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The impact of demographic and personal features on attitude towards online advertising in e-commerce industries

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Table of Contents

ACKNOWLEDGEMENTS	1
ABSTRACT	2
1. INTRODUCTION	3
1.1. OVERALL PROBLEM STATEMENT AND RESEARCH QUESTIONS.....	4
2. LITERATURE REVIEW	6
2.1. ONLINE ADVERTISING AND E-COMMERCE INDUSTRIES	6
2.2. SOCIAL MEDIA BACKGROUND.....	7
2.3. TYPES OF ONLINE ADVERTISING	8
2.4. MILLENNIALS AND SOCIAL MEDIA	10
2.5. GENERATION X AND SOCIAL MEDIA	11
3. RESEARCH DESIGN AND PREDICTIONS	13
3.1. CONCEPTUAL FRAMEWORK	13
4. METHODOLOGY	20
5. DATA	23
5.1. DESCRIPTIVE STATISTICS.....	24
5.2. SAMPLE	25
6. ANALYSIS AND RESULTS	27
6.1. MULTICOLLINEARITY	27
6.2. CORRELATION MATRIX	28
6.3. REGRESSION ANALYSIS	28
7. DISCUSSION	37
REFERENCES	42
APPENDIX 1	49
APPENDIX 2	49

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Abstract

The aim of the study is to investigate the influence of demographic factors and customers' personal characteristics on their attitude toward online advertising in e-commerce industries. In the study, we significantly focused on two generational cohorts such as Millennials and Generation X. For this purpose, we did a literature review for online advertising in social media and factors which influence the perception of online advertising. In order to investigate our problem, we used multiple linear regression with dummy variables. Findings showed that such demographic factors as age, gender, income and such personal characteristics as reserved, lazy, sociable, attractive, and attentive person are significant and affect customer's attitude toward online advertising. However, factors showed different effects in such e-commerce industries as Health & Beauty and Console & Video Games. Thus, the results proved that the company can get the benefit from making more online ads if the company adjust its marketing and targeting strategy to the specificity of industry and consider these factors.

1. Introduction

Online advertising is becoming more and more popular for both companies and customers. First of all, the segment of online advertising has already shown strong growth and this trend is going to continue in the future as more and more people tend to shop online nowadays (Forrester, 2011). In 2018 the e-commerce industry was worth USD 2.8 trillion and tends to reach the level of USD 4.8 by the year 2021 (Statista, 2019). In this section, we would like to introduce the problem which is the subject of our research and state why is research about customers' attitude towards online advertising is up to date and important.

Our research is devoted to helping companies better understand their target audience and increase the effectiveness of companies' online advertising campaigns. The research of how demographic and psychological features of people affect their attitude towards online advertising and how much of the attitude can be explained by these factors in different industries should provide a new point of view on online advertising targeting and assessing of the effectiveness of the campaigns.

Today there are several techniques used for predicting the attitude of the target audience and targeting the advertising, which usually uses past behaviour, demographic features and preferences. Our research is intended to increase the effectiveness of such techniques by incorporating the assessment of the psychological features of people. These features for our research are standardized by using results from the psychological questionnaire (Rammsted et al, 2007).

To conduct our research, we used the ADS dataset (EMPIRE, 2016), which consists of studies of personalities, demographic factors and attitude towards online advertising of different formats and industries of 120 participants from various countries. This study may be used together with other studies concerning brand factors to get a clear picture of factors to build an effective online advertising campaign.

Using this study, advertising specialist may incorporate personal features filters onto their online advertising systems to increase the effectiveness or to lower costs by using the correct type of advertising for a certain user.

In the first part of our research, we will discuss the overall problem statement and research questions. The second part shows an academic literature review dedicated to our topic. In the third part, we will present our hypotheses and predictions. Part four will describe the method we are going to apply for our analysis. Also, in this part, we will provide a description of the data. In part five we present the main results and findings. In part six we discuss the main conclusion of our research. And in the last part, we will summarize managerial implication, limitations and suggestions for future research.

1.1. Overall problem statement and research questions

Nowadays, online shopping simplifies people lives as it gives them the advantage to save time, money and choose between two similar products. Morris (2013) analysed customers of USA and found that almost seventy percent of the sample prefer online shopping in their favourite online retail shop. Hence, companies started to expand their distribution channels in order to grow the business globally. More and more competitors go online and in order to acquire new customers it is crucial to understand the main drivers which lead to a better perception of online advertising. Marketers are using online advertising to create brand awareness, brand recognition and induce customers to buy the product.

To succeed in online advertising companies are increasing their marketing budget for social media as worldwide digital ad spending will rise by 17.6% to \$333.25 billion in 2019. In 2019, Google will remain the largest digital ad seller in the world accounting for 31.1% (\$103.73 billion) of worldwide ad spending. Following by Facebook with \$67.37 billion in net ad revenues, on the third place is Alibaba (\$29.20 billion) and the fourth place has Amazon (\$14.03 billion) (eMarketer, 2019). Therefore, all these four sellers of digital ads are covering together every part of the world. Facebook is the largest social media in the world with 2.38 billion monthly active users (Statista, 2019). Thus, refer to everything mentioned above, it

is important to know the ways how to analyse advertising data and research behavioural attitudes of customers towards online advertising in order to marketing correctly and make sure that company's campaigns stand out from the crowd.

With the extended usage of social media advertising for e-commerce industries, it is necessary to investigate the influence of demographic factors and customers' personal characteristics on their attitude toward online advertising. Online advertising becoming more and more popular among companies in different industries. Moreover, online ads have gained increased popularity with more people spending time online (Li Ming et al., 2013). That is why it is important to understand consumers' attitudes toward online advertising.

Going through the literature about the attitude toward online advertising we found a lack of studies about demographic factors and personal characteristics in the e-commerce industries. What is more, there are no researches concerning the differences in online advertising strategies among Millennials and Generation X, that is why we will focus our study on these cohorts. It is crucial for effective targeting to understand customer cohorts as priorities of Millennials and Generation X are changing often and marketers should adjust marketing strategies to these changes. Moreover, gender and income have to be considered also in targeting strategy as an effective targeting influences the company's performance and almost every company use online advertising to promote their product, we want to answer the following research questions:

- *RQ1: How is customers attitude toward online advertising impacted by demographic factors in the e-commerce industries?*
- *RQ2: How is customers attitude toward online advertising impacted by personal characteristics in the e-commerce industries?*

These research questions are the possibility to further extend the current literature on attitude toward online advertising and set the guidelines for companies on how to target effectively their potential customers using online advertising. Understanding the impact of demographic and personal characteristics of customers is required for companies to set successful online ads.

2. Literature review

In this part of our research, we will make a literature review to explain the background of our study and spell out the literature gap.

2.1. Online advertising and e-commerce industries

Today, research on consumers' attitudes and behaviour towards online shopping has been the main focus in e-commerce (Chen, 2009). It is important for companies as understanding attitudes will help to improve targeting strategy. Pickens (2005) defines attitude as a mindset or a tendency to act in a particular way due to both an individual's experience and temperament and the reactions/responds include the tricomponent of feelings (emotions), thoughts (beliefs) and actions (behaviours).

Many studies have been done to investigate attitude as an important driver of online shopping intentions. Delafrooz (2009) found that the level of online shopping intention was relatively high and the effect of attitude towards online advertising was positive among the postgraduates' students in Malaysia. Earlier research by Wu (2003) stated that a group with a more positive attitude towards online shopping should be the target market as attitude is believed to influence online purchase decisions directly. Basically, attitude is a connection between customers' personal characteristics and demographical factors and purchase intention. However, due to the increasing volume of online advertising, the attitude towards it can deteriorate. Also, there is a probability of not seeing any ads if the customers are used to the Internet.

As an example, online advertising within video games is fast growing as a prospective marketing communication tool for businesses. Video games have long been advertised in magazines, television, and online. Moreover, the earliest video game advertising rarely featured women or non-white players (Chess, Evans and Baines, 2017). When newer Nintendo systems of the mid-2000s were launched, targeting approach was changed, with this console mainly women were marketed (Fron et al., 2007).

