon (Creswell, 2014). To study the impact of product reviews' characteristics on consumer choice a quantitative research method was chosen.

A quantitative research approach objectively tests the theories and relationships between variables that were already proposed by hypotheses before the research of the non-experimental stage started (Creswell, 2014). In fact, this relationship between variables is usually tested by questions asked in the non-experimental stage. Researchers Holton and Burnett (2005) claim that results of the quantitative study can be generalized into a wide population as this testing is concerned as more objective, while qualitative approaches are more subjective and used to better understand the explored phenomenon without generalization of



the results. Therefore, the objectivity in quantitative research is essential as well as validity and reliability of the study conducted (Creswell, 2014). For this research it is very important to be able to generalize the study results as the concept of online reviews is widely used and this is additionally beneficial for marketers all around the world to understand the study and be able to use the outcomes in their business operation. Data in the quantitative research approach can be collected experimentally and non-experimentally (Creswell, 2014). The non-experimental data collection is usually conducted through surveys and online questionnaires that can be easily distributed to the wide audience. In general, the greater the number of participants in the quantitative study the higher the accuracy of results (Fowler, 2002). In the quantitative approach researchers can measure variables by using specific instruments while exploring the relationship between them (Creswell, 2014). The measured data is shown in numbers which are further analyzed with statistical tests that help to determine the relationship and significance of results (Creswell, 2014).

This deductive study exploring the characteristics of online reviews and impact of online reviews in the consumer's decision-making process is non-experimental and will use an online questionnaire to collect the data from the participants. The non-experimental online survey will enable to test the relationship between already defined variables and properly answer the central question of this research. The online questionnaire enables us to collect a huge amount of data and find more accurate and reliable results of the research to gain understanding of the research problem.

### **3.2 Survey design**

The research instrument that was used in this study to determine what characteristics of product reviews impact consumer's purchasing decisions is the online survey. Researchers often claim that a survey provides the researcher with a quantitative description of attitudes, trends, views and opinions of a sample of the population (Creswell, 2014). Generally, the survey technique is very useful to collect a huge amount of data easily and efficiently from the audience in a consistent manner (Creswell, 2014).

The survey of this research was created in Google Forms in English language and it was distributed through the online network by the author using snowball sampling. At first the author randomly selected a group of people and sent them the questionnaire and asked them

to forward the same to their friends. The questionnaire consists of 27 close ended questions that are divided into four sections (see Appendix 1). The close-ended questions tend not to be overwhelming for participants and enable them to easily answer questions and avoid wasting time on writing long paragraphs as answers.

The first section of the survey consists of questions that refer to participants and ask about gender, age and level of education. The description of the participants is very important to identify the group that participated in the study and to whom further results of the quantitative study can be generalized. The age question was formed in a short-open ended form while gender and level of education were constructed in a short-close ended form where participants could select one from the available options (single choice). Further, participants were asked to identify their shopping behavior and their preferences. Hence, they were asked to select if in general they practice shopping for “not-everyday products” online, in store or the third option was ‘online and in-store’ where they combine online and instore shopping in their purchasing behavior (single choice). Next, participants were asked if they read online product reviews before purchasing and if they write reviews on online platforms (single choice). The last question in the first section used a nominal binary scale testing the participant’s knowledge about beauty and personal care products (single choice).

The second section of the survey consists of eight nominal binary questions where participants were provided with pictures of online reviews and asked to visually select between option 1 and 2 what online product review is more relevant for them. First six questions test in pictures how relevant certain product characteristics for participants are, while the seventh and eighth question of this section (15th and 16th question of the survey) referred to online rating of product reviews and online response. Answers to the questions were binary coded.

The third section of the survey contains eight questions that use a 5-point Likert scale to determine the meaningfulness of each product review characteristic. The answers were coded as 1= extremely meaningful, 2= very meaningful, 3= neutral, 4= less meaningful, 5= not at all meaningful. Each of these survey questions in the third section (question 17 to question 24) had a definition of the term for which the level of meaningfulness was tested. All characteristics that were asked from participants in this question to determine the meaningfulness, were previously tested as well in the second section with the pictures that were provided from question 9 to question 16.

The fourth section of the questionnaire aims to determine how meaningful product performance characteristics of beauty and personal care products are for participants. To determine the meaningfulness of product ingredients, product application and product effectiveness a 5-point Likert scale was used. The answers to questions in this section were coded as 1= extremely meaningful, 2= very meaningful, 3= neutral, 4= less meaningful, 5= not at all meaningful. The list of questions that were asked in the conducted online survey can be found in the appendix (Appendix 1).

This survey was conducted online and was available for people to voluntarily participate from the 20th of February 2023 until 10th of March 2023.

### **3.3 Research ethics**

Ethics is at the core of this study and the researcher regularly imposed ethical standards through the whole research process. The online questionnaire was conducted anonymously, and results were kept confidential to protect the privacy of participants and to avoid any potential ethical issues. In fact, answers of anonymous participants were collected in a way that none of the answers could be linked to participants and in this way the researcher excluded any possibility of misusing the collected data. Also, the data collected in this study were kept confidential, used for the purpose of the research only and the data were not used for any other purposes or shared with third parties. As a matter of fact, before starting to answer the questionnaire participants were able to read and understand that their participation in this research is completely voluntary and anonymous without any obligation or pressure. In the beginning the author provided participants with the aim of the study and a short explanation of the research issue of the questionnaire. Participants were able to withdraw from the questionnaire anytime during the questionnaire without any consequences. Through most of the survey questions participants were able to state a neutral opinion to the topic by choosing number 3 as the answer (3= neutral in the 5-point Likert scale questions).

### 3.4 Data collection and analysis

In this study the researcher collected primary data with the self-made questionnaire using Google Forms. The total number of valid respondents are 200, collected in the time period of three weeks. The collected data were analyzed with the use of Microsoft Excel and the statistical software R in combination with RStudio. Before data was used for analysis, the researcher exported from Google Forms the collected data to an Excel file and proceeded with data cleaning. In the process of data cleaning there were several ambiguous and incomplete responses that were removed from the dataset.

To properly conduct the statistical analysis the researcher coded answers as follows: Yes=1, No=2, I don't have an Instagram profile= 3. Answers regarding purchasing behavior were coded as 1=Online, 2= In-store, 3= Online and in-store. Sample descriptive answers were coded for gender as 1=Female, 2=Male, 3= Divers, 4=Prefer not to say. Education level was coded as 1=no formal education, 2=Primary school, 3=Lower secondary (high school, short programs (less than 2 years), 4=Upper secondary (university entrance qualification), 5=University (BSc, BBA), 6= Master, MBA, PhD, and Dr., and 7= Other. Number of reviews were coded as 1=More than 10, 2=4 to 10 reviews, 3=1 to 3 reviews and 4 =None. Answers from questions that used Likert scale to determine the meaningfulness of specific product reviews characteristics and product performance characteristics were coded as 1=extremely meaningful, 2=very meaningful, 3=neutral, 4=less meaningful, 5=not at all meaningful.

R is a statistical software that enables the researcher to analyze the collected quantitative data. The researcher imported all valid data from Excel and ran several statistical tests such as a binomial test, Wilcoxon test, hierarchical clustering and cross tab analysis. In general, R is used to solve complex statistical problems and analyze data using different statistical tests. Primary data in this research were analyzed through predefined hypotheses and the level of significance that was determined by statistical tests. Based on the result of the p-value and the pre-defined significance level of 5% the predefined hypotheses were either accepted or rejected.

The binomial test is often used to compare the sample proportion to the hypothesized proportion in the way that the outcome is calculated as the probability of correlated measures (Onwuegbuzie et al., 2011). The calculated probability aims to detect whether there is a significant difference between different options and which option has the higher value.

Wilcoxon signed rank test is performed to compare two samples that are related and to assess the mean results of the tested population of non-normal distributed data (Yinglin, 2020). The probability value is determined through the "p-value" and compared to the 0.05 significance level which determines whether a significant relationship between the tested variables can be proven or not (Matthews & Ross, 2010). Based on the significance level of 5% and the resulting p-value of the test, the null hypothesis is either rejected and an alternative hypothesis is accepted, or the p-value indicates that the null hypothesis is failed to be rejected and a significant difference, relationship or preference for the tested variable cannot be proven. For the thesis at hand, a variable with the constant value of three was created (the neutral position of the 5-point Likert scale) and tested for significant differences against the original responses.

Clustering in R is often conducted to assimilate participants into groups by their similar characteristics or preferences that differ them from other groups. Moreover, through clustering mean results for cluster groups are determined. The smaller the mean value the more meaningful that variable is for that cluster.

The next test is the crosstab test performed in R. The Crosstab test allows researchers to get a precise insight from the large data set by creating crosstabs and evaluating specific groups. Additionally, a crosstab test determines the value of Cramer's V correlation which is the actual association level between the tested variables in the range from 0 to 1 (Matthews & Ross, 2010). To understand the actual strength of the relationship between tested variables Cramer's V value close to 0 stands for a correlation that is very low and indicates weak relationship, while value closer to 1 stands for a very strong correlation and relationship between tested variables.

## 4 RESULTS

In this chapter the results collected in the primary research from the online questionnaires are presented and explained through tables and diagrams that were created in Excel and R. First, a description of the participants will be provided in the descriptive statistics part. Next, inferential statistics present the tests of the predefined hypotheses.

### 4.1 Descriptive statistics

To get a clear understanding of the results and to be able to further generalize the results of the study to a possible underlying population, it is important to explain demographic and general characteristics of the survey respondents.

#### 4.1.1 Gender

The gender of participants is shown in Figure 8 and Table 3. In this research participants were offered four choices of gender. Those choices were female, male, diverse and prefer not to say. Overall, out of 200 respondents that participated in the research 60.50% (122 respondents) were identified as female. Next, 39.50% (78 respondents) were male participants and other choices diverse and prefer not to say both were not chosen by any participant.

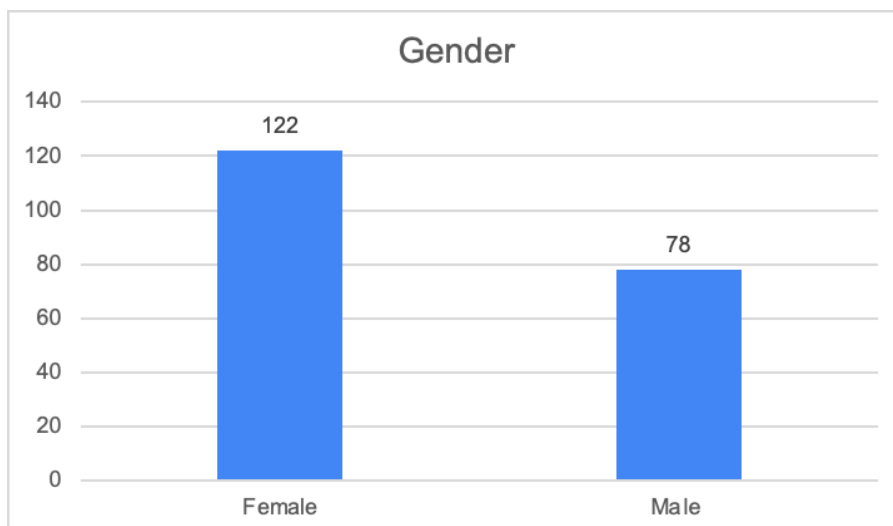


FIGURE 8: GENDER

Gender	Number	Percentage
Female	122	60.50%
Male	78	39.50%
Total	200	100.00%

TABLE 3: GENDER

#### 4.1.2 Age

The age of participants was between 17 and 61. Most respondents were in the mid-twenties age group, 43.50% (87 respondents) were in the age group 20-25. The next big group of participants are in the age group of 25 to 30 years old 37.50% (75 respondents). The mean age of participants in this research is 27 with a median of 42. Additionally, 6.00% correspond to 12 respondents that noted they are in the age group 20 and less than 20, 6.50% correspond to 13 respondents that are in the age group 30-40, 6.50% correspond to 13 participants that are in the age group older than 40. Results are shown in Figure 9 and Table 4.

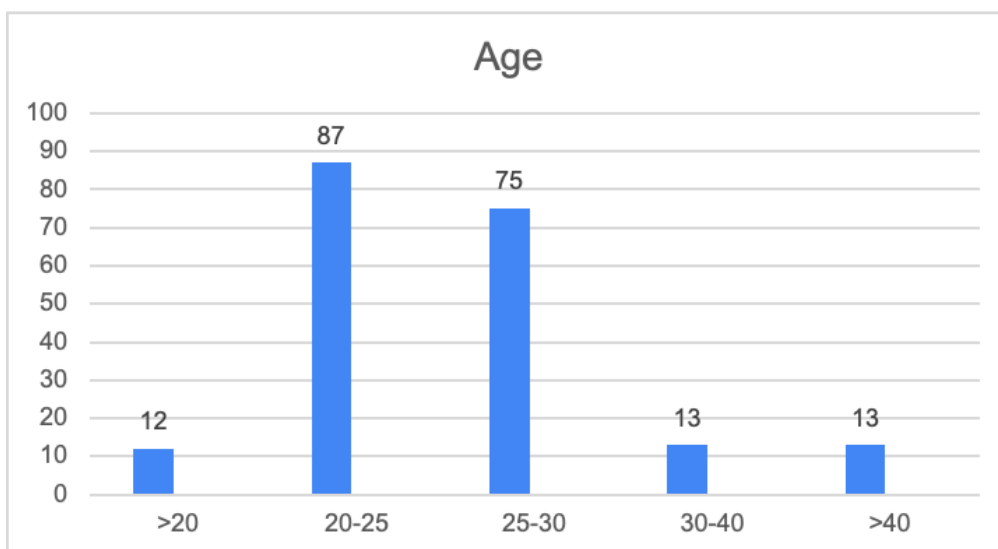


FIGURE 9: AGE

Age	Number	Percentage
>20	12	6.00%
20-25	87	43.50%
25-30	75	37.50%
30-40	13	6.50%
>40	13	6.50%
<b>Total</b>	<b>200</b>	<b>100%</b>

TABLE 4: AGE

### 4.1.3 Level of education

Most of the participants, or 55.00% (110 respondents), have “Master, MBA, PhD, Dr.” level of education. “University (BSc, BBA)” level of education corresponds to 33.50% (67 respondents), while 11.50% (23 respondents) have “Upper secondary (university entrance qualification)”. Results are shown in Figure 10.