Another example of an industry which started to use online advertising to reach the customers is the Health & Beauty industry. Millions of people use cosmetics on a daily basis. Cosmetics may be used to compliment or enhance positive facial features and can offer positive benefits to the consumer by improving their self-image, self-esteem, and confidence, thus improving the quality of life (Robertson et al., 2008). Past decade many advertisements were in women's magazines that advertise cosmetics influencing women and beauty has become an absolute religious imperative for women, thus pressuring them to do their best to hold their beauty (Baudrillard, 2005). The “ideal” women are stereotyped through visual and textual aspects of the advertisement (Kaur et. al., 2013). In general, women consider cosmetic to enhance their appearance. Foster (2004) suggested that over 45-year-old female consumers have a tendency to be more open towards green cosmetic information. In addition, men have become to consume cosmetics more often and Ersoy et. al. (2015) found that self-esteem, lifestyle, societal beliefs, shopping and self-image are critical determinants of men’s cosmetic consumption.

Based on this literature review, we can conclude that in order to achieve success and make more effective online advertising, marketers should understand customers' personal characteristics and demographical factors which can influence the positive attitudes towards online advertising. Considering these factors, the marketer can target proper customer who really wants to view particular advertising which helps him to make an easier purchase decision. Based on discussed above, online advertising is an important driver of the company's performance in e-commerce industries. Moreover, it is crucial to create customers' positive attitude in order to benefit in online advertising.

2.2. Social media background

The Internet has become the fastest growing advertising medium of this decade (Ha, 2008). Social media usage has increased considerably in the few past decades and, nowadays, consumers are using online sources to communicate and interact with the company or each other. This approach completely changed the way organizations attract and retain prospective consumers (Leung et al., 2015). Companies and marketers bought space in the mass media for their campaigns in order to create brand awareness in consumer’s minds which later can lead to

purchasing. Social media advertising overlapped traditional media advertising. Duffet (2014) in his research stated that due to social media, traditional media such as television and newspapers have lost uninterrupted viewership and readership, and their influence as advertising channels may have been weakened. Additionally, marketers noticed the influence of the social community in terms of interactivity that composes of personalised sections, shopping experiences and better convenience of information search (Chandra et al., 2012).

One of the great challenges in generational research is that many studies investigate the effect of age but not generational (birth) cohort (Roberts and Mroczek, 2008). Schewe et al. (2000) found that generational cohorts are a more efficient way to segment markets than just by age because cohort segmentation provides both the stability that age segmentation offer and the insights into consumer motivations which derive from common values and beliefs. Moreover, understanding the values and motivations of a generation has become essential to targeting particular consumers, as each generation is driven by unique ideas about the type of lifestyle they aspire to reach (Smith and Clurman, 1997). However, it is necessary to expand researches which define the differences between generational cohorts in online shopping. This study helps to fill the need for further research into identifying demographic factors and personal characteristics that are important to know when targeting Millennials or Generation X in e-commerce industries.

To sum up, nowadays social media has become one of the most important ways for online advertisements. Nevertheless, it is important for companies to perform appropriate targeting of consumers in order to achieve their positive attitudes to these online ads in social media.

2.3. Types of online advertising

There are three types of graphic formats for online advertising: text, display, and rich media. A text ad is the simplest one, which is described by a string of words, colour, shape and size of the characters (Ratliff and Rubinfeld, 2011). Text ads give companies an opportunity for basic interactivity; potential customers will interact with the ad only by clicking on it and after they will be carried over to the advertiser's landing page.

If the company wants to engage the customer with more graphics and include their logo to the ads in order to increase brand awareness, they can use display ads. This type of ad is the most used and consists of photographs or other graphics, logo and a text message. Display ads also typically allow interactivity through clicking (Ratliff and Rubinfeld, 2011). Briggs and Hollis (1997) in their study conducted analysis to measure the impact of banner ads and found that even without click-through, banner ads can positively influence ad awareness and brand perceptions.

There are many studies that examined display ad characteristics. Li and Bukovac (1999) investigated the recall, click-throughs and response time as functions of display ad type (static or animated), banner ad size (small and large) in a lab experiment. They found that animated banner ads cause better recall and faster click-throughs than static banner ads and large banner ads enhance higher and faster click-throughs than small ones. What is more, the speed of animation influence display ad perception, fast-animation speeds attract more customers and able to evoke greater physiological arousal, in comparison with slow-animation speeds (Sundar and Kalyanaraman, 2004). Edwards et al. (2002) found that display ads displayed on the periphery of the website interrupted only a few website visitor activities. People perceive ads outside the website's main content area least annoying and click-throughs are higher (Burns and Lutz, 2006).

Rich media ads are more-complex advertisements than two mentioned above. With rich media ads, companies get more interactivity inside the ad than simply a click which leads the customer to the landing page. Interactivity, a major advantage of the Internet as an advertising medium (Cho et al., 2001). The following ads can respond to "mouseovers", keyboard inputs, or other clicks that do not result in a click-through to another site. Rich media ads can expand, roll down or roll from the side, peel back, or float. Moreover, it can also contain video (Ratliff and Rubinfeld, 2011).

Reeves and Nass (1998) stated that the background of rich media ads lies in the assumptions that messages appealing to multiple perceptual systems are better perceived than those that call on single or fewer perceptual systems, and that high-quality messages (e.g., vividness or distinctiveness) is more effective than low-

quality messages. Rich media ads worldwide saw far higher click-through rates and engagement rates compared with standard display ads because rich media ads have a high-impact format, premium spots on publisher sites, and bigger sizes, which means that users pretty much cannot avoid looking at them (eMarketer, 2014). Interactivity in rich media ads give website users control and helps users reduce search costs in selectively focusing on important information (Liu and Shrum, 2009). Use of interactivity in ads is still an issue as Ramsey (2011) in the study found users favoured interactive ad element, but Lothia et al. (2003) examined that interactive elements lowered click-through rates. Thus, no studies define the effect of type ads on customer's perception of online advertising in the e-commerce industry among Millennials and Generation X.

2.4. Millennials and social media

In 1977, Inglehart first proposed Generational Cohort Theory as a way to divide the population into segments - generational cohorts. These cohorts can be defined by the years of birth, extending 20-25 years in duration, or as long as it generally takes one birth group to be born, age and have children of their own (Meredith and Schewe, 1994).

There are a lot of categorization schemes have been proposed because researches have not found the agreement on precisely what life events distinguish one generational group from another (Zemke et al., 2000). We will follow Bolton et al. (2013) categorization of generation as the basis for our study, adhere to the following birth years: Silent Generation (1925-1945), Baby Boomers (1946-1964), Generation X (1965-1980), Generation Y is also known as Millennials (1981-1997), and Generation Z (1998-present). The main characteristic that distinguishes Millennials from other previous generations by Immordino-Yang et al. (2012) is early and frequent exposure to technology, which has advantages and disadvantages in terms of cognitive, emotional, and social outcomes. This cohort experienced a rapid advance in instant communication technologies, social networking, and globalization (Park and Gursoy, 2012). Millennials are a crucial component in the development of e-commerce.

Premsky (2001) in his article describes members of Generation Y (Millennials) as Digital Natives, rather than Digital Immigrants. They are the first generation who spent their entire lives in the digital environment (Bennet et al., 2008). Wesner and Miller (2008) found that information technology profoundly affects how they live and work. Service organizations, managers, researchers and public policymakers are interested in Generation Y's use of social media because it affects people's behaviour in many domains – with positive and negative outcomes for customers, firms and their employees, and society. Generation Y's social media use affects consumers' identity formation, their expectations regarding service, the formation of habits, engagement with brands and firms, participation in value co-creation, brand loyalty, purchase behaviour and lifetime value, and (ultimately) the value of the firm (Bolton et al., 2013). Moreover, social media used by Millennials also deeply influences the design and implementation of interactive services - including location-based, retail and self-service technology (Berry et al., 2010). Reaching consumers through digital media is considered to be the most promising field of development for marketing in the upcoming decade (Okazaki, Katsukura and Nishiyama, 2007). Caplan (2005) mentioned that Millennials want products that match their personality and lifestyle.

There are two broad classifications of consumer activities on social media: contribution (posting content) or consumption (observing) (Schlosser, 2005). A good opportunity for companies is to use online advertising as due to Jones et al., (2004) most users consume rather than contribute to social media. However, Bolton et al. (2013) think that previous researches on social media among Millennial users generate more questions than answers as researches were focused on US social media users, ignoring the fact that other emerging regions with rapidly growing Millennial populations, where social media usage and its determinants might differ significantly. So, due to the literature review, we can state that Millennials are an important cohort to consider for online advertising and purchase behaviour, and no studies were done to investigate these cohorts in e-commerce industries.

2.5. Generation X and social media

Nielsen Social Media report (2016) stated that Generation X (1965-1980) spends the most time on social media: almost 7 hours per week to compare with Millennials

who are spending just over 6 hours per week. Comparing Generation X with Millennials, they tend to be more responsible in their use of social media communication, mostly because they became acquainted with mobile devices, modern communication technology and social media during adulthood (Dabija and Grant, 2016). According to Acar (2014), Gen Xers can be easily influenced by the opinions of others, what is give marketers an opportunity to targeting them easily.

Members of this cohort have a high level of education and they are more pragmatic and sceptical (Jackson et. al., 2011). Eastman and Liu (2012) said in their research that Generation X has a small fondness for shopping explaining this as the effects of the recent global economic recession. Despite the fact that they are not as familiar with technologies as Millennials, Generation X do more online shopping, mainly as a way of relaxation. Nevertheless, online advertising does not strive them to purchase decisions, because they are not interested in such type of advertising and ignore it most of the time (Dabija et al., 2018). Dunne and Lusch (2008) stated that Generation X sophisticated in its buying behaviour and is turned off by slick and generalized promotions. This cohort wants to hear the features of the product as well as the advantages of the product and why these features are important (Himmel, 2008). Generation X care about the opinions of others, and they read more reviews and visit opinion sites than any other generations (Peralta, 2015).

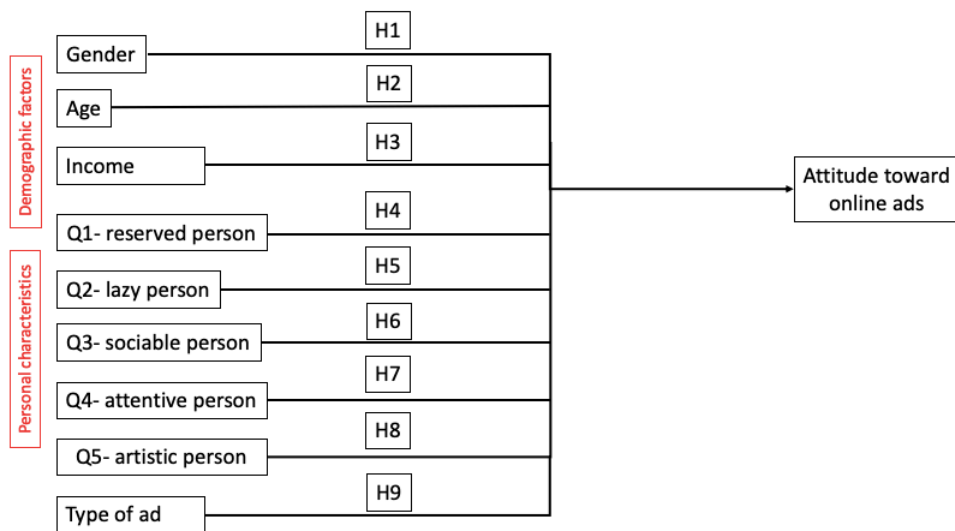
As we can see from the literature review, we can conclude that Millennials and Generation X have a different attitude towards the online advertisement. Thus, it is important to consider both in targeting strategy as they probably perceive the same online ads in different ways. Moreover, no studies were done to compare attitude toward online advertising of these cohorts in e-commerce industries.

3. Research design and predictions

In this section, we will present the box-and-arrows of our research in order to provide a picture of all factors that influence the customer’s attitude toward online ads and purchase decisions. In addition, we will explain the main hypothesis of our research and show the prediction of the model.

3.1. Conceptual framework

Figure 3.1 Research model



Our first aim is to define whether demographic factors such as age, gender and income influence perception of online advertising which leads to purchase decision. In addition, we would like to investigate if the personal characteristics of the customer have an effect on attitude toward online advertising in the e-commerce industries.

Both male and female users may perform differently in their online activities such as communicating with others, viewing photos and videos, tracking people, events, posting or forwarding information, playing online games, reading and sharing promotional information with others (Luna-Nevarez and Torres, 2015). Women more tend to go in stores as they want to feel, touch and try the product and show the bought item immediately to friends. They are more price sensitive and more

bargain hunters, which means that women will go to the store to check the quality, to see different options and try to get a discount. In addition, females are likely to go to the shop to spend time with friends, communicate and wrap up. For most of the females live shopping is a very exciting activity. In return, men would like to save their time due to online shopping, not to wait long in the queue and spend time more effectively than only shopping. That's why, we can assume that men are more likely to have a positive attitude towards online ads, as they prefer online shopping. In addition to our logic, Wolin and Korgaonkar (2003) found that men are more likely to make online purchases than women. Lissitsa and Kol (2016) investigated that men purchase electric appliances more than women, but researches claiming that the product category chosen for the research may have created a bias in the results, as female may be more likely to purchase other product categories online. Moreover, men have the tendency to buy more electronics and entertainment products, whereas women tend to purchase more clothing. Further, women have the tendency to spend more of their disposable income on consumer products in comparison to men (Hayhoe et al, 2000).

Paek et al. (2011) investigated content analysis to compare how gender functions cross-culturally among seven countries. Moreover, men are more than three times as likely to make gaming purchases than women (Earnest, 2018). Also, some researchers have used content analysis methods to better understand how gender and ethnicity influence games commercials. Chess, Evans and Baines (2017) found that a larger issue occurring in the world of gaming, despite the fact that the markets and players are becoming more diverse, there is still a perception of a white, male gamer who is central to the industry. Based on the mentioned above and the fact that the e-commerce industry is fast growing, there is still a blurry customer identification picture which needs to be explored for better targeting procedures. Due to the literature review, we found out that men are more likely to buy online than women, but there is no information about their attitudes towards online ads. Nevertheless, due to our logic, we can suppose that males tend to have a better attitude towards online advertising and make more online purchasing than women. Thus, we assume the first hypothesis:

H1: Gender will affect customers' attitude toward online advertising in e-commerce industries: males have a better perception of online ads than females in e-commerce industries

There are many factors which are affecting attitude towards online advertising, even different range of age influence attitude on advertising differently. Due to previous research, younger individuals considered to learn computer skills more easily than the elder population (Hubona and Kennick, 1996). The reason is that the younger population has been living the entire life in the Internet era and with easy access to computers. Thus, age is a relevant variable to include in the investigation of customers' attitude towards online advertising. Wesner and Miller (2008) found that information technology profoundly affects the younger generation on how they live and work. In addition, this generation learns information technologies deeply in schools and universities. Every day they work with computer in the office, search the information, send the e-mails, have skype meeting, online conferences. Moreover, the younger people always communicate with friends in social networks such as Facebook, Instagram, LinkedIn and others. They spend a lot of time online and prefer reading news online rather than in newspapers. That's why we can conclude that it is the generation of the digital era. As a result, it is likely that such people have better attitudes to the online advertisement and make online purchases. In return, older people have other perception of the digital world. They prefer reading newspapers, going to the stores, not following social networks and life in the real world. Thus, this generation spends less time online and is not a very good user of computers, which signalizes about worse attitudes to online ads and online shopping. However, Lewis and Reiley (2014) found that online advertising especially influenced older users because they are more willing to spend time paying attention to online advertising. Also, according to Earnest (2018), younger people, especially those aged 18-24, are more likely to make gaming purchases than older individuals. The average age of console game consumers in the United States is 37 years, and 42% of players are women (The Economist, 2011). In addition, we would like to focus not only on number of age but also on the cohorts of Millennials and Generations X that are defined by age. So, based on our logic we can assume the following hypothesis:

H2: Age will negatively affect customers' attitude toward online advertising in e-commerce industries