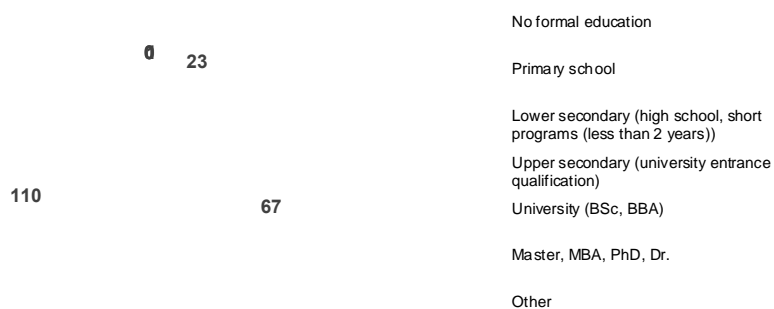


FIGURE 10: LEVEL OF EDUCATION



#### 4.1.4 Purchasing behavior

It is found in this research that the majority of participants practice their purchasing behavior both online and in-store 55.50% (112 respondents). 39.50% (78 respondents) identified online as their preferred purchasing option while 5% (10 respondents) noted purchasing in-store as their preferred purchasing option. Results are shown in Figure 11.

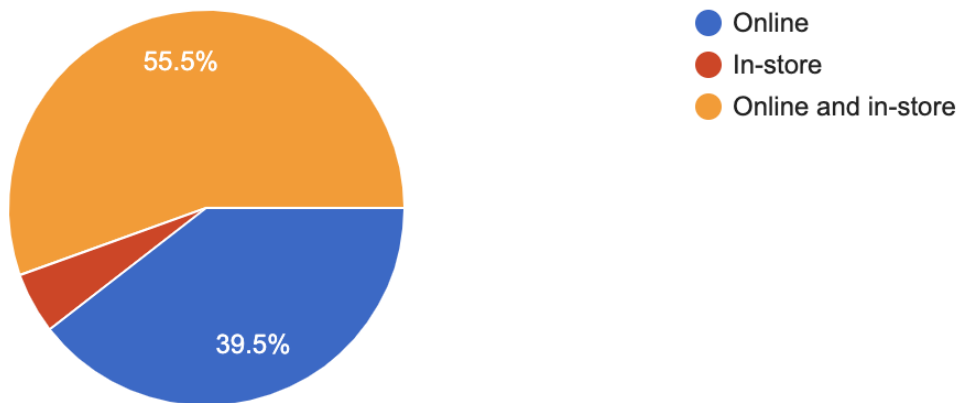


FIGURE 11: PURCHASING BEHAVIOR

#### 4.1.5 Online reviews

The following Figure 12 shows that almost all of participants read online reviews. In fact, nearly of all the 200 participants 96% (192 respondents) indicated they do read online reviews before purchasing while 4% (8 respondents) noted they do not read online reviews.

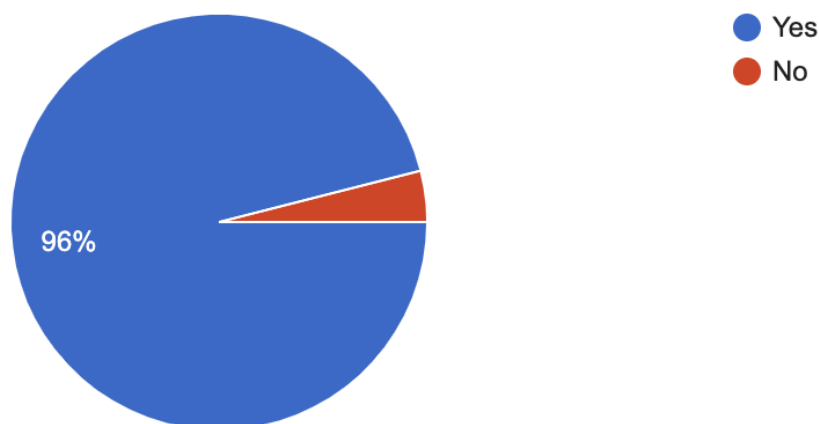


FIGURE 12: ONLINE REVIEWS

#### 4.1.6 Writing online reviews

Figure 13 shows how many reviews respondents wrote on e-commerce websites so far. The number of written reviews were divided into four groups of "1 to 3 reviews", "4 to 10 reviews", "more than 10 reviews" and "none". Out of all respondents, 112 (61.00%) indicated they wrote 1 to 3 reviews so far, 46 respondents (22.50%) indicated they wrote 4 to 10 reviews, 18 respondents noted they wrote more than 10 reviews on e-commerce websites (9.50%), while 14 respondents (7.00%) noted they did not write reviews on e-commerce websites.

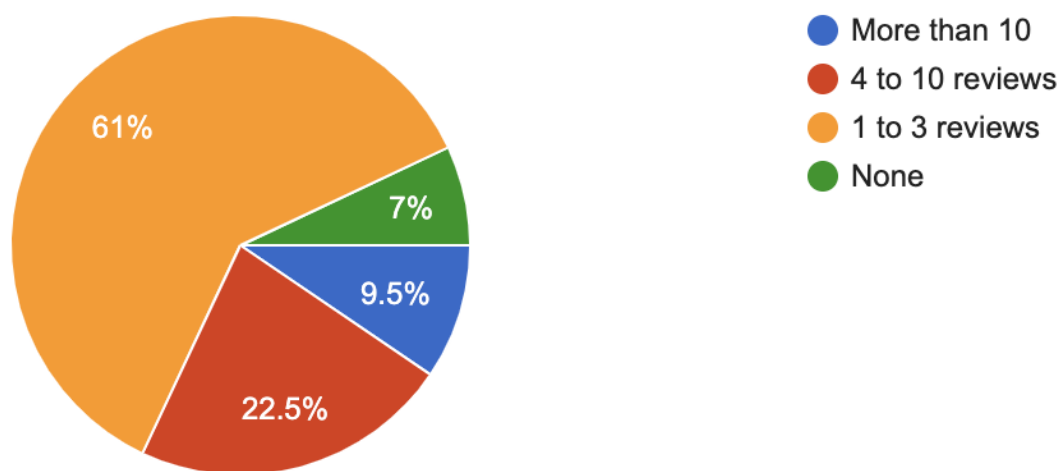


FIGURE 13: WRITING ONLINE REVIEWS

#### 4.1.7 Knowledge about beauty and personal care products

Overall, participants were asked to share if they consider themselves as well introduced into products from the beauty and personal care industry. Most respondents, namely 92.00% (185 respondents), identified themselves as well introduced while 8.00% (16 respondents) noted that they do not consider themselves as well introduced into beauty and personal care products.

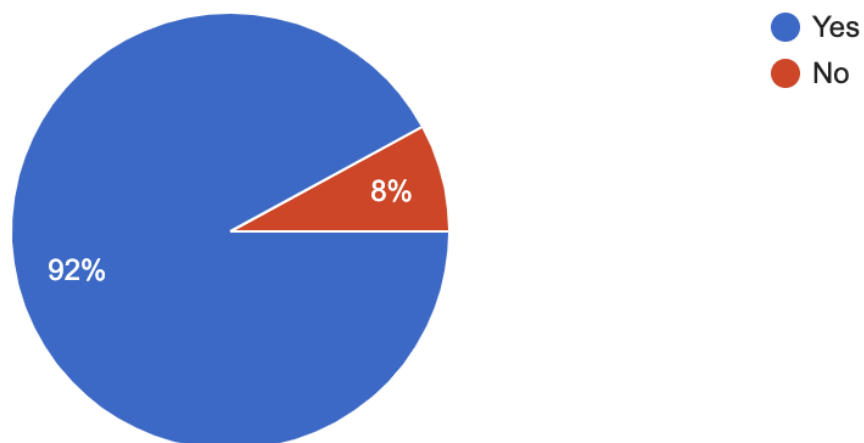


FIGURE 14: KNOWLEDGE ABOUT BEAUTY AND PERSONAL CARE PRODUCTS

## 4.2 Inferential statistics

This section provides an overview of the calculations exploring which online review characteristics have an impact on the customer's decision-making process. Each of the hypotheses that were defined in the section hypothesis development contains two independent groups of variables. Therefore, binomial tests and Wilcoxon tests were conducted. Next, in the last part of this section named exploratory statistics, the researcher performed hierarchical clustering in R to assimilate data in groups for an easier interpretation of segments. After clustering, cross tab tests were performed to research if there is a relationship between the different groups of variables. The strength of the relationship was tested with the value of Cramer V.

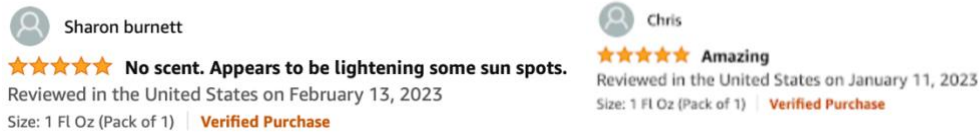
### 4.2.1 Hypothesis 1

H0: There is no significant preference for review informativeness in consumer's decision-making process.

H1: There is a significant preference for review informativeness in consumer's decision-making process.

Hypothesis 1 was analyzed through the ninth (Q9) and seventeenth (Q17) question in the online survey.

Q9: Please select what option is more relevant for you: Option 1, Option 2



**Option 1:**

**Option 2:**

On the one hand, Option 1 is an informative review that has the key product information about product scent and product effect on the skin. On the other hand, Option 2 is a short comment review where the writer emphasizes the experience of using the product but does not share any useful information about product usage, ingredients, effects. These two reviews were chosen because they show two complete opposite cases- one informative and the other non-informative. From the two photo options participants were able to read and decide which option is more relevant for their purchasing decision.

Q17: How meaningful is online review informativeness for your purchasing choice? (Extremely meaningful, very meaningful, neutral, less meaningful, not at all meaningful)

Test results: Option 1	Option 2	Binomial distribution
195	5	Probability (p)= 1.619022e-51

TABLE 5: BINOMIAL TEST

<b>Wilcoxon signed rank test</b>
<b>p&lt; 2.2e-16</b>

TABLE 6: WILCOXON SIGNED RANK TEST

The selected tests for Hypothesis 1 are the binomial test and Wilcoxon signed rank test. According to the probability result ( $p < 0.001$ ) from the binomial test presented above, a significant difference is detected in the choice from Option 1 to Option 2. People significantly prefer Option 1 (195 responses) to Option 2 (5 responses). Based on the results of the Wilcoxon signed rank test the p-value is found to have a value of  $p < 0.001$ . As p-value is less than the significance level (0.05) we accept the alternative hypothesis (H1) and reject the null hypothesis (H0). Indeed, there is a significant preference for review informativeness in consumer's decision-making process.

Based on Wilcoxon signed rank test participants were found to select from a 5-point Likert scale level of meaningfulness for review informativeness and results are presented in Figure 15 below. Comparing the results presented in Figure 15, 184 participants chose the "extremely meaningful" option for review informativeness. Next options resulted in "very meaningful" chosen by 8 participants, 4 participants indicated "neutral" an attitude towards review informativeness, while 3 participants chose "less meaningful" and 1 participant chose "not at all meaningful". Accordingly, the mean result for this question is 1.14 (Table 7).

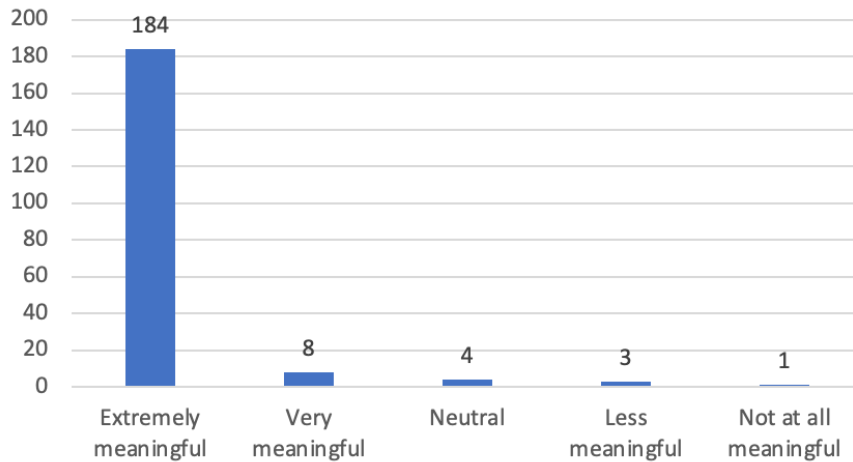


FIGURE 15: WILCOXON SIGNED RANK TEST-LEVEL OF MEANINGFULNESS RESPONSES

Min	1 <sup>st</sup> Q	Median	Mean	3 <sup>rd</sup> Q	Max
1.00	1.00	1.00	1.14	1.00	5.00

TABLE 7: WILCOXON SIGNED RANK TEST

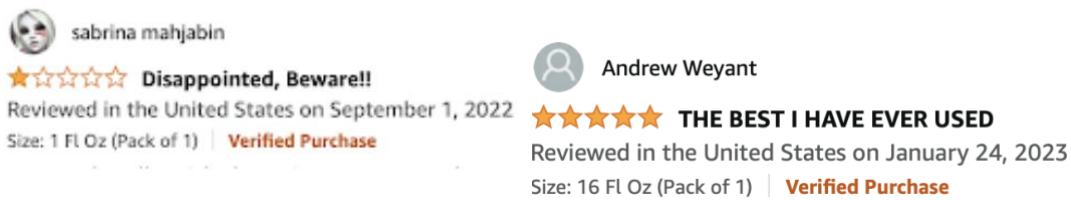
### 4.2.2 Hypothesis 2

H0: There is no significant preference for review valence in consumer's decision-making process.

H1: There is a significant preference for review valence in consumer's decision-making process.

The hypothesis 2 was analyzed through the tenth (Q10) and eighteenth (Q18) question in the online survey.

Q10: Please select what option is more relevant for you: Option 1, Option 2



**Option 1:**

**Option2:**

In tenth question (Q10), Option 1 is a very negative report where the writer states that he is disappointed with the product, while Option 2 is a review written in a very positive tone. Namely, in Option 2 the writer writes very short about the product experience and claims that this product is the best. These two options present two opposite cases and test which tone of the review is more reliable for participants- negative like in Option 1 or positive like in Option 2. Therefore, these two cases were taken to test the review valence.

Q18: How meaningful is online review valence for your purchasing choice? (Extremely meaningful, very meaningful, neutral, less meaningful, not at all meaningful)

Test results: Option 1	Option 2	Binomial distribution
12	188	Probability (p)= 4.056888e-42

TABLE 8: BINOMIAL TEST

<b>Wilcoxon signed rank test</b>
<b>p &lt; 2.2e-16</b>

TABLE 9: WILCOXON SIGNED RANK TEST

To test Hypothesis 2, the binomial test and Wilcoxon signed rank test were conducted. According to the probability result ( $p < 0.001$ ) from the binomial test presented above (Table 8), a significant difference is detected in the choice from Option 1 to Option 2. In fact, respondents significantly prefer Option 2 (188 responses) to Option 1 (12 responses). Based on the results of the Wilcoxon signed rank test the p-value is found to be  $p < 0.001$ . As the p-value is less than the significance level (0.05) we accept the alternative hypothesis (H1) and reject the null hypothesis (H0). Indeed, there is a significant preference for review valence in consumer's decision-making process.