It is obvious that income is the main driver of customers' purchase decisions. Usually, income is reflected in the professional status or social class of the individual – different professional categories are accompanied by different incomes and by different levels of IT knowledge and experience. So, such categories may produce different user attitudes and behaviour regarding information systems (Chau and Hu, 2002). Due to low prices for internet connection, it became more affordable for a larger part of the population and online shopping became more popular. Moreover, customers use the Internet for their purchases due to cheaper prices for the same product that they can buy offline. In other words, people with lower income are more likely to buy online as they are price-sensitive and would like to save money. Also, people with higher income are consumers of more expensive segments, so they would like to experience a high-quality service during purchase, to have attention and advice from sales advisors. As a result, we can assume that income is an important factor that influences the attitude towards online advertising and the ability to make the purchase on the Internet. Shavitt et al. (1998) investigated that males, younger consumers, and persons with less income have more favourable advertising attitudes than others in general industries. So, in recent years the Internet became more attractive because of cheaper prices for the same products people can buy offline, online purchases have demand among price-conscious consumers. Based on this, we have developed the following hypothesis:

H3: Income will negatively affect customers' attitude toward online advertising in e-commerce industries

The previous researches on investigating the perception of online shopping by isolated persons showed that they have a negative relationship between their reserved personality and usage of computers (Saleem et al., 2011). It can be explained by the fact that reserved people mostly exist in their own world and do not want to follow new technologies, Internet and social networks, as there is a lot of different information which can destroy their own world. Moreover, isolated people perceive new changes and trends more difficult and negative than open persons, as it can disturb their usual lifestyle and daily habits. However, Tsao and

Chang (2010) found contrary outcomes, they investigated that reserved persons who experience negative emotions are actively engaged in online shopping as they feel happier when they receive their parcel by post. Besides, self-conscious people found online purchases convenient as they can compare products from different brands, find the best price, purchase the product and they can also meet their expectations. On the one hand, reserved personality is more likely to do online shopping in order to avoid interaction with society. On the other hand, such people are afraid to do online shopping as they have to disclose personal information in order to receive a parcel. Thus, there are controversial thoughts, but we assume the following hypothesis:

H4: Reserved person will negatively affect customers' attitude toward online advertising in e-commerce industries

With the advent of the Internet, customers started to spend their time online and do online purchases instead of going to the nearest shop. Cagaoan et al. (2014), stated that the continuous growth of our society's technology has led to many ways of convenient shopping, but these ways led customers to become lazy. The majority of the population choose online shopping as it is convenient, quick and easy. Also, it is convenient for everyone who has access to online and it is convenient for customers who are too busy and lazy to go to a real store. As a result, as lazy people like online shopping, they are also likely to have more positive attitudes towards online ads. Based on this, we developed the following hypothesis:

H5: Lazy person will positively affect customers' attitude toward online advertising in e-commerce industries

Customers with a high level of openness to experience are more likely to become interested in new things, accordingly, they have positive attitudes toward new technologies. Saleem et al. (2011) in their research found that they use computer actively. Therefore, we can assume that sociable persons with open to new experience, are more likely to find new and best offers on online shopping. Previous research found that individuals with openness to experience can be caught by emotional stimuli during their online shopping (Matzler et al., 2006). Moreover, Chen and Lee (2008) found that sociable people more tend to make online

purchases if the website provides a good quality image of the product, a broad range of alternatives and price information. Therefore, we assume the next:

H6: Sociable person will positively affect customers' attitude toward online advertising in e-commerce industries

In advertising, attention is vitally important. Due to the oversaturation of online advertisement, marketers are struggling with getting customers' attention. Advertisers are using different tactics to make their advertisement to become attention-getting or attention-grabbing (Campbell, 1995). From the Big Five Inventory model, attentive persons are described as detail oriented, neat and self-controlled, they are responsible, hardworking and they always pursue their goals (McCrae and John, 1992). Karl et al. (2007) investigated that conscientious online customers recognize and accumulate information and choose the best product among alternatives, which fit their social status. Other research investigated that attentive people and their computer usage has a positive relationship (Saleem et al., 2011). As such people are good users of computers, we can assume that they are customers in online shopping, since these two points have a direct relationship. In addition, due to the highly organized and detail-oriented way of life of attentive persons, they will give more attention to online advertising than others. Thus, we developed the following hypothesis:

H7: Attentive person will positively affect customers' attitude toward online advertising in e-commerce industries

Digman and Inouye (1986) stated that artistic personalities are the most likely to build a friendly relationship with others. Previous research by Karl et al. (2007) indicated that customers with high artistic personalities are influenced by the visual effects of websites while making online purchase decisions. Moreover, such persons are happy to communicate with other customers on online shopping platform. It is common that artists have advanced imagination. Imagination is considered as "a power of the mind," a "process" of the mind used for thinking, planning, creating, imaging, and forming an opinion or a development of a concept of what already exists to the gain of new thinking (Bergstra and Van, 2010). Perdue (2003) in his research stated that imagination means the picture of imagining and

ability contributing the images and sensations which perceive without hearing, watching, touching or other senses based on various experiences they may have had already or something that is of some interest to them. We can assume that people's imagination about the product defined as the attitudes toward it in their minds. Thus, we can develop the following hypothesis:

H8: Artistic person will positively affect customers' attitude toward online advertising in e-commerce industries

In the literature review, we described three types of online advertising (text, image, and rich media ads) which we are going to analyse in our model. Different type of ads can help companies to achieve a different level of brand awareness and induce customers to click on the add which lead him to a landing page. Earlier research found that even without click-through, banner advertisements resulted in heightened awareness, brand perceptions and attitudinal shifts for brands (Briggs and Hollis, 1997). Other research with the help of eye-tracking technology investigated that animation and location of banner advertisement were not important to attract viewer's attention (Smith et al., 2004). However, Kim et al. (2004) revealed that animated banner (rich media ad) advertisements generate higher recall, more favourable attitude towards online advertisement and higher click-through intension than static ads. Appiah (2006) analysed the effect of multimedia on a commercial website and found that the advertisement with audio and video results in better perception as they are more targeted and ensure better rating on the site in comparison with text only. Based on this we can develop the following hypothesis:

H9: Type of online advertising will significantly affect customers' attitude toward online advertising in e-commerce industries

H9a: To compare with text ads, rich media advertising will be perceived better

H9b: To compare with image ads, rich media advertising will be perceived better

4. Methodology

In order to answer our research questions, we will use multiple linear regression analysis. In this section, we will explain the basis of this method.

Regression analysis is a powerful and flexible procedure for analyzing associative relationships between a dependent variable and one or more independent variables. As we assume that there are several factors which can influence consumers' attitude towards online advertising, we are going to conduct multiple regression analysis as it involves a single dependent variable and two or more independent variables (Malhotra, 2010). This regression is used to identify the strength of the effect that the independent variables have on a dependent variable. Also, it can be used to predict the effects or impacts of changes. Moreover, it allows for predicting trends and future values. Since the main goal of our research is to define the effects of personal and demographic characteristics on customers' attitude towards online advertising, the multiple linear regression is the best method to show an influence of independent variables on the dependent variable.

The model is based on the least-squares criterion which estimates the parameters in such a way as to minimize the total error. Moreover, this process also maximizes the correlation between the actual values of Y and the predicted values, \hat{Y} (Malhotra, 2010). Multiple linear regression is not only fitting a linear line through a cloud of data points, but it also has three stages:

1. Analysing the correlation and directionality of the data;
2. Estimating the model, i.e., fitting the line;
3. Evaluating the validity and usefulness of the model.

In the results, we will consider Adjusted R-squared as it is adjusted for the number of independent variables and the sample size to account for diminishing returns. The R measures the percent of the variation in the dependent variable that can be accounted for or explained by your independent variables (Leamer, 1999).