From the results of the Wilcoxon signed rank test participants were found to select from the 5-point Likert scale the level of meaningfulness for review valence and results are presented in the Figure 16 below. Comparing the results presented in Figure 16, 119 participants chose the "extremely meaningful" option for review valence. Next option "very meaningful" was chosen by 49 participants, 27 participants indicated a "neutral" attitude towards review valence, while 4 chose "less meaningful" and 1 participant chose "not at all meaningful". The mean result for this question yields 1.59 (Table 10).

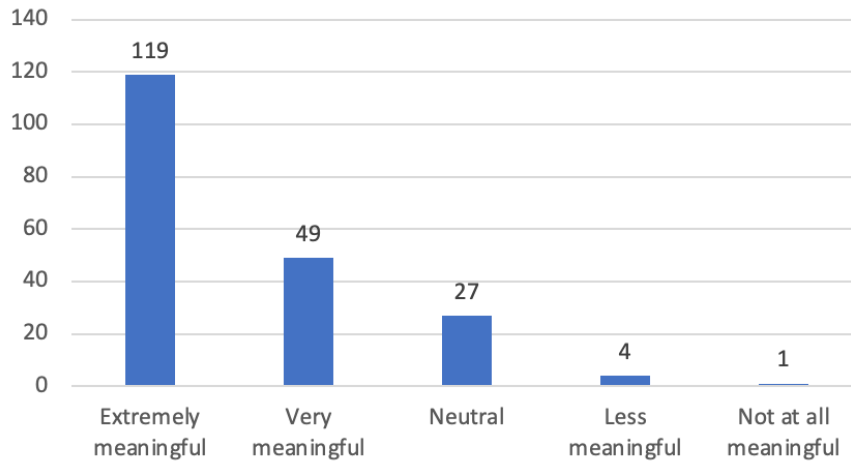


FIGURE 16: WILCOXON SIGNED RANK TEST-LEVEL OF MEANINGFULNESS RESPONSES

Min	1 <sup>st</sup> Q	Median	Mean	3 <sup>rd</sup> Q	Max
1.00	1.00	1.00	1.59	2.00	5.00

TABLE 10: WILCOXON SIGNED RANK TEST

### 4.2.3 Hypothesis 3

H0: There is no significant preference for review credibility in consumer's decision-making process.

H1: There is a significant preference for review credibility in consumer's decision-making process.

The hypothesis 3 was analyzed through the eleventh (Q11) and nineteenth (Q19) question in the online survey.

Q11: Please select what option is more relevant for you: Option 1, Option 2



**Option 1:**

**Option2:**

In this question (Q11), Option 1 is a review where the writer 's name and surname are known while Option 2 is a review written by an unknown author identified as 'Amazon Customer'. In these two reviews two opposite cases were presented and respondents can easily see the difference and decide which option is more relevant. Namely, these two reviews were taken to test how important it is for the reader to know who wrote the comment and how relevant is the review's credibility for readers' purchasing decisions.

Q19: How meaningful is online review credibility for your purchasing choice? (Extremely meaningful, very meaningful, neutral, less meaningful, not at all meaningful)

Test results: Option 1	Option 2	Binomial distribution
194	6	Probability (p)= 5.290204e-50

TABLE 11: BINOMIAL TEST



<b>Wilcoxon signed rank test</b>
<b>p &lt; 2.2e-16</b>

TABLE 12: WILCOXON SIGNED RANK TEST

To analyze Hypothesis 3 a binomial test and Wilcoxon signed rank test were conducted. Based on the probability result ( $p < 0.001$ ) from the binomial test presented above (Table 11), a significant difference is found in the choice from Option 1 to Option 2. It appears that people significantly prefer Option 1 (194 responses) to Option 2 (6 responses). Next, from the results of the Wilcoxon signed rank test the p-value is  $< 0.001$ . As the p-value is less than the significance level (0.05) we accept the alternative hypothesis (H1) and reject the null hypothesis (H0). Indeed, there is a significant preference for review credibility in the consumer's decision-making process.

According to the results of the Wilcoxon signed rank test participants were found to select from the 5-point Likert scale level of meaningfulness for review credibility and results are presented in Figure 17. Comparing the results presented in Figure 17, 169 respondents chose the "extremely meaningful" option for review valence. Next options resulted in "very meaningful" chosen by 14 respondents, 13 respondents indicated "neutral" attitude towards review credibility, while 1 respondent chose "less meaningful" and 2 respondents chose "not at all meaningful". The mean result for this question is 1.27 (Table 13).

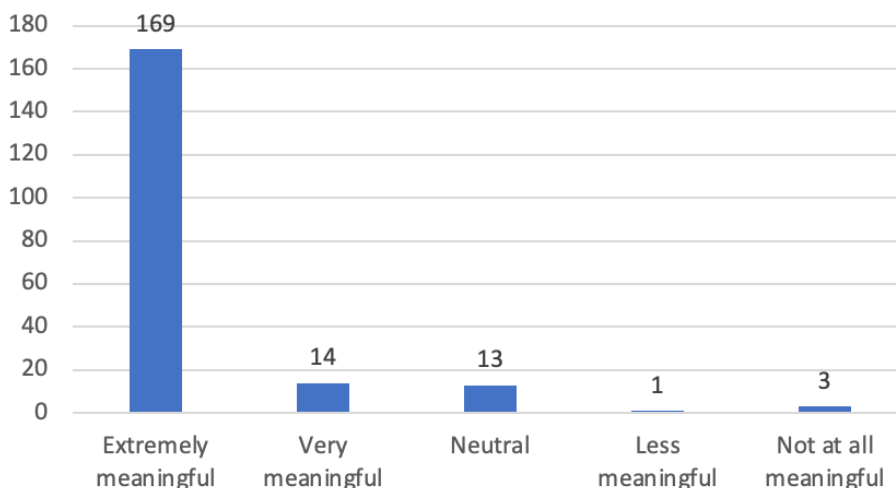


FIGURE 17: WILCOXON SIGNED RANK TEST-LEVEL OF MEANINGFULNESS RESPONSES

Min	1 <sup>st</sup> Q	Median	Mean	3 <sup>rd</sup> Q	Max
1.00	1.00	1.00	1.27	1.00	5.00

TABLE 13: WILCOXON SIGNED RANK TEST

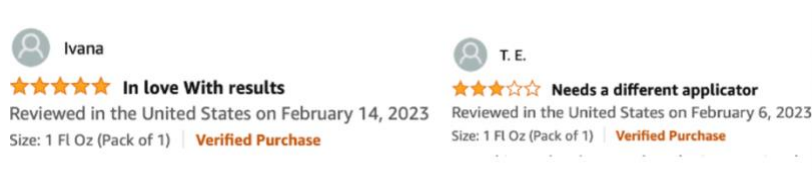
#### 4.2.4 Hypothesis 4

H0: There is no significant preference for review conformity in consumer's decision-making process.

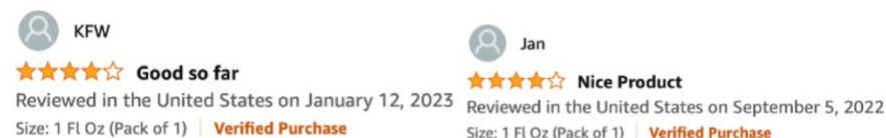
H1: There is a significant preference for review conformity in consumer's decision-making process.

The hypothesis 4 was analysed through the twelfth (Q12) and twentieth (Q20) question in the online survey.

Q12: Please select what option is more relevant for you: Option 1, Option 2



#### Option 1



#### Option 2

To test review conformity two different cases were presented. Option 1 is a case with two different opinions and ratings about the same product, while Option 2 is a case with two reviews where two different writers have similar opinions about the same product and give the same rating. These two options were taken to test whether respondents behave in accordance with

the majority of society and rely more on the similar ratings or they consider more reliable different customer opinions and ratings.

Q20: How meaningful is online review conformity for your purchasing choice?

(Extremely meaningful, very meaningful, neutral, less meaningful, not at all meaningful)

Test results: Option 1	Option 2	Binomial distribution
24	176	Probability (p)= 4.618699e-30

TABLE 14: BINOMIAL TEST

<b>Wilcoxon signed rank test</b>
<b>p&lt; 2.2e-16</b>

TABLE 15: WILCOXON SIGNED RANK TEST

The selected tests for Hypothesis 4 analysis are the binomial test and Wilcoxon signed rank test. The value of the probability result ( $p < 0.001$ ) from the binomial test above, a significant difference is detected in the choice from Option 1 to Option 2. People significantly preferred Option 2 (176 responses) to Option 1 (24 responses). Based on the results of the Wilcoxon signed rank test the p-value is found to have a value of  $p < 0.001$ . As p-value is less than the significance level (0.05) we accept the alternative hypothesis (H1) and conclude there is a significant preference for review conformity in consumer's decision-making process.

Based on Wilcoxon signed rank test participants were found to select from a 5-point Likert scale level of meaningfulness for review conformity and results are presented in Figure 18. Comparing the results presented in Figure 18, 145 participants chose the "extremely meaningful" option for review conformity. Next options resulted in "very meaningful" chosen by 19 participants, 26 participants indicated "neutral" attitude towards review conformity, while 6 participants chose "less meaningful" and 4 participants chose "not at all meaningful". Moreover, with the Wilcoxon test researcher was able to investigate min, max, mean, median and Q1-Q3 values. Accordingly, the mean result for this question results is 1.52 (Table 16).

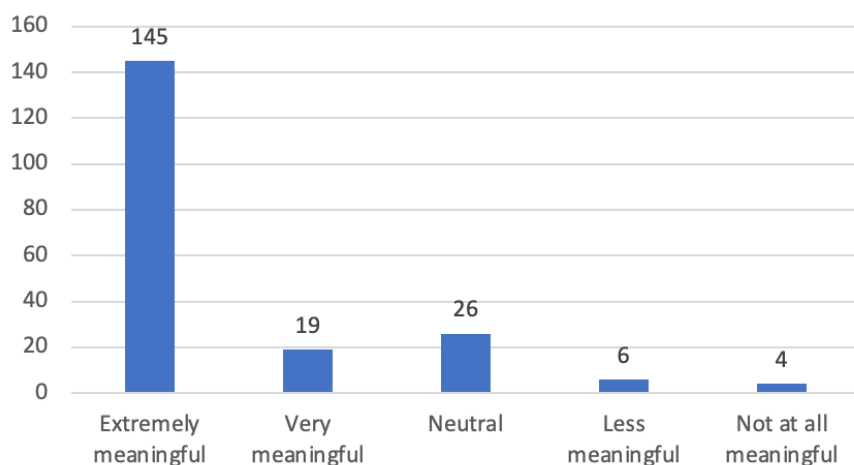


FIGURE 18: WILCOXON SIGNED RANK TEST-LEVEL OF MEANINGFULNESS RESPONSES

Min	1 <sup>st</sup> Q	Median	Mean	3 <sup>rd</sup> Q	Max
1.00	1.00	1.00	1.52	2.00	5.00

TABLE 16: WILCOXON SIGNED RANK TEST

#### 4.2.5 Hypothesis 5

H0: There is no significant preference for review readability in consumer's decision-making process.

H1: There is a significant preference for review readability in consumer's decision-making process.

The hypothesis 5 was analysed through questions thirteen (Q13) and twenty-one (Q21) in the online survey.

Q13: Please select what option is more relevant for you: Option 1, Option 2



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**Option 1:**

**Option 2:**

In Q13 two different reviews are presented. In Option 1 is a review written in complex language that is hard to understand. Option 2 is a review written in a simple language that is easy to understand for the wide audience of readers. These two different cases were used to test if respondents prefer professional reviews written in complex language or they like more reviews that are written in simple and easily understandable language.

Q21: How meaningful is online review readability for your purchasing choice?

(Extremely meaningful, very meaningful, neutral, less meaningful, not at all meaningful)

Test results: Option 1	Option 2	Binomial distribution
25	175	Probability (p)= 3.275739e-29

TABLE 17: BINOMIAL TEST

<b>Wilcoxon signed rank test</b>
<b>p &lt; 2.2e-16</b>

TABLE 18: WILCOXON SIGNED RANK TEST

To test Hypothesis 5, the binomial test and Wilcoxon signed rank test were conducted. According to the probability result ( $p < 0.001$ ) from the binomial test presented above (Table 17), a significant difference is detected in the choice from Option 1 to Option 2. It appears that respondents significantly prefer Option 2 (175 responses) to Option 1 (25 responses). Based on the results of the Wilcoxon signed rank test the p-value is found to be  $p < 0.001$ . As the p-value is

less than the significance level (0.05) we can say that there is a significant preference for review readability in consumer's decision-making process.

From the results of the Wilcoxon signed rank test participants were found to select from the 5-point Likert scale the level of meaningfulness for review readability and results are presented in Figure 19. Comparing the results presented in Figure 19, 174 participants chose the "extremely meaningful" option for review readability. Next option was "very meaningful" chosen by 18 participants, 6 participants indicated a "neutral" attitude towards review readability, while 2 chose "less meaningful" and 4 participants chose "not at all meaningful". The mean result for this question is 1.19 (Table 19).

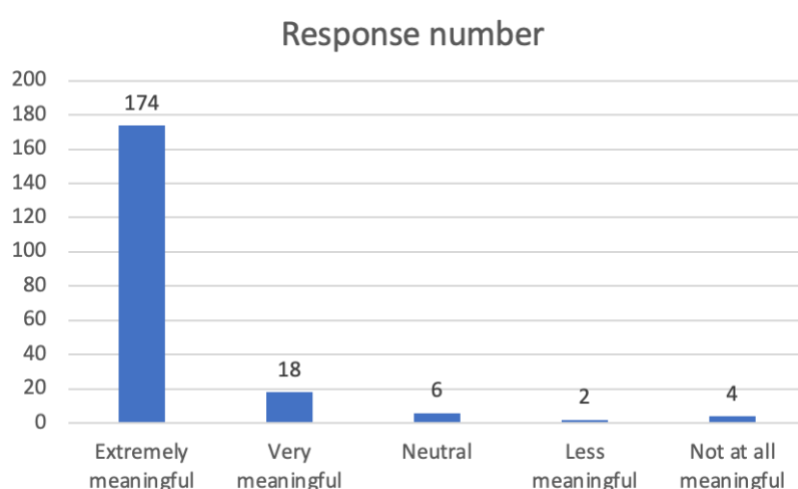


FIGURE 19: WILCOXON SIGNED RANK TEST-LEVEL OF MEANINGFULNESS RESPONSES

Min	1 <sup>st</sup> Q	Median	Mean	3 <sup>rd</sup> Q	Max
1.00	1.00	1.00	1.19	1.00	5.00

TABLE 19: WILCOXON SIGNED RANK TEST

#### 4.2.6 Hypothesis 6

H0: There is no significant preference for review length in consumer's decision-making process.