In order to conduct our research, we are going to run the two multiple linear regressions with dummy variables:

Attitude towards online advertising

$$= \text{millennials} + \text{gender} + \text{reserved} + \text{lazy} + \text{sociable} \\ + \text{attentive} + \text{artistic} + \text{income11k} + \text{income50k} + \text{text_ad} \\ + \text{image_ad},$$

where

- *Attitude towards online advertising* is a dependent variable which measures how customers perceive online advertising of three types: text ads, image ads and rich media ads. Scale from 1 to 5.
- *millennials* are dummy variable with value 1 for people who are in the age range between 18 to 37 years old, and 0 is for generation X whose age is from 37 to 68 years old;
- *gender* is also a dummy variable with value 1 for females and 0 for males;
- *reserved* variable is personal customer characteristic which indicates the strength of whether a person reserved or not with a scale from -2 to 2;
- *lazy* variable is personal customer characteristic which indicates whether a person lazy or not with a scale from -2 to 2;
- *sociable* variable is personal customer characteristics which indicate whether the person sociable or not with a scale from -2 to 2;
- *attentive* variable is personal customer characteristics which indicate whether the person attentive or not with a scale from -2 to 2;
- *artistic* variable is personal customer characteristics which indicate whether the person artistic or not with a scale from -2 to 2;
- *income11k* is a dummy variable with value 1 for people with annual income up to \$11'000, and 0 otherwise;
- *income50k* is a dummy variable with value 1 for people with annual income from \$11'000 to \$50'000, and 0 otherwise;
- *text_ad* is a dummy variable which has value 1 when the dependent variable is customers' attitude towards online text advertising;
- *image_ad* is a dummy variable which has value 1 when the dependent variable is customers' attitude towards online image advertising;

Firstly, to compare immediately attitude toward each type of advertisement (text, image, rich media), we included such dummy variables as *text_ad* and *image_ad*

into our regression model which help us to investigate regression model once for every type of advertisement. Secondly, we coded age into dummy variables in order to analyse Millennials' and Generation X' attitude towards online ads and their purchase intention. Also, we coded income and gender into dummy variables.

To note, if income is above \$50'000, then dummy variables such as *income11k* and *income50k* will be treated in the regression model as 0. In addition, if it is rich media ads, then dummy variables such as *text_ad* and *image_ad* will be treated in the regression model as 0.

5. Data

The dataset we use in our study was collected by Roffo and Vinciarelli (2016) for their benchmark study and is publicly available. The dataset consists of several main groups of information which altogether provide a clear insight into the personal features of the people participating in the experiment.

There are 120 individuals in the dataset whose personalities and background was assessed during the experiment. All the participants were interviewed to identify their personal background. Participants were asked to provide their personal and family names and contact information; this data is not available for the public due to security reasons. After they were provided with 15 real ads (5 – text ads; 5 – image ads; 5 – rich media ads) and asked to rate (from 1-star to 5-star) the advertisement according to if they like it or not. Then the participants had to answer a short questionnaire of 10 questions on time (see Appendix 1). For our research we used such data:

- Gender – Female and Male;
- Age – 18-68 years old;
- Income level varies between 0 and 1, where 0 is for \$11'000 per year or less, and 1 is for \$50'000 per year;
- Attitude towards online text advertising measures from 0 to 5;
- Attitude towards online image advertising measures from 0 to 5;
- Attitude towards online rich media advertising measures from 0 to 5;

In addition, participants were asked how well the following statements describe their personalities: I see myself as someone who

- is reserved;
- tends to be lazy;
- is outgoing, sociable;
- does a thorough job;
- has an active imagination.

The scale was from -2 (Strongly disagree) to 2 (Agree Strongly).

According to our hypotheses and research questions, we are going to use customers' demographic characteristics which includes age, gender and income, and

customers' personal characteristics which were assessed from the questionnaire. In order to find the influence of these factors on customers' attitude towards online advertising and purchase decision, we will analyse the data for the same participants, but we will consider their assessment of online advertising in the following industries: Health & Beauty and Console & Video Games. We predict that demographic factors and personal characteristics will affect the liking of online advertising by customers differently in these industries, as the literature review showed us that the target groups in Console & Video Games and Health & Beauty sectors are totally opposite. Literature review gave us the evidence that advertisements and understanding consumers' characteristics for targeting are important for Health & Beauty and Console & Video Games industries but only several studies were conducted to find and define proper customers' targeting features. In addition, one more aim of our thesis is to investigate whether demographic and personal characteristics are significant and have the same effect on customers' attitude toward online advertising in any industry or there are differences among industries, which is really important for managerial implication in the targeting strategy.

In the Health & Beauty industry, we expect elderly and women will have a better attitude toward online ad than men. Nonetheless, we assume a totally opposite conclusion in the Console & Video Games industry: Millennials and men will have a positive attitude toward online advertising. Also, we propose that personal characteristics will have a significant and positive effect on attitude toward online ad in each industry except question 1 (reserved person). Thus, we propose that Millennials and Generation X should be treated differently in online advertising.

5.1. Descriptive statistics

In Appendix 2 we present descriptive statistics of our variables. Respondents were asked to assess different types of online advertising in two industries such as Health & Beauty and Console & Video Games. The attitude towards online advertising which then leads to purchase intention was measured using the 5-point Likert scale. The scale ranged from 1-star to 5-stars. In addition, participants were provided with 5 real online advertising for each type: text, image, rich media.

In the Health & Beauty industry, the maximum value of attitude towards online text advertising is 3.8 and the minimum is 1 with a mean of 1.865 and standard deviation of 0.773. The value of attitude towards online image advertising varies from 1 up to 4.2 with an average value of 2.104 and standard deviation of 0.830. For rich media, online advertising maximum value achieves 5 and minimum is equal to 1, while the mean is 2.017 and the standard deviation is 0.973.

In Console & Video Games industry the maximum value of attitude towards online text advertising is 5 and the minimum is 1 with a mean of 2.077 and standard deviation of 1.112. The maximum value of attitude towards online image advertising is 5, while the minimum is 1, mean of 2.045 and standard deviation of 1.152. For rich media online advertising, the attitude score varies from 1 to 5 with an average value of 2.143 and standard deviation of 1.139.

Based on descriptive statistics above, we can state that in Health & Beauty industry only online rich media advertising got the maximum value of 5, while in Console & Video Games all types of online advertising got 5 out of 5.

Moreover, all participants have filled a questionnaire with 5 questions to measure their personal traits. The answers were measured using the 5-point Likert scale. The scale ranged from -2= strongly disagree to 2= strongly agree. The maximum and minimum values for all 5 questions are 2 and -2 respectively. The mean for participants who see themselves as a reserved person (Q1) is 0.558 and standard deviation= 1.024. The mean for participants who see themselves as a lazy person (Q2) is -0.300 and standard deviation= 1.216. The mean for participants who see themselves as a sociable person (Q3) is 0.316 and standard deviation= 1.017. The mean for participants who see themselves as a reserved person (Q4) is 1.113 and standard deviation= 0.764. The mean for participants who see themselves as a reserved person (Q5) is 1.158 and standard deviation= 0.857.

5.2. Sample

Our sample consists of 120 random people who were analysed in the regression model in order to meet our predictions. Participants were asked to indicate age and gender. The minimum value for age is 18 and the maximum is 68 (Appendix 1).

From Table 5.1, in terms of gender, 35.9% are males and 64.1% are females. As we mentioned previously, we would like to investigate Millennials and Generation X and their attitude towards online advertising. In the literature review, we mentioned that Millennials is a cohort of people who were born between 1981 and 1997. In our model, we consider Millennials from 18 years old as they treated as young Millennials (Frey, 2016). In terms of age, sample consist of 76.6% are Millennials and 23.4% are Generation X. In terms of income, there are 24.1% of participants which income varies from \$0 to \$11'000, 46.1% of participants have an annual income in the range from \$11'001 to \$50'000, and 29.8% have income more than \$50'001 in a year.

Table 5.1. Demographic characteristics

Gender	% of sample
Male	35.9%
Female	64.1%
Age	
Millennials	76.6%
Generation X	23.4%
Income	
\$0-11'000	24.1%
\$11'001-50'000	46.1%
>\$50'001	29.8%

6. Analysis and Results

In this part of the paper, we will present the model's results in order to find out answers for our research questions. We will analyse how demographic and personal characteristics influence the customers' attitude towards online advertising in two different e-commerce industries: Health & Beauty and Console & Video Games. To do this, we used linear multiple regression which was applied in RStudio. Due to this approach, we have evaluated the beta coefficients (β), t- and p-values which help us to determine whether the hypothesis is supported and significant.