H1: There is a significant preference for review length in consumer's decision-making process.

The hypothesis 3 was analyzed through questions fourteen (Q14) and twenty-two (Q22) in the online survey.

Q14: Please select what option is more relevant for you: Option 1, Option 2

★★★★★ Martyna · 4 months ago

**Great smell**

Great product, works well

★★★★★ Tanja · 5 years ago

**"Tube of gold"**

I'm in my early 30s and I have never had any skin issues. Lately, I was having trouble with mild, stress related rosacea and was a bit reluctant to use this product because it contained alcohol. However, desperate to relieve my dehydrated skin, I gave this product a go and was not disappointed. I apply it twice a day (in the evening and in the morning), it's got very pleasant smell and just a little bit of this product will go a long way. Already after first application, my skin felt and looked better than it looked in months and the dry patches I was having were completely gone. I will definitely repurchase this product.

**Option 1:**

**Option2:**

Option 1 is a short, simple review that does not have any information about product usage, application or effect, while Option 2 is a long length review that includes a lot of important and interesting details about the product. These two cases were taken because they show two different cases of reviews, and both have an impact on the reader.

Q22: How meaningful is online review length for your purchasing choice?

(Extremely meaningful, very meaningful, neutral, less meaningful, not at all meaningful)

Test results: Option 1	Option 2	Binomial distribution
185	15	Probability (p)= 9.897117e-39

TABLE 20: BINOMIAL TEST

<b>Wilcoxon signed rank test</b>
<b>p &lt; 2.2e-16</b>

TABLE 21: WILCOXON SIGNED RANK TEST

To analyze Hypothesis 6 a binomial test and Wilcoxon signed rank test were conducted. Based on the probability result ( $p < 0.001$ ) from the binomial test presented above (Table 20), a significant difference is found in the choice from Option 1 to Option 2. It appears that people significantly prefer Option 1 (185 responses) to Option 2 (15 responses). Next, from the results

of the Wilcoxon signed rank test the p-value is <0.001. Since the p-value is less than the significant level (0.05), we accept that there is a significant preference for review length in the consumer's decision-making process

According to the results of the Wilcoxon signed rank test participants were found to select from 5-point Likert scale level of meaningfulness for review length and results are presented in the Figure 20 shown below. Comparing the results presented in Figure 20, 116 respondents chose the "very meaningful" option for review length. Next options resulted in "extremely meaningful" chosen by 69 respondents, 11 respondents indicated a "neutral" attitude towards review length, while 2 respondents chose "less meaningful", and 2 respondents chose "not at all meaningful". The mean result for this question yields 1.76 (Table 22).

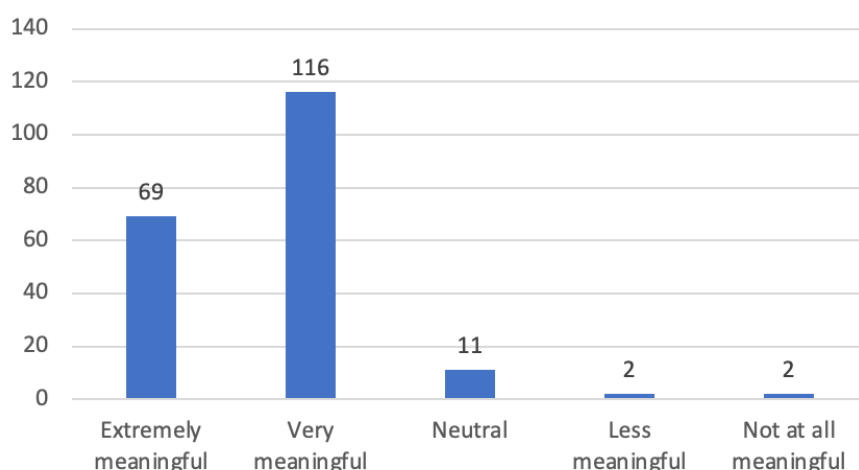


FIGURE 20: WILCOXON SIGNED RANK TEST-LEVEL OF MEANINGFULNESS RESPONSES

Min	1 <sup>st</sup> Q	Median	Mean	3 <sup>rd</sup> Q	Max
1.00	1.00	1.00	1.76	2.00	5.00

TABLE 22: WILCOXON SIGNED RANK TEST



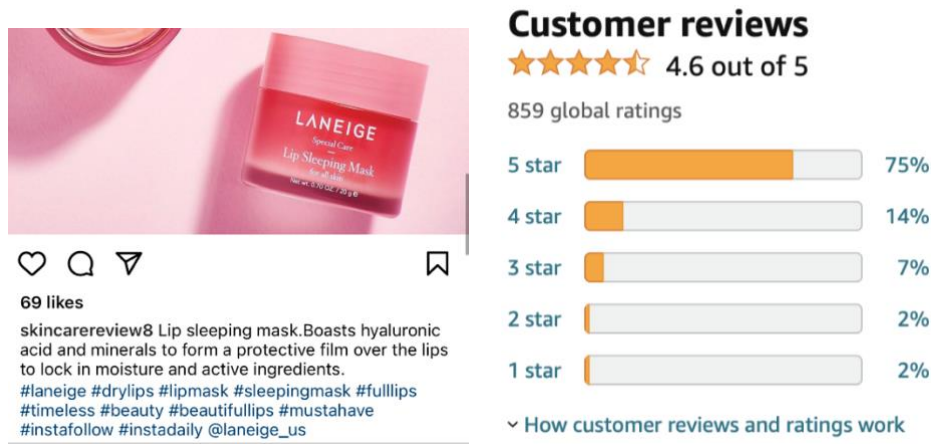
### 4.2.7 Hypothesis 7

H0: There is no significant preference for online rating in consumer's decision-making process.

H1: There is a significant preference for online rating in consumer's decision-making process.

The hypothesis 4 was analyzed through questions fifteen (Q15) and twenty-three (Q23) in the online survey.

Q15: Please select what option is more relevant for you: Option 1, Option 2



**Option 1:**

**Option2:**

First option that is shown in this question (Q15) is a review that has a picture of the product and a short comment below about product effectiveness and ingredients. Second option is an online review in the form of a star rating without any description or information written in words. These two opposite reviews were chosen to test participants' preference for the online rating.

Q23: How meaningful is online rating for your purchasing choice?

(Extremely meaningful, very meaningful, neutral, less meaningful, not at all meaningful)

Test results: Option 1	Option 2	Binomial distribution
181	19	Probability (p)= 1.237921e-34

TABLE 23: BINOMIAL TEST

<b>Wilcoxon signed rank test</b>
<b>p &lt; 2.2e-16</b>

TABLE 24: WILCOXON SIGNED RANK TEST

The selected tests for Hypothesis 7 analysis are the binomial test and Wilcoxon signed rank test. The value of the probability result ( $p < 0.001$ ) from the binomial test presented above (Table 23), a significant difference is detected in the choice from Option 1 to Option 2. People significantly prefer Option 1 (181 responses) to Option 2 (19 responses). The results of the Wilcoxon signed rank test for the Hypothesis 7 the p-value is  $< 0.001$ . As the p-value is less than the significant level (0.05) we accept the alternative hypothesis (H1) and reject the null hypothesis (H0). Indeed, there is a significant preference for online rating in the consumer's decision-making process.

Based on Wilcoxon signed rank test participants were found to select from a 5-point Likert scale level of meaningfulness for online rating and results are presented in Figure 21. Comparing the results presented in Figure 21, 182 participants chose the "extremely meaningful" option for online rating of review. Next options resulted in "very meaningful" chosen by 11 participants, 5 participants indicated a "neutral" attitude towards online rating of review, while 2 participants chose "not at all meaningful" and no one from participants chose "less meaningful". The mean result for this question is 1.14 (Table 25).

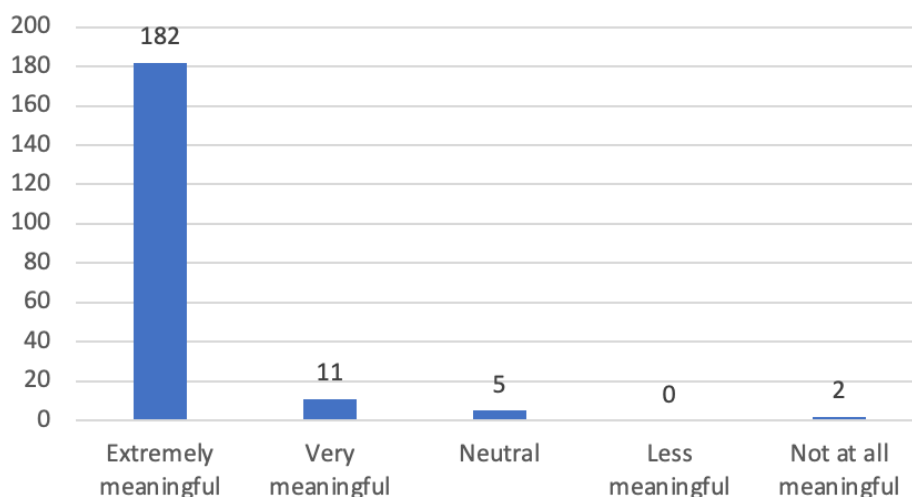


FIGURE 21: WILCOXON SIGNED RANK TEST-LEVEL OF MEANINGFULNESS RESPONSES

Min	1 <sup>st</sup> Q	Median	Mean	3 <sup>rd</sup> Q	Max
1.00	1.00	1.00	1.14	1.00	5.00

TABLE 25: WILCOXON SIGNED RANK TEST

#### 4.2.8 Hypothesis 8

H0: There is no significant preference for online response in consumer's decision-making process.

H1: There is a significant preference for online response in consumer's decision-making process.

The hypothesis 5 was analyzed through the question sixteen (Q16) and twenty-four (Q24) in the online survey.

Q16: Please select what option is more relevant for you: Option 1, Option 2



**Option 1:**

**Option2:**

In question (Q16) Option 1 is a review that has a rating 4.4 out of 5 and it has reached 1, 871 global responses, while Option 2 has the same rating of 4.4 and it has reached 65,141 global responses. These two reviews with the same star rating but different number of global responses have been presented to readers to test the importance of online response for the customer.

Q24: How meaningful is online response for your purchasing choice?

(Extremely meaningful, very meaningful, neutral, less meaningful, not at all meaningful)

Test results: Option 1	Option 2	Binomial distribution
4	196	Probability (p)= 4.108338e-53

TABLE 26: BINOMIAL TEST

Wilcoxon signed rank test
p < 2.2e-16

TABLE 27: WILCOXON SIGNED RANK TEST

To tests Hypothesis 8, the binomial test and Wilcoxon signed rank test were conducted. According to the probability result ( $p < 0.001$ ) from the binomial test (Table 26), a significant difference is detected in the choice from Option 1 to Option 2. In fact, respondents significantly prefer Option 2 (196 responses) to Option 1 (4 responses). Based on the results of the Wilcoxon signed rank test p-value is found to be  $p < 0.001$ . As p-value is less than the significant level (0.05) we accept the alternative hypothesis (H1) and state there is a significant preference for online response in consumer's decision-making process.

According to the results of the Wilcoxon signed rank test participants were found to select from the 5-point Likert scale the level of meaningfulness for online response and results are presented in Figure 22. Comparing the results presented in Figure 22, 73 respondents chose the "very meaningful" option for review length. Next, 63 respondents indicated a "neutral" attitude towards online review response, "extremely meaningful" was chosen by 55 respondents, while 6 respondents chose "less meaningful" and 3 respondents chose "not at all meaningful". The mean result for this question is 3.17 (Table 28).

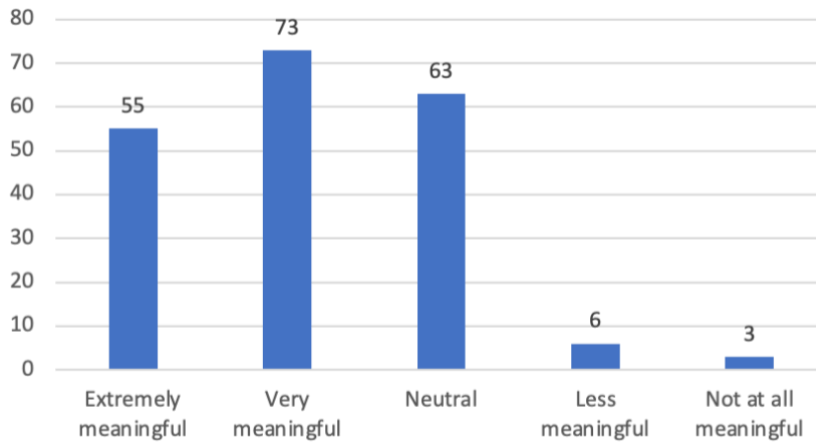


FIGURE 22: WILCOXON SIGNED RANK TEST-LEVEL OF MEANINGFULNESS RESPONSES

Min	1 <sup>st</sup> Q	Median	Mean	3 <sup>rd</sup> Q	Max
1.00	1.00	1.00	3.17	3.00	5.00

TABLE 28: WILCOXON SIGNED RANK TEST

### 4.3 Exploratory statistics

In the next step an agglomerative clustering approach was conducted, namely hierarchical cluster analysis choosing Euclidean distance and Ward’s method. While clustering the survey results three groups were distinguished and results are shown in Table 29 and Figure 23. The cluster diagram (Figure 23) exemplifies the cluster results and clearly demonstrates that the biggest group is Cluster 2 with 109 respondents (Table 29). Next, Cluster 1 can be distinguished from the Figure 23 as a middle size cluster with 77 respondents while Cluster 3 is the smallest group with 14 respondents (Table 29).

Cluster 1	Cluster 2	Cluster 3
77	109	14

TABLE 29: CLUSTERING OF RESPONSES

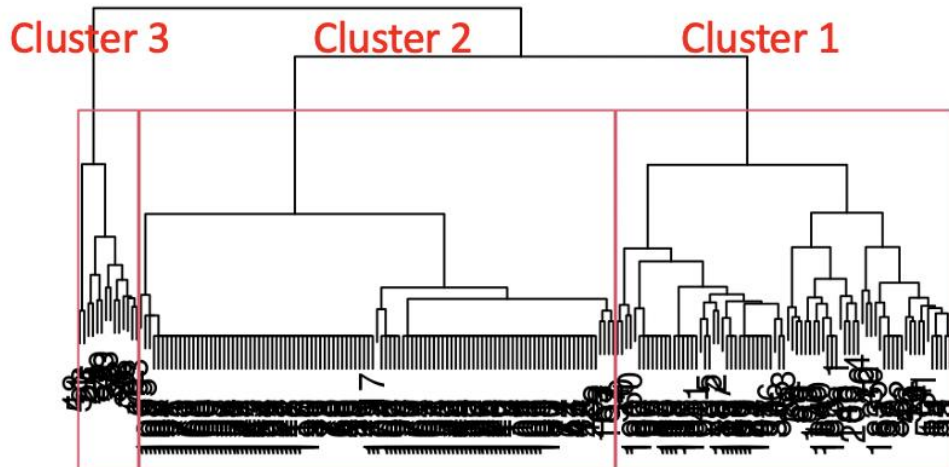


FIGURE 23: CLUSTER DIAGRAM

Before presenting the mean values of the responses regarding online product review characteristics from the three cluster groups, first we explain the overall mean values of the characteristics (shown in Table 30). In general, the lower the mean value the higher the preference for the review characteristic. According to the Table 30, the most important review characteristics for respondents are the review informativeness (mean= 1.15) and online rating (mean= 1.15). Next, important characteristics are review readability (mean=1.19) and credibility (mean= 1.28). The least important from all eight characteristics for participants is the online response (mean=2.18).