6.1. Multicollinearity

Before making decisions about the results derived from our regression model, we need to check the model on multicollinearity between explanatory variables. To diagnose it, we applied VIF-values test in order to assess the extent of correlation between one independent variable and other predictor variables in the model. Multicollinearity is considered to be a problem if VIF values are 10 or above (Saunders, 2011). As we can see from Table 6.1, the VIF-values are within satisfactory range, giving us a clear understanding that multicollinearity is not a problem in this model.

Table 6.1. VIF-values

Variable	VIF-value
Millennials	1.103380
Gender	1.077428
Reserved	1.428073
Lazy	1.475830
Sociable	1.794754
Attentive	1.294526
Artistic	1.372473
Income11k	1.554652
Income50k	1.518727
Text_ad	1.333428
Image_ad	1.333333

6.2. Correlation Matrix

We applied the correlation matrix to find out the strength of the relationship between all the variables. Table 6.2. presents the correlation matrix of all our independent variables:

Table 6.2. Correlations Matrix

	Age	Reserv ed	Lazy	Socia ble	Attenti ve	Artisti c	Income	text_ad G	image_ adG
Age	1.000								
Reserved	-0.083	1.000							
Lazy	-0.348	0.255	1.000						
Sociable	0.119	-0.499	-0.422	1.000					
Attentive	0.187	-0.010	-0.307	0.117	1.000				
Artistic	-0.016	-0.101	-0.002	0.287	0.325	1.000			
Income	-0.036	0.019	-0.152	0.141	-0.027	-0.174	1.000		
text_adG	-0.001	0.000	0.000	0.000	0.000	0.000	-0.007	1.000	
image_adG	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.500	1.000

From the correlation matrix above we can see that there are no high correlations between independent variables. Thus, the interpretation of results will be valid and reliable from the perspective of multicollinearity.

6.3. Regression analysis

We used regression analysis to investigate the hypotheses and to see if demographic factors and personal characteristics have an influence on customers' attitude towards online advertising in the Console & Video Games industry. In this regression, the dependent variable is customers' attitude towards online advertising

of three types: text ads, image ads and rich media ads. To find what affects the dependent variable, we used such independent variables as answers from the questionnaire: 1 – reserved person; 2 – lazy person; 3 – sociable person; 4 – attentive person; 5 – artistic person. Also, we added such dummy variables as millennials (participants whose age is from 18 to 37), gender, income11k (\$0-11'000), income50k (\$11'001-50'000), text_adG and image_adG. The following regression was run:

Attitude towards online advertising

$$= \text{millennials} + \text{gender} + \text{reserved} + \text{lazy} + \text{sociable} + \text{attentive} + \text{artistic} + \text{income11k} + \text{income50k} + \text{text_adG} + \text{image_adG},$$

From the regression analysis we got the following outcomes:

Table 6.3.1. Regression outcomes

	Estimate	Std. Error	t-value	Pr(> t)	
(Intercept)	2.14670	0.20628	10.407	< 2e-16	***
Millennials	0.37621	0.12936	2.908	0.003869	**
Gender	-0.41603	0.11276	-3.690	0.000260	***
Reserved	-0.16388	0.06085	-2.693	0.007417	**
Lazy	0.26510	0.05207	5.091	5.85e-07	***
Sociable	0.28263	0.06866	4.117	4.81e-05	***
Attentive	0.42357	0.07767	5.453	9.39e-08	***
Artistic	-0.27939	0.07126	-3.921	0.000106	***
Income11k	0.29417	0.15171	1.939	0.053310	.
Income50k	-0.39088	0.12877	-3.035	0.002584	**
Text_adG	-0.05508	0.12760	-0.432	0.666266	
Image_adG	-0.09000	0.12759	-0.705	0.481046	
Signif. codes:	0 '***'	0.001 '**'	0.01 '*'	0.05 '.'	0.1 ' ' 1
Multiple R-squared: 0.2648, Adjusted R-squared: 0.2415,					
F-statistic: 11.39 on 11 and 348 DF, p-value: < 2.2e-16					

To make conclusions on the model, we have to check the model for heteroscedasticity. The assumption of homoscedasticity is an important assumption

of linear regression and indicates that the variance of the errors (residuals) is constant across all the values of the independent variables (Laerd Statistics, 2015). Due to the studentized Breusch-Pagan test, we reject the null hypothesis as p-value = 0.0351. Thus, we can state that heteroscedasticity in the model is present and we are going to estimate heteroskedasticity consistent variance covariance matrix for the parameters in order to make correction of the model. After correction we got rid of heteroscedasticity and got more reliable outcomes:

Table 6.3.2. Regression outcomes after fixing heteroscedasticity

	Estimate	Std. Error	t-value	Pr(> t)	
(Intercept)	2.14670	0.212806	10.0876	< 2.2e-16	***
Millennials	0.37621	0.125012	3.0094	0.0028086	**
Gender	-0.41603	0.114624	-3.6295	0.0003265	***
Reserved	-0.16388	0.067487	-2.4283	0.0156777	*
Lazy	0.26510	0.055789	4.7519	2.953e-06	***
Sociable	0.28263	0.076122	3.7129	0.0002385	***
Attentive	0.42356	0.078837	5.3727	1.423e-07	***
Artistic	-0.27939	0.068447	-4.0819	5.545e-05	***
Income11k	0.29417	0.150709	1.9519	0.0517521	.
Income50k	-0.39088	0.125075	-3.1251	0.0019267	**
Text_adG	-0.05508	0.128614	-0.4282	0.6687510	
Image_adG	-0.09000	0.127083	-0.7082	0.4792965	

From the regression model, we can see that almost all independent variables are statistically significant except of dummy variables of text ad and image ad. In the Console & Video Games industry, demographic factors such as age, gender and income are statistically significant and affect customers' attitude toward online advertising. From gender perspective, males perceive online advertising better ($\beta = -0.41603$, p-value = 0.00033) than females in the Console & Video Games industry. Thus, we can conclude that hypothesis 1 is supported. Also, we can see that Millennials ($\beta = 0.37621$, p-value = 0.00281) are more likely to make online purchases induced by online advertising. Due to these results, we can state that hypothesis 2 is also supported. However, there is some difference in income: the model shows us that customers with annual income from \$0 to \$11'000 are likely to have a positive attitude toward online advertising, as β is equal to 0.29417.

Nevertheless, if customers have an annual income from \$11'001 to \$50'000, the likelihood of their positive attitudes towards online ads will decline. Because of the opposite signs for income, it is complicated to make conclusions, so hypothesis 3 is undefined.

Regarding personal characteristics, all answers on questions are statistically significant, thus we can say that personal factors should be considered before launching online advertising in the Console & Video Games industry. From the model we can conclude that reserved ($\beta = -0.164$, $p\text{-value} = 0.0157$) and artistic ($\beta = -0.279$, $p\text{-value} = 0.0002$) persons have more negative attitude towards online advertising than others. Thus, hypothesis 4 is supported, but hypothesis 8 is not. Furthermore, lazy ($\beta = 0.265$, $p\text{-value} = 2.953e-06$), sociable ($\beta = 0.283$, $p\text{-value} = 0.00024$) and attentive ($\beta = 0.423$, $p\text{-value} = 1.423e-07$) variables are affecting positively, which means that these persons more tend to make purchase after interacting with online ads. Due to these results, hypothesis 5,6 and 7 are supported. Thus, we can conclude that lazy, sociable or attentive Millennial males perceive online advertising better than others in the Console & Video Games industry. Moreover, the type of advertising variables are not significant, so hypothesis 9 is not supported.

Table 6.3.3. Hypotheses summarized

Hypotheses	Results
H1: Gender will affect customers' attitude toward online advertising in e-commerce industries: males have a better perception of ads than females in e-commerce industries	Supported
H2: Age will negatively affect customers' attitude toward online advertising in e-commerce industries	Supported
H3: Income will negatively affect customers' attitude toward online advertising in e-commerce industries	Unsupported (Insignificant)
H4: Reserved person will negatively affect customers' attitude toward online advertising in e-commerce industries	Supported
H5: Lazy person will positively affect customers' attitude toward online advertising in e-commerce industries	Supported
H6: Sociable person will positively affect customers' attitude toward online advertising in e-commerce industries	Supported

H7: Attentive person will positively affect customers' attitude toward online advertising in e-commerce industries	Supported
H8: Artistic person will positively affect customers' attitude toward online advertising in e-commerce industries	Not supported
H9: Type of online advertising will significantly affect customers' attitude toward online advertising in e-commerce industries	Not supported

The second regression analysis will be conducted for customers in the Health & Beauty industry and their attitude towards online advertising. The regression model will be considered by the next equation:

$$\begin{aligned}
 & \textit{Attitude towards online advertising} \\
 & = \textit{millennials} + \textit{gender} + \textit{reserved} + \textit{lazy} + \textit{sociable} \\
 & + \textit{attentive} + \textit{artistic} + \textit{income11k} + \textit{income50k} \\
 & + \textit{text_adH} + \textit{image_adH},
 \end{aligned}$$

From the regression analysis we got the following outcomes:

Table 6.3.4. Regression outcomes

	Estimate	Std. Error	t-value	Pr(> t)	
(Intercept)	2.323109	0.170900	13.593	< 2e-16	***
Millennials	-0.347240	0.107178	-3.240	0.00131	**
Gender	0.170573	0.093418	1.826	0.06872	.
Reserved	-0.077492	0.050410	-1.537	0.12514	
Lazy	0.123439	0.043143	2.861	0.00448	**
Sociable	0.234257	0.056882	4.118	4.77e-05	***
Attentive	0.041281	0.064349	0.642	0.52161	
Artistic	-0.004189	0.059041	-0.071	0.94348	
Income11k	-0.269289	0.125693	-2.142	0.03285	*
Income50k	-0.262722	0.106689	-2.462	0.01428	*
Text_adH	-0.149477	0.105712	-1.414	0.15825	
Image_adH	0.090000	0.105708	0.851	0.39513	
Signif. codes:	0 '***'	0.001 '**'	0.01 '*'	0.05 '.'	0.1 ' ' 1
Multiple R-squared: 0.1393, Adjusted R-squared: 0.1121,					
F-statistic: 5.12 on 11 and 348 DF, p-value: 1.902e-07					

Again, before concluding on results, regression model was also tested for heteroscedasticity. In order to check it, we conducted Breusch-Pagan test from which we can see p-value that is equal to 0.01048 which indicates that we need to reject the null hypothesis that the variance of residuals is constant, therefore, heteroskedasticity is present. In order to get the correct standard errors, we estimate a heteroskedasticity consistent variance covariance matrix for the parameters. Subsequently, we got the new standard errors and got rid of heteroscedasticity which allows us to make reliable conclusions:

Table 6.3.5. Regression outcomes after fixing heteroscedasticity

	Estimate	Std. Error	t-value	Pr(> t)	
(Intercept)	2.323109	0.193417	12.0109	<2.2e-16	***
Millennials	-0.347240	0.115295	-3.0117	0.0027875	**
Gender	0.170573	0.088726	1.9225	0.0553627	.
Reserved	-0.077492	0.062199	-1.2459	0.2136471	
Lazy	0.123439	0.041848	2.9497	0.0033959	**
Sociable	0.234257	0.062227	3.7646	0.0001958	***
Attentive	0.041281	0.062596	0.6595	0.5100160	
Artistic	-0.004189	0.055615	-0.0753	0.9400020	
Income11k	-0.269289	0.126129	-2.1350	0.0334569	*
Income50k	-0.262722	0.111761	-2.3508	0.0192929	*
Text_adH	-0.149477	0.106520	-1.4033	0.1614236	
Image_adH	0.090000	0.110664	0.8133	0.4166176	

First of all, we can see that all demographic factors such as age (Millennials) (p-value=0.03), gender (p-value=0.05) and income (p-value=0.034, p-value=0.02) are significant. Thus, customers' demographic characteristics have an effect on customers' attitude towards online advertising, subsequently on purchase intention in the Health & Beauty industry. As we mentioned in the literature review, women more tend to make online purchasing and better perceive online advertising in that industry, although there is an opposite effect in most other industries. From the model, we can see that females are more likely to have a positive attitude ($\beta=0.171$, p-value=0.05) on online advertising than males and we can state that hypothesis 1 is not supported. However, such outcomes are related to the specific target group in this industry. If the person belongs to Millennials cohort, the likelihood that this

person will like or click on online advertising is decreasing ($\beta=-0.438$, p -value=0.03) to compare with customers who belong to Generation X. Moreover, we can state that there is less probability that Millennials will make a purchase caused by online advertising in the Health & Beauty industry. Thus, hypothesis 2 is not supported. The explanation of this can be that youngsters care less about their skin and health, so Millennials are less likely to have a positive attitude towards online advertising in this industry. With regard to income, customers whose annual income from \$0 to \$11'000 ($\beta=-0.269$, p -value=0.034) and from \$11'001 to \$50'000 ($\beta=-0.267$, p -value=0.019) perceive online advertising more negatively than those who has more than \$50'001 as income in a year. If customer's annual income more than \$50'001 the dummy variables income11k and income50k will be treated in the model as 0. Thus, people with higher salary has a better attitude towards online advertising in the Health & Beauty industry. Therefore, hypothesis 3 is not supported.

Secondly, customer's attitude towards online advertising also influenced by personal characteristics. As we can see from the model, only two characteristics such as laziness and sociability are significant, while personal characteristics such as reserved, attentive and artistic person are not significant. Therefore, in the Health & Beauty industry, lazy people are more likely to make online purchases driven by online advertising ($\beta=0.123$, p -value=0.003). Hence hypothesis 5 is supported. In addition, personal attribute such as sociability influences attitude towards online advertising also positively ($\beta=0.234$, p -value=0.0002) and we can state that hypothesis 6 is also supported. Since such variable as reserved, attentive and artistic are not significant, hypothesis 4,7 and 8 are not supported. Moreover, the type of advertising variables are also not significant, therefore hypothesis 9 is not supported.

To sum up, we can say that demographic characteristics such as age, gender and income and personal characteristics such as laziness and sociability affect customer's attitude towards online advertising in the Health & Beauty industry. As a result, we can assume that it has an influence on purchase decision of the customer, as a positive attitude to the online advertisement increases the probability of purchase while a negative attitude to the online advertisement decreases the probability of purchase.

Table 6.3.6. Hypotheses summarized

Hypotheses	Results (Health & Beauty)	Results (Console & Video Games)
H1: Gender will affect customers' attitude toward online advertising in e-commerce industries: males have a better perception of ads than females in e-commerce industries	Not supported	Supported
H2: Age will negatively affect customers' attitude toward online advertising in e-commerce industries	Not supported	Supported
H3: Income will negatively affect customers' attitude toward online advertising in e-commerce industries	Not supported	Unsupported (Insignificant)
H4: Reserved person will negatively affect customers' attitude toward online advertising in e-commerce industries	Not supported	Supported
H5: Lazy person will positively affect customers' attitude toward online advertising in e-commerce industries	Supported	Supported
H6: Sociable person will positively affect customers' attitude toward online advertising in e-commerce industries	Supported	Supported
H7: Attentive person will positively affect customers' attitude toward online advertising in e-commerce industries	Not supported	Supported
H8: Artistic person will positively affect customers' attitude toward online advertising in e-commerce industries	Not supported	Not supported
H9: Type of online advertising will significantly affect customers' attitude toward online advertising in e-commerce industries	Not supported	Not supported

As we can see from the table above, most of the hypotheses are not supported. However, if we consider whole e-commerce retail business then all hypotheses together are supported which means that it is important for companies to count

demographical and personal characteristics. Besides, all the factors we examined are significant in both regression models, but the effects are different due to industry specifications as we can see from the comparison of two industries (Table 5.3.6). Such a significant difference is caused by the various target audience in these e-commerce industries due to products function.

7. Discussion

7.1. Summary and implication for theory

The aim of our study is to investigate the influence of demographic factors and customer's personal characteristics on the attitude toward online advertising in e-commerce industries. Online advertising becoming more and more popular among companies in different industries. Prior literature on the topic of online advertising focused only on demographic factors and personal characteristics for everyone (Chen, 2009; Kaur et. al., 2013; Foster, 2004; Ersoy et. al.,2015). However, going through the literature about the attitude toward online advertising we found a lack of studies about demographic factors and personal characteristics in the *e-commerce industries*. Moreover, there are no researches concerning the differences in online advertising strategies among Millennials and Generation X.