Characteristic	Mean value
Informativeness	1.15
Valence	1.60
Credibility	1.28
Conformity	1.53
Readability	1.19
Review length	1.76
Online rating	1.15
Online response	2.18

TABLE 30: MEAN VALUES OF REVIEW CHARACTERISTICS

The mean values of the responses regarding online product review characteristics for each of the three cluster groups are shown in Table 31. The higher the mean the less meaningful that specific characteristic is for the Cluster group. The smaller the mean value for the specific characteristic of the cluster group the more meaningful that specific characteristic is for the group. Respondents in the Cluster 1 have the highest preference for informativeness (mean=1.02), while the least meaningful characteristic for this group of participants is review valence (mean=2.19) (Table 31). Cluster 2 has the highest meaningfulness value for informativeness, credibility, conformity and readability (mean=1.00), while online response is the least meaningful characteristic for this cluster (Table 31). Hence, Cluster 3 showed the highest preference for review readability (mean=2.35), while the least meaningful characteristic for this group is review conformity (mean= 3.42). Overall, the highest characteristic meaningfulness values and the biggest group is Cluster 2 (109 respondents, shown in Table 29). Cluster 3 has the overall lowest meaningfulness values and this cluster group is the smallest with 14 participants (Table 29). Due to high number of respondents in Cluster 2, this cluster group has significant influence on the overall results of this research.

<b>Characteristics</b>	<b>Cluster 1</b>	<b>Cluster 2</b>	<b>Cluster 3</b>
<b>Informativeness</b>	1.02	1.0	2.92
<b>Valence</b>	2.19	1.02	2.71
<b>Credibility</b>	1.33	1.00	3.07
<b>Conformity</b>	1.92	1.00	3.42
<b>Readability</b>	1.23	1.00	2.35
<b>Review length</b>	1.22	1.99	2.92
<b>Online rating</b>	1.03	1.02	2.71
<b>Online response</b>	1.53	2.56	2.64

TABLE 31: RESULTS FROM CLUSTERING OF THREE GROUPS IN R

### **Purchasing methods: Online vs In-store**

After clustering results into three similar groups the researcher conducted crosstab tests to determine the relationship between different variables and the cluster groups. First crosstab test was made for cluster groups and respondents favorable purchasing methods (online, in store, online and in-store). Based on the crosstab results Cluster 1 prefers purchasing online (40 respondents), while Cluster 2 (69 respondents) and Cluster 3 (9 respondents) chose online and in-store as their favorable purchasing method. According to the total results respondents most favorable purchasing option is online and in-store (112 respondents), next is the online purchasing (78 respondents) and then in-store (10 respondents). The value of Cramer's V for these two variables of the cluster groups and purchasing methods is 0.2629 (in the range of 0 to 1) and it indicates a weak relationship. From the results it appears the relationship between specific purchasing method and clusters, is not very strong and we can see that cluster participants prefer different purchasing methods. The possible reason for this result can be that cluster participants are from the different age group and therefore they have different purchasing habits and preferences. Young people may prefer combination of purchasing online and in store, while people from older age groups may prefer the in store purchasing method. Results from the cross tab are shown in Table 32 and illustrated in Figure 24.

<b>Purchasing method</b>	<b>Cluster 1</b>	<b>Cluster 2</b>	<b>Cluster 3</b>	<b>Total</b>
<b>Both</b>	34	69	9	<b>112</b>
<b>In-store</b>	3	3	4	<b>10</b>
<b>Online</b>	40	37	1	<b>78</b>
<b>Total</b>	<b>77</b>	<b>109</b>	<b>14</b>	<b>200</b>

TABLE 32: CROSTAB: CLUSTER 1,2,3 AND PURCHASING METHOD



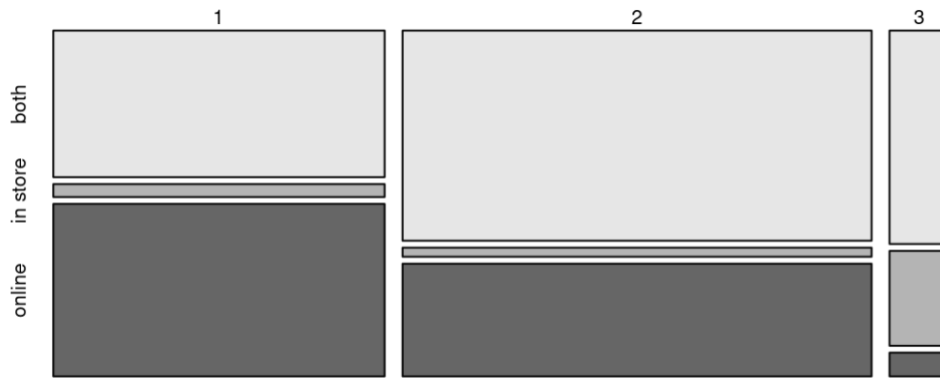


FIGURE 24: CROSSTAB: CLUSTER 1, 2, 3 AND PURCHASING METHOD

### Knowledge of Products

Second crosstab test was made for cluster membership and knowledge of products from the beauty and personal care industry (yes- well introduced, no- no knowledge for beauty and personal care products). According to the crosstab results, Cluster 2 (109 respondents) was found to be more introduced into products from beauty and personal care industry than Cluster 1 (69 respondents) and Cluster 3 (6 respondents). The value of Cramer's V for these two variables is 0.5292 (in the range of 0 to 1) and it indicates a medium strong relationship. The reason for the medium strong relationship may be the fact that most of cluster participants read reviews and gained knowledge about products. Results from the cross tab are shown in Table 33 and in Figure 25.

Knowledge	Cluster 1	Cluster 2	Cluster 3	Total
No	8	0	8	16
Yes	69	109	6	184
Total	77	109	14	200

TABLE 33: CROSSTAB: CLUSTER 1, 2, 3 AND KNOWLEDGE OF PRODUCTS



FIGURE 25: CROSSTAB: CLUSTER 1,2,3 AND KNOWLEDGE OF PRODUCTS

**Gender and purchasing methods**

Third crosstab test was made for gender and respondents favorable purchasing method (online, in store, online and in-store). Results of the crosstab claim that women prefer purchasing online (63 respondents), while male (57 respondents) chose the option of both online and in-store as their favorable purchasing method. The less favorable option for both genders is in-store purchasing where male (7 respondents) pointed out it as more favorable in comparison to female (3 respondents). The value of Cramer’s V for these two variables of gender and purchasing methods is 0.3419 (in the range of 0 to 1) and it indicates a moderate relationship. The medium strength of relationship can be explained by the fact that most of participants purchase both online and in-store no matter what gender they are. Additionally results suggest that approximately half number of respondents purchase online and in store and support the medium strength of relationship. Results from the cross tab are shown in Table 34 and illustrated in Figure 26.

Purchasing method	Both	In store	Online	Total
Female	55	3	63	121
Male	57	7	15	79
Total	112	10	78	200

TABLE 34: CROSSTAB: GENDER AND PURCHASING METHOD

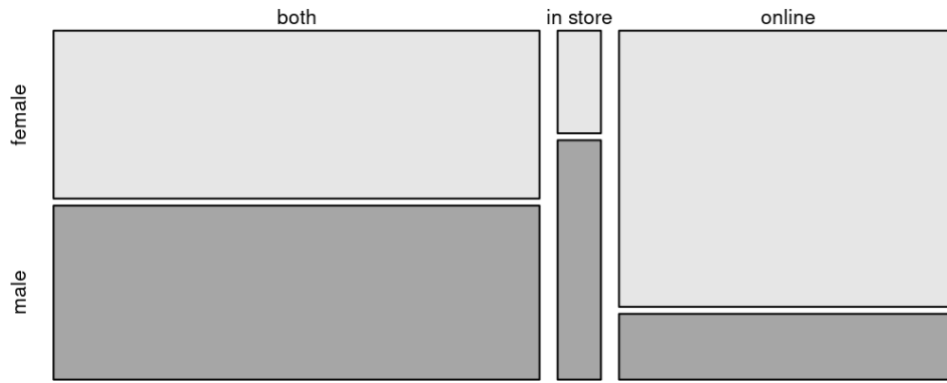


FIGURE 26: CROSSTAB: GENDER AND PURCHASING METHOD

**Gender and knowledge of products**

Fourth crosstab test was made for gender and knowledge of products from beauty and personal care industry (yes- well introduced, no- no knowledge for beauty and personal care products). Based on the crosstab results women are more introduced into beauty and personal care products (118 respondents), while male (66 respondents) is less introduced. Overall, 184 participants indicated they have the knowledge while, 16 participants indicated they do not have the knowledge about products from this industry. The value of the Cramer’s V for these two variables of gender and purchasing methods is 0.2518 (in the range of 0 to 1) and it indicates a weak relationship. The reason for this result can be that no matter what gender participants are they all read reviews and in that way gain the knowledge about products. Results from the cross tab are shown in Table 35 and illustrated in Figure 27.

Knowledge	Female	Male	Total
No	3	13	16
Yes	118	66	184
Total	121	79	200

TABLE 35: CROSSTAB: GENDER AND KNOWLEDGE OF PRODUCTS

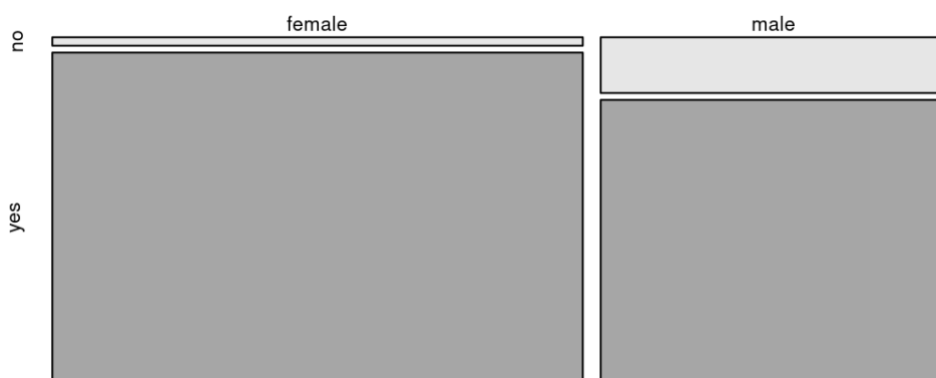


FIGURE 27: CROSSTAB: GENDER AND KNOWLEDGE OF PRODUCTS

**Reading reviews and knowledge of products**

Fifth, a crosstab test was made for reading reviews (yes, no) and knowledge of products from beauty and personal care industry (yes- well introduced, no- no knowledge for beauty and personal care products). It appears that people who read reviews have knowledge of products (180 respondents). According to results people who do not read reviews do not have knowledge about products (4 respondents). The value of the Cramer’s V for these two variables of gender and purchasing methods is 0.316 (in the range of 0 to 1) and it indicates a moderate relationship. Therefore, it is clear that the relationship between reading reviews and knowledge of products can be explained by the fact that when people read reviews, they gain knowledge about products and its usage. Results from cross tab are shown in Table 36 and illustrated in the Figure 28.

Knowledge	Not reading reviews	Yes reading reviews	Total
No	4	12	16
Yes	4	180	184
Total	8	192	200

TABLE 36: CROSSTAB: READING REVIEWS AND KNOWLEDGE OF PRODUCTS

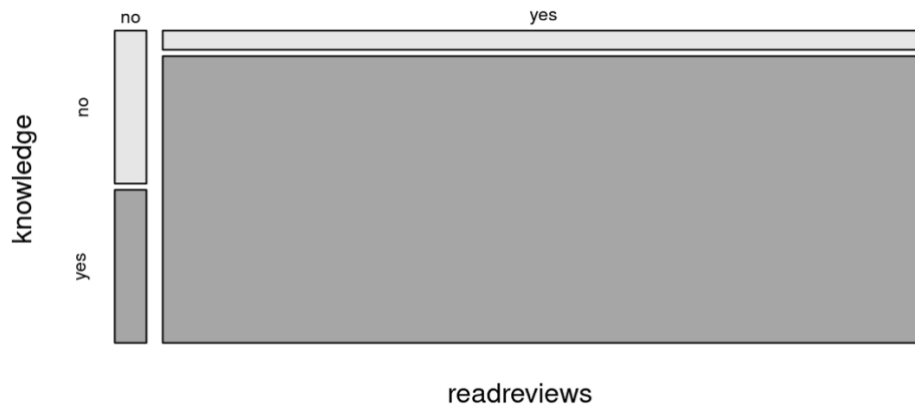


FIGURE 28: CROSSTAB: READING REVIEWS AND KNOWLEDGE OF PRODUCTS

## 5 DISCUSSION

In this chapter findings that were presented in the previous section of this research will be discussed. Nowadays, in the period of the expansion of online networks and e-commerce websites, providing consumers with the option to write, share and read online product reviews has become an essential part of almost every e-commerce website (Purnawirawan et al., 2012). Indeed, according to Jensen et al. (2013) online product reviews are highly utilized by consumers and aim to shape their opinion and drive their purchasing choice.

The goal of this research was to investigate the impact of different product reviews' characteristics on the consumer's purchasing choice, the influence of the reviews written on e-commerce websites and understand what specific characteristics of beauty and personal care product reviews impact consumer's perspective toward products. Overall, among eight predefined hypotheses, all tested hypotheses revealed a significant preference of consumers toward online product review characteristics. Hence, some characteristics were considered as more meaningful and important for consumers choice than the other product review characteristics.

The first hypothesis of this research tested the relationship between independent variable "informativeness of online review" and dependent variable "consumer's decision-making process". These variables were tested through two questions in the online questionnaire (Q9 and Q17). Question nine indirectly tested the importance of this characteristic for the participant by presenting two pictures with different reviews where Option 1 was a highly informative review describing the scent, application and appearance of the product (see Appendix 1 Q9). On the other hand, Option 2 was a short comment "Amazing" (see Appendix1 Q9) which did not give any information about product ingredients and application but just the short description of the experience. According to results of the binomial test ( $p < 0.001$ ) it was found that there is a significant difference in the choice of participants. In fact, Option 1 was chosen by 195 respondents and Option 2 by 5 respondents. Moreover, in the second type of question- question seventeen (see Appendix 1 Q17) participants were directly asked to identify on the 5-point Likert scale the meaningfulness of the review informativeness for their purchasing choice. Results of the Wilcoxon signed rank test show that most of the respondents (184) picked "extremely meaningful" for review informativeness while only one respondent picked the option "not meaningful at all". Furthermore, findings of this statistical test showed that the mean value for

this question of the review informativeness is 1.11 and hence it is one of the smallest mean values in the range of all tested characteristics in this primary research. Therefore, we can conclude that review informativeness is one of the most impactful and important characteristics of online product review for consumer's purchasing choice. This finding is supported by Sun et al. (2019) who state that this characteristic is significantly important for consumers because of the evidence, information and experiences that are written in this type of online review.

The second hypothesis of this research tested the relationship between the independent variable "valence of review" and dependent variable "consumer's decision-making process". These variables were tested through two questions in the online questionnaire (Q10 and Q18). Q10 indirectly tested the importance of this characteristic for the participant by presenting two picture options with different reviews. Option 1 was a review with a very negative tone (see Appendix 1 Q10), while Option 2 (see Appendix1 Q10) was extremely positive, and the user described the product as the best product they used. According to the results of the binomial test ( $p < 0.001$ ) it was found that there is a significant difference in the choice of participants between these two options. In fact, Option 1 was chosen by 12 participants while 188 participants chose Option 2. Moreover, in the second type of question- Q18 (see Appendix 1 Q18) participants were directly asked to identify on the 5-point Likert scale the meaningfulness of the review valence for their purchasing choice. The value of the mean is 1.59 for this question and this value identifies that the valence characteristic according to this primary research results is found to be an important characteristic of online product reviews for consumer's purchasing choice. From these results it can be concluded that respondents prefer a more positive tone in online reviews and are keen to trust this type of review more than negative reviews. We can draw a parallel between these results and findings of Pan and Zhang (2011) that state that positive online reviews are considered by consumers as more useful than negative reviews.

The third hypothesis analyzed the relationship between the independent variable "credibility of online review" and the dependent variable "consumer's decision-making process". These variables were tested through two questions in the online questionnaire (Q11 and Q19). Q11 indirectly tested the review characteristic through two picture options with different reviews. Option 1 was a review that was written by the person whose identity and name was known (see Appendix 1 Q11), while Option 2 was a review written by an unknown person called "Amazon customer" (see Appendix1 Q11). According to the results of the binomial test ( $p < 0.001$ ) it was found that there is significant difference in participants' choice of these two options. In fact, Option 1 was chosen by 194 respondents and Option 2 by 6 respondents. The results show that

respondents prefer to know who wrote the review they are reading rather than a review from an anonymous person. Moreover, in the second type of question- Q19 (see Appendix 1 Q19) participants were asked to identify the meaningfulness of the review credibility for their purchasing choice. Results of the Wilcoxon signed rank test show that most of the respondents (169) chose "extremely meaningful" for review informativeness while three respondents chose the option "not meaningful at all". Furthermore, findings of this statistical test showed that the value of the mean is 1.59 for this question and this value shows that the credibility of review is found to be important and extremely meaningful for consumer's purchasing choice. This finding is supported by Mackiewicz (2015) who noted in his study that readers perceive reviews as more credible when they know the name of the person who wrote that review.

The fourth hypothesis of this research tested the relationship between the independent variable "conformity of review" and the dependent variable "consumer's decision-making process". These variables were tested through two questions in the online questionnaire (Q12 and Q20). In Q12 Option 1 was a picture with two reviews that had different ratings (see Appendix 1 Q12), while Option 2 (see Appendix1 Q12) a picture with two reviews that had the same ratings. Results of the binomial test ( $p < .001$ ) claim that there is a significant difference in the choice of participants between these two options. In fact, Option 1 was chosen by 24 participants while 176 participants chose Option 2. Moreover, in the second type of question- question 20 (see Appendix 1 Q20) results of the Wilcoxon signed rank test show that 145 respondents identify "extremely meaningful" for review conformity while 4 respondents identified this characteristic as "not meaningful at all". The value of the mean is 1.52 for this question and this value identifies that conformity of online reviews is found to be an important characteristic of online product reviews for consumer's purchasing choice. In fact, results of both tests that were conducted in this research show that participants are keen to consider reviews that are in correspondence with other ratings as more credible. This finding is supported by Korfiatis et al. (2012) who state that reviews who correspond in ratings are more impactful for consumer's perception toward product than reviews who exhibit different opinions.

The fifth hypothesis of this research tested the relationship between independent variable "readability of review" and dependent variable "consumer's decision-making process" (Q13 and Q21). Q13 (indirectly tested) the importance of this characteristic for the participant through two photo options with different scenarios. Option 1 was a review written in the complex language where the writer wrote some professional terms that may not be known to everyone (see Appendix 1 Q12), while Option 2 (see Appendix1 Q12) is a picture with a review written in



simple words. According to results of the Binomial test ( $p < 0.001$ ) it was found that there is a significant difference in the choice of participants between these two options. In fact, Option 1 was chosen by 25 participants while 175 participants chose Option 2. Moreover, in Q21 (see Appendix 1 Q21) results of the Wilcoxon signed rank test show that 174 respondents identify "extremely meaningful" for review conformity while 4 respondents identified this characteristic as "not meaningful at all" (Q21). The value of the mean is 1.19 for this question and this value shows that readability of online reviews is found to be a very important characteristic of online product reviews for consumer's purchasing choice. Results of both tests show that participants prefer reviews that are written in simple and understandable language rather than reviews written in the complex language. According to Mackiewicz (2015) simple reviews with key information are comfortable to be understood by readers and consumers are therefore likely to be influenced by them.

The sixth hypothesis of this research tested the relationship between independent variable "review length" and dependent variable "consumer's decision-making process". These variables were tested through two questions in the online questionnaire (Q14 and Q22). Q14 consisted of two photo options where Option 1 was a short text and Option 2 was a very long length text review (see Appendix 1 Q14). Based on the results of the binomial test ( $p < 0.001$ ) it was found that there is a significant difference in the choice of participants between these two options. Moreover, in the second type of question- Q22 (see Appendix 1 Q22) participants were directly asked to identify on the 5-point Likert scale the meaningfulness of the review length for their purchasing choice. The value of the mean is 1.76 for this question and it shows that the review length according to these primary research results is found to be an important characteristic of online product reviews for consumer's purchasing choice. Based on the results from this primary research it can be concluded that the review length is important and that short reviews have more impact on consumers rather than long length reviews because short reviews are concise and easier to read and understand.

The seventh hypothesis analyzed the relationship between the independent variable "online rating" and dependent variable "consumer's decision-making process" (Q15 and Q23). Q15 had two options presented in photos. Option 1 is a review with rating in the text while Option 2 only shows product rating. According to results of the binomial test ( $p < 0.001$ ) it was found that there is significant difference in the choice of participants. In the second type of question- Q23 (see Appendix 1 Q23) most of the respondents (182) chose "extremely meaningful" for review rating while only two respondents chose the option "not meaningful at all", according to Wilcoxon

signed rank test. Furthermore, the mean value for this question is 1.14 and hence it is the second smallest mean value in the range of all tested characteristics in this primary research. Therefore, we can conclude that the online rating is one of the most impactful and most important characteristics of online product reviews for consumer's purchasing choice. This finding is supported by Lackermair et al. (2013) who state in their study that online rating is significantly important for consumer's purchasing choice because it is the first indicator to consumers of how good the product is.

The eight hypotheses of this research tested the relationship between independent variable "online response" and dependent variable "consumer's decision-making process", through Q16 and Q24. Q16 indirectly tested the characteristic through two photo options with reviews of the same rating but with different responses. Option 1 is a review that has a global response of 1,871 while Option 2 is a review that has a global response of 65,141 (see Appendix 1 Q16). Binomial test determined that there is a significant difference in the choice of participants between these two options. Moreover, in the second type of question- Q24 (see Appendix 1 Q24) the value of the mean is 3.17 for this question and this value shows that online response according to this primary research results is found to be the least important characteristic from all the tested characteristics of online product review for consumer's purchasing choice. From the results of this study, it can be concluded that participants perceive short informative reviews as more meaningful toward their product perception and purchasing choice than the number of online rating responses. However, if customers only have the option of referring to online reviews with star or number rating, they are significantly keen to consider reviews with higher global response as more credible than the one with a smaller number of online responses.

Overall, this study which investigated what characteristics of online product reviews impact the customer's decision-making process found that all the tested characteristics are meaningful and that there is a significant preference for all these characteristics for consumer's decision-making process. Additionally, the exploratory statistic section that was discussed in the chapter of the survey results, shows additional findings that can be further discussed. From the mean values of the review characteristics from Table 30 in the previous chapter of results the meaningfulness of online review characteristics from participants' perception can be ordered. Mean values are illustrated with the line graph in Figure 29. According to results the most meaningful and significant characteristics of online product review are the review informativeness and online rating with the mean=1.15. Next in order of meaningfulness is review readability with the mean=1.19.

Further, important characteristics according to results are credibility (mean=1.28), conformity (mean=1.53), valence (mean=1.60), review length (mean=1.76) and online response (mean=2.18). In general, these findings can be explained by the fact that the review has to contain key information and be easy to read and understand to be useful and meaningful for customers' decision-making process.

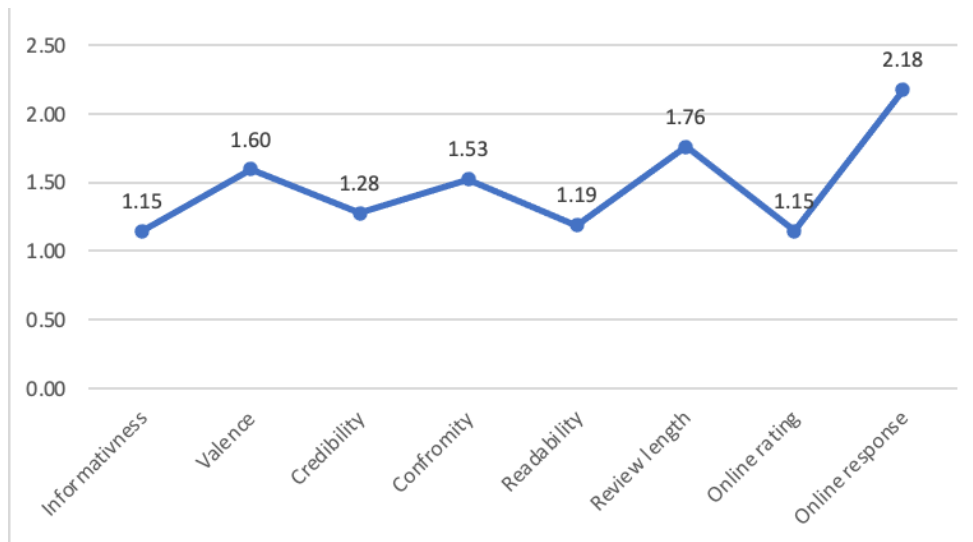


FIGURE 29: MEAN VALUES OF REVIEW CHARACTERISTICS

## 6 CONCLUSION AND RECOMMENDATIONS

The purpose of this research was to assess and analyze what characteristics of online product reviews impact customer's decision-making process. In fact, this study was set to understand the impact of online product reviews from consumer's perspective in the beauty and personal care industry. Therefore, the author reviewed the literature and previous studies on the topic of online product reviews and its impact on the purchasing choice. The primary data of this research were collected through an online questionnaire which the author created based on eight predefined hypotheses. This online questionnaire which was distributed through online networks collected 200 responses. Results of the conducted research strongly support the predefined hypotheses. In fact, all eight hypotheses were detected to have a significant statistical result for consumers' purchasing choice. Namely, all tested characteristics resulted in respondents having a significant preference for review's informativeness, valence, credibility, conformity, readability, review length, online rating, and online response in consumer's decision-making process.

The relation between each characteristic and consumer's choice is found to be strong and based on the results of the statistical tests that were performed. The author detected for which characteristic out of all tested ones, respondents indicated the most significant preference. As a result, review informativeness was found to be the most significant together with online rating and review readability. Besides mentioned characteristics of the online product review, the author found that respondents had a significant preference also for review credibility, conformity, valence, review length and online response. When examining the relationship between the preferred purchasing method, combination of in-store and online purchasing methods appears to be most favorable to the majority of respondents followed by the second favorite which is online shopping and then in-store purchasing. Further, research results show that people who tend to read reviews often have the knowledge about products from the beauty and personal care industry. Since most of the participants indicated that they do read online reviews one can conclude that the impact of the online reviews on consumer's purchasing choice is significant and people do not consider online reviews as an option but as an expectation from e-commerce platforms (Askalidis & Malthouse, 2016).

The findings of conducted research resulted in supporting a significant relationship for the tested hypotheses. The dominant level of specific characteristics such as review informativeness and review readability are found to be positively correlated with customers creating an opinion about a product and making a purchasing choice based on information written in the review. Therefore, clear written and understandable reviews with key product performance information and clear product rating number have a powerful influence on consumers purchasing choice when shopping products from the beauty and personal care industry. Subsequently, no previous findings about this specific topic but results of this research correspond to the findings of Sun et al. (2019) and Mackiewicz (2015) who state in their studies that simple reviews with key information about product experience are significantly important and evidence for consumers to make their purchasing decision. The inevitable presence and further development of the powerful digitalization phenomenon of online product reviews in daily life can be considered as an indispensable asset for the brand's product recognition and powerful source of information for customer's buying decision (Lackermair et al., 2013).

### **6.1 Limitations and future research**

Despite research providing a clear understanding of how online review characteristics of products from the beauty and personal care industry impact consumer's decision-making process, there are a number of limitations that should be identified. Even though the population sample of 200 individuals is satisfactory to analyze the research question, the sample size is still very small. Therefore, in the hypothesis testing the Type II error could be found because the sample size was not large enough to achieve clear results and the null hypothesis was failed to be rejected. Also, most of the participants in the online questionnaire were female and having equal distribution of female and male participants could have delivered more accurate results. Moreover, questions in the survey were limited with focusing only on online reviews for products from the beauty and personal care industry. Since research was limited to online reviews for products only from the beauty and personal care industry, discovered results cannot be generalized to all online product reviews and their influence on consumers' purchasing decisions.