Online advertising will continue to increase with the growth of internet users. More companies find that online advertising become the most effective method in their global marketing strategy. Nevertheless, if companies want to succeed in online advertising, they have to understand customers' demographic and personal characteristics in order to achieve positive attitudes toward online advertising in e-commerce industries. It is crucial for effective targeting to understand customer cohorts as priorities of Millennials and Generation X are changing often and marketers should adjust marketing strategies to these changes.

Considering the fact that the company's performance significantly depends on effective marketing and targeting strategy in order to reach the right customer who would like to buy the promoted product. Thus, firstly, we want to answer in our study how are customers' attitude toward online advertising impacted by demographic factors in the e-commerce industries? Secondly, we also want to find out how are customers' attitude toward online advertising impacted by personal characteristics in the e-commerce industries?

At the present time, marketers divide their customers into different groups based on common interests and behaviour. The most common way to divide customers into groups is to split them up into cohorts based on age. In 1977, Inglehart first proposed Generational Cohort Theory as a way to divide the population into

segments - generational cohorts. Today, marketers' the most targeted cohorts in e-commerce industries are Millennials and Generation X. Millennials are the first generation who spent their entire lives in the digital environment and many researchers describe them as Digital Natives. Also, Generation X spends the most time on social media: almost 7 hours per week to compare with Millennials who are spending just over 6 hours per week (Nielsen, 2016).

In order to answer our research questions and find the effect of demographic and personal characteristics on attitude toward online advertising in e-commerce industries, we used multinomial linear regression with dummy variables.

We found that such demographic factors as gender, age, income, reserved, and such personal characteristics as a reserved, lazy, sociable, attentive, artistic person are significant and have an effect on customers' attitude toward online advertising in e-commerce industries. Conducting analysis for two different e-commerce industries helped us to find the difference in the influence of these factors on customer's attitude towards online ads in the various industries.

Based on the model we proved that Millennials better perceive online advertising than Generation X in Console & Video Games industry. Moreover, males have a better attitude toward online advertising in this industry. This finding supports our assumption about the influence of these two demographic factors on customer's attitude toward online advertising in e-commerce industries based on literature review. In some articles, it was proved that men are more likely to make online purchases than women. As a result, we found out that higher positive attitude leads to purchase intention. Due to analysis, income is also a crucial variable which should be considered for targeting strategy. Despite that income variables are significant we cannot conclude about its effect due to opposite signs of coded dummy variables.

Another significant predictor for attitude toward online advertising in Console & Video Games industry is personal characteristics such as a reserved, lazy, sociable, and attentive person. As we assumed, reserved people are less likely to make online purchases in e-commerce industries as due to prior researches, these people have a negative relationship between their reserved personality and usage of computers.

Moreover, they are afraid to do online shopping as they have to disclose personal information in order to receive a parcel. We also found a positive effect of laziness on online ads perception and our assumption that nowadays people are lazier to go for offline shopping is supported. Moreover, sociable and attentive persons are more likely to do online purchasing induced by online advertising as customers with a high level of openness to experience are more likely to become interested in new things.

In order to provide managers with more accurate outcomes, we also conducted the same analysis for the same participants but in the Health & Beauty industry. The results showed that such demographic factors as gender, age and income have an effect on attitude toward online advertising. However, the outcomes are contradictory to our assumptions. In the Health & Beauty industry women and Generation X perceive online advertising better than men and Millennials. It is caused by the fact that the target group in this industry is opposite to Console & Video Games industry because the main target group for cosmetics product is older women as they care more about their skin and health. Regarding the income, people with higher salary has a better attitude towards online advertising in this industry which is inconsistent with our hypothesis.

Furthermore, only two demographic characteristics such as laziness and sociability have a significant effect on the perception of online advertising in Health & Beauty industry, while personal characteristics such as reserved, attentive and artistic person are not significant in this industry. In addition, the type of online ads does not impact significantly customer's attitudes towards this advertisement in both industries. It means that it does not matter either text, image or rich media ads is used by marketers as the customers perceive mostly the information of advertisement according to our research outcomes.

To sum up, based on our regression models we can conclude that demographical and personal characteristics are very important factors that should be considered by companies and marketers in the process of creating customer target strategy and online advertisement in e-commerce industries. These factors have a direct influence on customers' attitudes towards online advertisement and, therefore, on their purchase intention. What is more, as we got different outcomes from Health

& Beauty industry and Console & Video Games industry, it signalises that companies have to consider the specificity of the industry company operates and take into account information about potential customer independently from general e-commerce trends since all online advertising required adjusting strategy for different industries.

7.2. Implication for managers

The main objective of this study is to investigate the influence of demographic factors and personal characteristics on customers' attitudes toward online advertising in e-commerce industries. The results showed that in the whole e-commerce retail business all hypotheses together are supported which means that it is important for companies to count demographical and personal characteristics. Besides, all the factors we examined are significant in both regression models, but the effects are different due to industry specifications. The results proved that the company can get the benefit from making more online ads if the company adjust its marketing and targeting strategy to the specificity of industry and consider such demographic variables as gender, age, income and such personal characteristics as a reserved, lazy, sociable, attentive, and attractive person. Moreover, we recommend companies to divide their customers into cohorts such as Millennials and Generation X in the process of targeting. Since online ads are mainly placed on different social media, we advise marketers to choose Millennials as the main target group as they were raised on gadgets and the web.

7.3. Further research

Moreover, the results can benefit not only marketers but also future research as there are several limitations which may be taken into account in future studies. The main limitation of the study is that results and conclusions are based only on two e-commerce industries such as Health & Beauty and Console & Video Games. Lissitsa and Kol (2016) investigated that men purchase electric appliances more than women, but researches claiming that the product category chosen for the research may have created a bias in the results, as female may be more likely to purchase other product categories online. We faced the same problem, but it could be improved in future research by adding more industries to make more accurate results for e-commerce retail businesses. Also, to improve the accuracy

of conclusions for e-commerce industries, future research could be conducted on more industries to find the differences between them. In addition, it would be relevant for future research to add more variables into the model such as education level, household income, occupation and others, which could improve our results.

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Appendix 1

Instruction: How well do the following statements describe your personality?

I see myself as someone who ...	Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
... is reserved	(1)	(2)	(3)	(4)	(5)
... is generally trusting	(1)	(2)	(3)	(4)	(5)
... tends to be lazy	(1)	(2)	(3)	(4)	(5)
... is relaxed, handles stress well	(1)	(2)	(3)	(4)	(5)
... has few artistic interests	(1)	(2)	(3)	(4)	(5)
... is outgoing, sociable	(1)	(2)	(3)	(4)	(5)
... tends to find fault with others	(1)	(2)	(3)	(4)	(5)
... does a thorough job	(1)	(2)	(3)	(4)	(5)
... gets nervous easily	(1)	(2)	(3)	(4)	(5)
... has an active imagination	(1)	(2)	(3)	(4)	(5)

Source: Rammstedt and John (2007)

Appendix 2

	Variables	Mean	Max Value	Min Value	Std Dev
Demographic	Gender	0.642	1	0	0.481
characteristics	Age	31.41	68	18	11.741
Personal characteristics	Reserved	0.558	2	-2	1.024
	Lazy	-0.300	2	-2	1.216
	Sociable	0.316	2	-2	1.017
	Attentive	1.113	2	-2	0.764
	Artistic	1.158	2	-2	0.857
Attitude towards online advertising in the Console & Video Games industry	Attitude toward text ad	2.077	5	1	1.112
	Attitude toward image ad	2.045	5	1	1.152
	Attitude toward rich media ad	2.143	5	1	1.139
	Attitude toward text ad	1.865	3.8	1	0.773

	Variables	Mean	Max Value	Min Value	Std Dev
the Health & Beauty industry	Attitude toward image ad	2.104	4.2	1	0.830
	Attitude toward rich media ad	2.017	5	1	0.973