Another limitation is that the questionnaire was only distributed online through an online network. So people who do not have access to the Internet were not able to share their opinion and answer the online questionnaire. Next, most of the respondents were young adults with the mean age of 27 years. Even though some respondents were also from the older age range the results cannot be generalized to the whole population. The conducted research was quantitative, and the style of the research did not allow research to gain in-depth understanding and deep thoughts from participants regarding this topic. Participants were limited to answering close-ended questions with Option 1 or Option 2, yes or no answers, and with the five-point Likert scale determining the level of meaningfulness. Overall, there is room for future research and for researchers to get more reliable results by conducting the research not only online but also offline and introducing in-depth interviews to get the deep understanding of participants for the topic of online product reviews. Also, there are many more online review characteristics that could be tested in the future besides the eight characteristics that the author chose in this study. Moreover, online reviews for products from different industries may lead to different results in meaningfulness of the tested characteristics. Another possibility for the improvement in the future research can be to perform a conjoint analysis on a larger sample size. This is a good statistical solution to determine how people value different review characteristics. This information can be useful for many e-marketers to make their website match the consumer preferences.

## **6.2 Managerial implications**

This research contributed to the study of consumer online behavior and created useful managerial implications. In the time of the outbreak of many online shopping tools and e-commerce websites, brand managers should understand the important benefits of using the powerful tool of online reviews to advance their business and improve the products' sales. Online reviews are not considered anymore as an option but certainly as an expectation from customers for e-commerce platforms (Askalidis & Malthouse, 2016). Online reviews enable customers to gain a perception and create an opinion toward products before experiencing it in person. The ability for consumers to voluntarily share their thoughts online with the world and be able to discuss the advantages and disadvantages of the products creates a powerful source of information for customers and businesses. The intense competition of the infinite number of

products that are available on the market and numerous e-commerce platforms that sell these products create a serious challenge for managers to succeed in selling their products to the world. Therefore, it is of immense importance that e-commerce managers recognize the importance of online reviews and enable users an easy way to leave a comment at the product page and share their opinion. This can be done by managers applying the recent updates and digitalization improvements into their e-commerce businesses to allow efficient writing of online reviews. Overall, the findings of this research present many advantages of evolving into the creation of online reviews on e-commerce platforms. In order to attract more customers and create a valuable source of information, e-commerce platforms should establish a special manager function in their marketing departments that will track online reviews, engage with customers and try developing more traffic on their e-commerce platform.

## 7 BIBLIOGRAPHY

### A

- Abdul Manan, H., Ariffin, S., Ratul Maknu, T. S., & Zakaria, F. N. (2020). Effects of social media advertisements on intention to purchase health and beauty products. *Journal of International Business, Economics and Entrepreneurship*, 5(1), 59–68. <https://doi.org/10.24191/jibe.v5i1.14293>
- Anitha, N. (2015). Consumer preference towards online retailing. *ICTACT Journal on Management Studies*, 1(2), 74–80. <https://doi.org/10.21917/ijms.2015.0011>
- Askalidis, G., & Malthouse, E. C. (2016). The value of online customer reviews. ACM Conference on Recommender Systems, 155–158.

### B

- Bailey, A. A. (2005). Consumer awareness and use of product review websites. *Journal of Interactive Advertising*, 6(1), 68–81. <https://doi.org/10.1080/15252019.2005.10722109>
- Barmola, K. C., & Srivastava, S. K. (2010). The role of consumer behaviour in present marketing management scenario. *Productivity*, 51(3), 268–275. [https://www.researchgate.net/publication/333774589\\_THE\\_ROLE\\_OF\\_CONSUMER\\_BEHAVIOUR\\_IN\\_PRESENT\\_MARKETING\\_MANAGEMENT\\_SCENARIO](https://www.researchgate.net/publication/333774589_THE_ROLE_OF_CONSUMER_BEHAVIOUR_IN_PRESENT_MARKETING_MANAGEMENT_SCENARIO)
- Bickart, B., & Schindler, R. M. (2001). Internet forums as influential sources of consumer information. *Journal of Interactive Marketing*, 15(3), 31-40. <https://doi.org/10.1002/dir.1014.abs>
- Bruning, P. F., Alge, B. J., & Lin, H.-C. (2020). Social networks and social media: Understanding and managing influence vulnerability in a connected society. *Business Horizons*, 63(6), 749–761. <https://doi.org/10.1016/j.bushor.2020.07.007>
- Bughulashvili, M. (2013). The Perception Process: Its Application to Work Settings. *Journal of Business*, 2(1), 9–13. <https://doi.org/10.31578/v2i1.47>

### C

- Cassell, J., & Bickmore, T. (2000). External manifestations of trustworthiness in the interface. *Communications of the ACM*, 43(12), 50–56. <https://doi.org/10.1145/355112.355123>
- Changchit, C., Klaus, T., & Lonkani, R. (2020). Online Reviews: What drives consumers to use them. *Journal of Computer Information Systems*, 62(2), 1–10. <https://doi.org/10.1080/08874417.2020.1779149>
- Chevalier, S. (2022a). *Global retail site device visit & order share 2019*. Statista. <https://www.statista.com/statistics/568684/e-commerce-website-visit-and-orders-by-device/>



Chevalier, S. (2022b, September 21). *Global retail e-commerce market size 2014-2026*. Statista.  
<https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/>

Chua, A. Y. K., & Banerjee, S. (2014). Understanding review helpfulness as a function of reviewer reputation, review rating, and review depth. *Journal of the Association for Information Science and Technology*, 66(2), 354–362. <https://doi.org/10.1002/asi.23180>

Constantinides, E., & Fountain, S. J. (2008). Web 2.0: Conceptual foundations and marketing issues. *Journal of Direct, Data and Digital Marketing Practice*, 9(3), 231–244.  
<https://doi.org/10.1057/palgrave.ddmp.4350098>

## D

Dellarocas, C. N. (2003). The digitization of word-of-mouth: Promise and challenges of online feedback mechanisms. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.393042>

Dixon, S. (2018). *Trust in online customer reviews 2018*. Statista; Statista.  
<https://www.statista.com/statistics/315755/online-customer-review-trust/>

## E

East, R., Hammond, K., & Lomax, W. (2008). Measuring the impact of positive and negative word of mouth on brand purchase probability. *International Journal of Research in Marketing*, 25(3), 215–224. <https://doi.org/10.1016/j.ijresmar.2008.04.001>

## G

Gounaris, S., Dimitriadis, S., & Stathakopoulos, V. (2010). An examination of the effects of service quality and satisfaction on customers' behavioral intentions in e-shopping. *Journal of Services Marketing*, 24(2), 142–156. <https://doi.org/10.1108/08876041011031118>

## H

Hennig-Thurau, T., Gwinner, K. P., Walsh, G., & Gremler, D. D. (2004). Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the Internet? *Journal of Interactive Marketing*, 18(1), 38–52.  
<https://www.sciencedirect.com/science/article/pii/S1094996804700961>

Hong, H., Xu, D., Wang, G. A., & Fan, W. (2017). Understanding the determinants of online review helpfulness: A meta-analytic investigation. *Decision Support Systems*, 102, 1–11.  
<https://doi.org/10.1016/j.dss.2017.06.007>

## I

Ismagilova, E., Dwivedi, Y. K., Slade, E., & Williams, M. D. (2017). Electronic word of mouth (eWOM) in the marketing context: A state of the art analysis and future directions. In *New York City: Springer International Publishing*. Springer International Publishing.

**J**

- Jain, V., Malviya, B., & Arya, S. (2021). An overview of electronic commerce (e-commerce). *Journal of Contemporary Issues in Business and Government*, 27(3), 665-670. <https://doi.org/10.47750/cibg.2021.27.03.090>
- Jalilvand, M. R., Esfahani, S. S., & Samiei, N. (2011). Electronic word-of-mouth: Challenges and opportunities. *Procedia Computer Science*, 3(1), 42–46. <https://doi.org/10.1016/j.procs.2010.12.008>
- Jensen, M. L., Averbek, J. M., Zhang, Z., & Wright, K. B. (2013). Credibility of anonymous online product reviews: A language expectancy perspective. *Journal of Management Information Systems*, 30(1), 293–324. <https://doi.org/10.2753/mis0742-1222300109>
- Jeong, E., & Jang, S. (Shawn). (2011). Restaurant experiences triggering positive electronic word-of-mouth (eWOM) motivations. *International Journal of Hospitality Management*, 30(2), 356–366. <https://doi.org/10.1016/j.ijhm.2010.08.005>
- Jepsen, A. L. (2007). Factors affecting consumer use of the Internet for information search. *Journal of Interactive Marketing*, 21(3), 21–34. <https://doi.org/10.1002/dir.20083>

**K**

- Kazdin, A. E. (1992). Research design in clinical psychology. Allyn And Bacon.
- Khan, A. G. (2016). Electronic commerce: A study on benefits and challenges in an emerging economy. *Global Journal of Management and Business Research: B Economics and Commerce*, 16(1), 19–22. [https://globaljournals.org/GJMBR\\_Volume16/3-Electronic-Commerce-A-Study.pdf](https://globaljournals.org/GJMBR_Volume16/3-Electronic-Commerce-A-Study.pdf)
- Korfiatis, N., García-Bariocanal, E., & Sánchez-Alonso, S. (2012). Evaluating content quality and helpfulness of online product reviews: The interplay of review helpfulness vs. review content. *Electronic Commerce Research and Applications*, 11(3), 205–217. <https://doi.org/10.1016/j.elerap.2011.10.003>
- Kotler, P., & Armstrong, G. (2018). Principles of marketing (17th ed.). Pearson Education Limited.
- KPMG. (2017). The truth about online consumers. In KPMG. <https://assets.kpmg/content/dam/kpmg/tr/pdf/2017/01/the-truth-about-online-consumers.pdf>
- Kumar, N., & Benbasat, I. (2006). Research note: The influence of recommendations and consumer reviews on evaluations of websites. *Information Systems Research*, 17(4), 425–439. <https://doi.org/10.1287/isre.1060.0107>
- Kumar, S. (2005). Exploratory analysis of global cosmetic industry: Major players, technology and market trends. *Technovation*, 25(11), 1263–1272. <https://doi.org/10.1016/j.technovation.2004.07.003>

**L**

- Lackermair, G., Kailer, D., & Kanmaz, K. (2013). Importance of Online Product Reviews from a Consumer's Perspective. *Advances in Economics and Business*, 1(1), 1–5. <https://doi.org/10.13189/aeb.2013.010101>
- Le Tan, T. (2017). Successful factors of implementation electronic customer relationship management (e-CRM) on e-commerce company. *American Journal of Software Engineering and Applications*, 6(5), 121-127. <https://doi.org/10.11648/j.ajsea.20170605.12>
- Lim, Y. J., Osman, A., Salahuddin, S. N., Romle, A. R., & Abdullah, S. (2016). Factors influencing online shopping behavior: The mediating role of purchase intention. *Procedia Economics and Finance*, 35(35), 401–410. [https://doi.org/10.1016/s2212-5671\(16\)00050-2](https://doi.org/10.1016/s2212-5671(16)00050-2)
- Lu, L.-C., Chang, W.-P., & Chang, H.-H. (2014). Consumer attitudes toward blogger's sponsored recommendations and purchase intention: The effect of sponsorship type, product type, and brand awareness. *Computers in Human Behavior*, 34(34), 258–266. <https://doi.org/10.1016/j.chb.2014.02.007>
- Lukman, S., Jummai, M. J., Asma'u, M. S., & Mu'awiyya, I. B. (2023). Electronic commerce and customer satisfaction among micro businesses in Kano metropolis, Nigeria. *Himalayan Journal Economics and Business Management*, 4(1), 1–10. <https://himjournals.com/article/964>

**M**

- Mackiewicz, J. (2015). Quality in product reviews: What technical communicators should know. *Technical Communication*, 62(1), 1-18. <https://core.ac.uk/download/pdf/141670224.pdf>
- Marczyk, G., DeMatteo, D., & Festinger, D. (2005). *Essentials of Research Design and Methodology*. Hoboken, New Jersey: John Wiley & Sons, Inc
- Marczyk, G., DeMatteo, D., & Festinger, D. (2005). *Essentials of Research Design and Methodology*. Hoboken, New Jersey: John Wiley & Sons, Inc.
- Matthews, B., & Ross, L. (2010). *Research methods: A practical guide for the social sciences*. Harlow: Pearson Longman.
- Maxham, J. G., & Netemeyer, R. G. (2002). A longitudinal study of complaining customers' evaluations of multiple service failures and recovery efforts. *Journal of Marketing*, 66(4), 57–71. <https://doi.org/10.1509/jmkg.66.4.57.18512>
- Mittal, A. (2013). E-commerce: It's impact on consumer behavior. *Global Journal of Management and Business Studies*, 3(2), 131–138. <https://doi.org/ISSN%202248-9878>

Mudambi, S., & Schuff, D. (2010). Research note: What makes a helpful online review? A study of customer reviews on Amazon.com. *MIS Quarterly*, 34(1), 185–200. <https://doi.org/10.2307/20721420>

Muntinga, D. G., Moorman, M., & Smit, E. G. (2011). Introducing COBRAs: Exploring motivations for brand-related social media use. *International Journal of Advertising*, 30(1), 13–46. <https://doi.org/10.2501/ija-30-1-013-046>

## N

Nisar, T. M., Prabhakar, G., Ilavarasan, P. V., & Baabdullah, A. M. (2020). Up the ante: Electronic word of mouth and its effects on firm reputation and performance. *Journal of Retailing and Consumer Services*, 53, 101726. <https://doi.org/10.1016/j.jretconser.2018.12.010>

## O

O'Reilly, K. A., MacMillan, A., Mumuni, A. G., & Lancendorfer, K. M. (2018). Factors affecting consumers' online product review use. *Qualitative Market Research: An International Journal*, 21(3), 375–400. <https://doi.org/10.1108/qmr-01-2016-0004>

Onwuegbuzie, A. J., Levin, J. R., & Ferron, J. M. (2011). A binomial test of group differences with correlated outcome measures. *The Journal of Experimental Education*, 79(2), 127–142. <https://doi.org/10.1080/00220970903352761>

## P

Pan, Y., & Zhang, J. Q. (2011). Born unequal: A study of the helpfulness of user-generated product reviews. *Journal of Retailing*, 87(4), 598–612. [https://econpapers.repec.org/article/eeejouret/v\\_3a87\\_3ay\\_3a2011\\_3ai\\_3a4\\_3ap\\_3a598-612.htm](https://econpapers.repec.org/article/eeejouret/v_3a87_3ay_3a2011_3ai_3a4_3ap_3a598-612.htm)

Perren, R., & Kozinets, R. V. (2018). Lateral exchange markets: How social platforms operate in a networked economy. *Journal of Marketing*, 82(1), 20–36. <https://doi.org/10.1509/jm.14.0250>

Petrosyan, A. (2019). *Most helpful information for product reviews according to internet users in the U.S. 2018 | Statista*. Statista. <https://www.statista.com/statistics/713308/leading-us-online-review-information/>

Petruzzi, D. (2022a). *Breakdown of the cosmetic market worldwide by product category, 2018 | Statista*. Statista; Statista. <https://www.statista.com/statistics/243967/breakdown-of-the-cosmetic-market-worldwide-by-product-category/>

Petruzzi, D. (2022b). *Global: cosmetics market revenue growth 2014-2026*. Statista. <https://www.statista.com/forecasts/1324713/worldwide-revenue-change-cosmetics-market>

Petruzzi, D. (2023). *Cosmetics industry*. Statista; Statista.  
<https://www.statista.com/topics/3137/cosmetics-industry/#topicOverview>

Purnawirawan, N., De Pelsmacker, P., & Dens, N. (2012). Balance and sequence in online reviews: How perceived usefulness affects attitudes and intentions. *Journal of Interactive Marketing*, 26(4), 244–255. <https://doi.org/10.1016/j.intmar.2012.04.002>

Pütter, M. (2017). The impact of social media on consumer buying intention. *Journal of International Business Research and Marketing*, 3(1), 7–13.  
<https://doi.org/10.18775/jibrm.1849-8558.2015.31.3001>

PWC. (2016). They say they want a revolution. In PWC. <https://www.pwc.com/gx/en/retail-consumer/publications/assets/total-retailglobal-report.pdf>

## R

Rai, N. (2013). Impact of advertising on consumer behaviour and attitude with reference to consumer durables. *International Journal of Management Research and Business Strategy*, 2(2). <https://www.studocu.com/ph/document/general-de-jesus-college/bs-accountancy/impact-of-advertising-on-consumer-behaviour-and-attitude-with-referenceto-consumer-durables-naveen-ral/17558521>

Rita, P., Oliveira, T., & Farisa, A. (2019). The impact of e-service quality and customer satisfaction on customer behavior in online shopping. *Heliyon*, 5(10), e02690.  
<https://doi.org/10.1016/j.heliyon.2019.e02690>

## S

Sajid, S., Rashid, R. M., & Haider, W. (2022). Changing trends of consumers' online buying behavior during COVID-19 pandemic with moderating role of payment mode and gender. *Frontiers in Psychology*, 13, 919334.  
<https://doi.org/10.3389/fpsyg.2022.919334>

Sarkar, R., & Das, S. (2017, January). Online shopping vs offline shopping: A comparative study. *Journal of Emerging Technologies and Innovative Research (JETIR)*, 8(4), 431-438.  
<https://www.jetir.org/papers/JETIRES06091>

Schwartz, B., Ward, A., Monterosso, J., Lyubomirsky, S., White, K., & Lehman, D. R. (2002). Maximizing versus satisficing: Happiness is a matter of choice. *Journal of Personality and Social Psychology*, 83(5), 1178–1197. <https://doi.org/10.1037/0022-3514.83.5.1178>

Shen, B., & Bissell, K. (2013). Social media, social me: A content analysis of beauty companies' use of facebook in marketing and branding. *Journal of Promotion Management*, 19(5), 629–651. <https://doi.org/10.1080/10496491.2013.829160>

Shi, M., Zhou, J., & Jiang, Z. (2019). Consumer heterogeneity and online vs. offline retail spatial competition. *Frontiers of Business Research in China*, 13(1), 1-19. <https://doi.org/10.1186/s11782-019-0059-9>

Singh, A. K., & Sailo, M. (2013). Consumer behavior in online shopping: A study of Aizawl. *International Journal of Business & Management Research (IJBM)*, 1(3), 45-49. [https://www.researchgate.net/publication/293517608\\_Consumer\\_Behavior\\_in\\_Online\\_Shopping\\_A\\_Study\\_of\\_Aizawl](https://www.researchgate.net/publication/293517608_Consumer_Behavior_in_Online_Shopping_A_Study_of_Aizawl)

Statista. (2022). *Global: cosmetics market revenue 2012-2025*. Statista; Statista Research Department. <https://www.statista.com/forecasts/1272313/worldwide-revenue-cosmetics-market-by-segment>

Statista Research Development. (2022). *Benefits of social media marketing worldwide 2019 | Statista*. Statista; [www.statista.com](https://www.statista.com). <https://www.statista.com/statistics/188447/influence-of-global-social-media-marketing-usage-on-businesses/>

Sun, X., Han, M., & Feng, J. (2019). Helpfulness of online reviews: Examining review informativeness and classification thresholds by search products and experience products. *Decision Support Systems*, 124, 113099. <https://doi.org/10.1016/j.dss.2019.113099>

## T

Taher, G. (2021). E-commerce: Advantages and limitations. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 11(1), 153-165. <https://doi.org/10.6007/ijarafms/v11-i1/8987>

Tang, H., Rasool, Z., Khan, M. A., Khan, A. I., Khan, F., Ali, H., Khan, A. A., & Abbas, S. A. (2021). Factors affecting e-shopping behaviour: Application of theory of planned behaviour. *Behavioural Neurology*, 1–15, 1664377. <https://doi.org/10.1155/2021/1664377>

## V

Verma, S., & Yadav, N. (2021). Past, present, and future of electronic word of mouth (EWOM). *Journal of Interactive Marketing*, 53(1), 111–128. <https://doi.org/10.1016/j.intmar.2020.07.001>

## W

Wang, S., Cunningham, N. R., & Eastin, M. S. (2015). The impact of eWOM message characteristics on the perceived effectiveness of online consumer reviews. *Journal of Interactive Advertising*, 15(2), 151–159. <https://doi.org/10.1080/15252019.2015.1091755>

Wang, W., Liang, Q., Mahto, R. V., Deng, W., & Zhang, S. X. (2020). Entrepreneurial entry: The role of social media. *Technological Forecasting and Social Change*, *161*, 120337. <https://doi.org/10.1016/j.techfore.2020.120337>

Wu, W.-Y., Lee, C.-L., Fu, C.-S., & Wang, H.-C. (2014). How can online store layout design and atmosphere influence consumer shopping intention on a website? *International Journal of Retail & Distribution Management*, *42*(1), 4–24. <https://doi.org/10.1108/IJRDM-01-2013-0035>

## Y

Yinglin, X. (2020). Correlation and association analyses in microbiome study integrating multiomics in health and disease. In D. B. Teplow (Ed.), *Progress in Molecular Biology and Translational Science*. PMBTS.

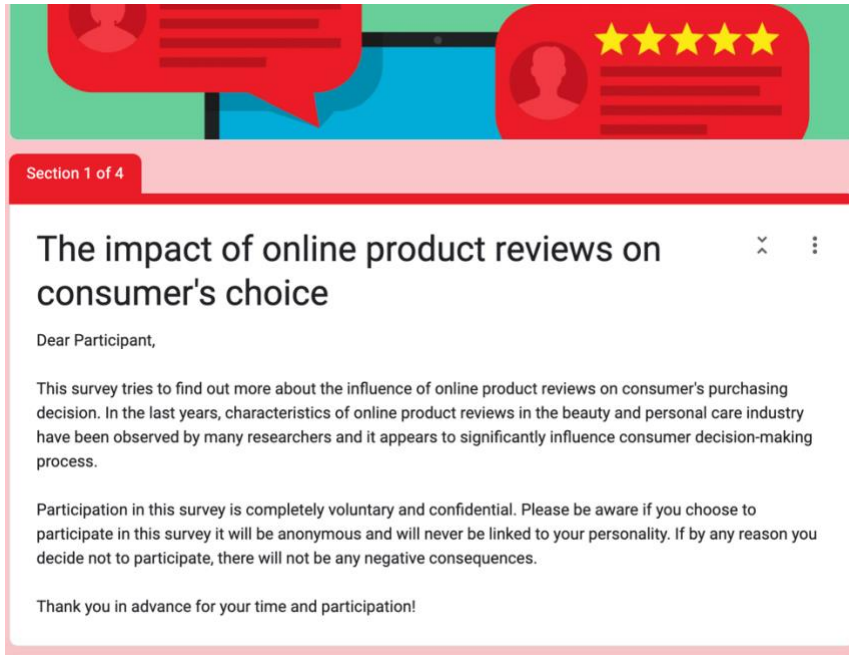
## Z

Zhu, F., & Zhang, X. (Michael). (2010). Impact of online consumer reviews on sales: The moderating role of product and consumer characteristics. *Journal of Marketing*, *74*(2), 133–148. <https://doi.org/10.1509/jm.74.2.133>

## APPENDICES

### 7.1 Appendix 1

Online questionnaire



The screenshot shows a web-based survey interface. At the top, there is a decorative banner with icons of a person, a speech bubble, and a five-star rating. Below the banner, a red bar indicates 'Section 1 of 4'. The main content area has a white background with a red border. The title 'The impact of online product reviews on consumer's choice' is displayed in a large, bold font. Below the title, the text reads: 'Dear Participant, This survey tries to find out more about the influence of online product reviews on consumer's purchasing decision. In the last years, characteristics of online product reviews in the beauty and personal care industry have been observed by many researchers and it appears to significantly influence consumer decision-making process. Participation in this survey is completely voluntary and confidential. Please be aware if you choose to participate in this survey it will be anonymous and will never be linked to your personality. If by any reason you decide not to participate, there will not be any negative consequences. Thank you in advance for your time and participation!'.

1. Gender (please mark only one) \*

- Male
- Female
- Divers
- Prefer not to say

2. How old are you? (in years) \*

Your answer

3. What is your highest completed level of education? (please mark only one) \*

- No formal education
- Primary school
- Lower secondary (high school, short programs (less than 2 years))
- Upper secondary (university entrance qualification)
- University (BSc, BBA)
- Master, MBA, PhD, Dr.
- Other



4. Do you generally shop online or in-store if it is not everyday products like food etc.? (please mark only one) \*

- Online
  - In-store
  - Online and in-store
- 

5. Do you generally read product reviews before purchasing new products that are not everyday products like food etc.?

- Yes
  - No
- 

6. How many reviews did you approximately post on e-commerce websites? \*

- More than 10
- 4 to 10 reviews
- 1 to 3 reviews
- None

7. Did you ever post a product review on your Instagram page? \*

- Yes
  - No
  - I don't have an Instagram page
- 

8. Do you see yourself as well introduced in beauty and personal care products? \*

- Yes
- No

Online review characteristics

Please select one scenery:

9. Please select what option is more relevant for you: \*



Option 1

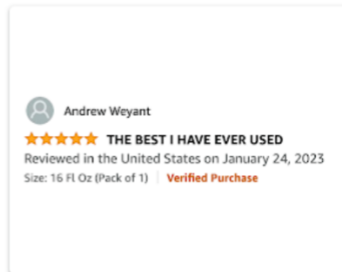


Option 2

10. Please select what option is more relevant for you: \*



Option 1

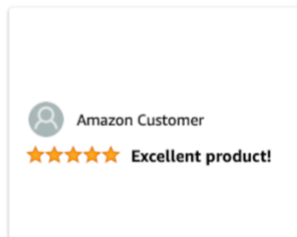


Option 2

11. Please select what option is more relevant for you: \*



Option 1

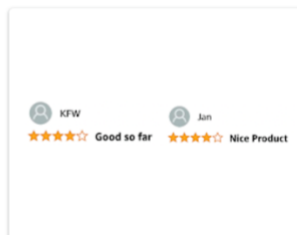


Option 2

12. Please select what option is more relevant for you: \*

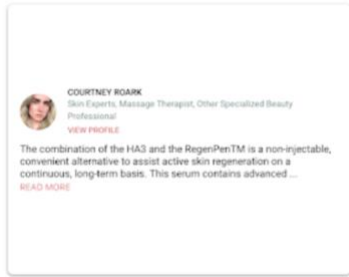


Option 1

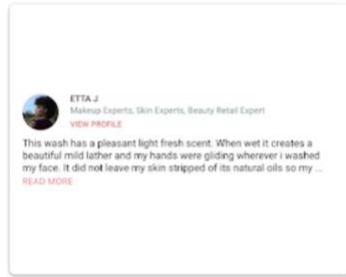


Option 2

13. Please select what option is more relevant for you: \*



Option 1

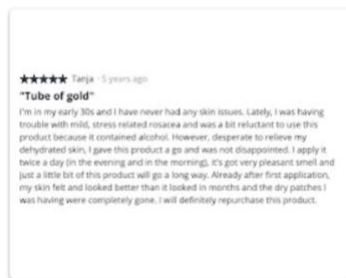


Option 2

14. Please select what option is more relevant for you: \*



Option 1



Option 2

15. Please select what option is more relevant for you:

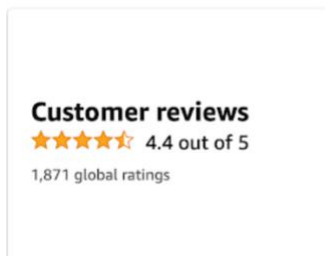


Option 1: Description without rating



Option 2: Review with rating

16. Please select what option is more relevant for you:



Option 1: Rating 4.4 from 1,871 responses



Option 2: Rating 4.4 with 65,141 responses

Choose on a scale from 1 to 5 (extremely meaningful, very meaningful, neutral, less meaningful, not at all meaningful)

17. How meaningful is online review **informativeness** for your purchasing choice? \*

1      2      3      4      5

Extremely meaningful                  Not at all meaningful

---

18. How meaningful is review **valence** for your purchasing choice? \*

*Valence- the extent of positive or negative thoughts*

1      2      3      4      5

Extremely meaningful                  Not at all meaningful

---

19. How meaningful is **credibility** of review for your purchasing choice? \*

*Credibility- the person who wrote review is known or anonymous*

1      2      3      4      5

Extremely meaningful                  Not at all meaningful

---

20. How meaningful is **conformity** of review for your purchasing choice? \*

*Conformity- behaviour in accordance with socially accepted conventions*

1      2      3      4      5

Extremely meaningful                  Not at all meaningful

---

21. How meaningful is online review **readability** for your purchasing choice? \*

*Readability- how easy is for reader to read and understand text*

1      2      3      4      5

Extremely meaningful                  Not at all meaningful

---

22. How meaningful is online **review length** for your purchasing choice? \*

1      2      3      4      5

Extremely meaningful                  Not at all meaningful

23. How meaningful is online **rating** for your purchasing choice? \*

*Online rating- Product evaluation in form of scale rating (from very satisfied to extremely unsatisfied)*

	1	2	3	4	5	
Extremely meaningful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not at all meaningful

24. How meaningful is online **response** for your purchasing choice? \*

*Online response- The extent how many people responded online on product or service*

	1	2	3	4	5	
Extremely meaningful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not at all meaningful

How meaningful are the following beauty and personal care product performance characteristics for you?

25. Product ingredients \*

	1	2	3	4	5	
Extremely meaningful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not at all meaningful

26. Product application \*

	1	2	3	4	5	
Extremely meaningful	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not at all meaningful

27. Product effectiveness \*

	1	2	3	4	5	
Extremely meaningful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not at all meaningful