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FINNISH CONSUMER'S ATTITUDES TOWARDS AI-GENERATED PERSONALIZED RECOMMENDATIONS

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I hereby declare that I have compiled the thesis independently
and all works, important standpoints and data by other authors
have been properly referenced and the same paper
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The document length is 9014 words from the introduction to the end of the conclusion.

Janina Kuronen ……

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ABSTRACT

Artificial intelligence (AI) marketing is ground-breaking technology that allows machines and robots to collect and process immense amounts of data to generate personalized recommendations to target the right audience at the right time. To succeed, businesses need to understand consumers' attitudes toward AI-generated personalized marketing.

By addressing the quantitative research questions, this thesis aims to fill in the gap in knowledge and understanding within the Finnish market to gain a comprehensive understanding of Finnish consumers' attitudes towards personalized recommendations generated through AI. A non-probability sampling method was used and data was collected through an online survey from different social media platforms, and a descriptive statistical analysis method was used to analyse the collected quantitative data.

The main findings highlight the value of personalized recommendations in meeting consumer preferences and needs. However, a significant minority holds negative attitudes, indicating the need for improvements in delivery, presentation, privacy, and transparency. Privacy concerns, and the need for transparency emerge as crucial factors that businesses and marketers should consider in their AI-generated personalized marketing strategies. This study offers valuable insights into the perceptions and attitudes of Finnish consumers towards personalized AI-generated recommendations. It underscores the importance of ongoing research to delve deeper into the subject, explore diverse perspectives, and drive further development. Such endeavours are crucial for enhancing the effectiveness of personalized marketing strategies and ensuring consumer satisfaction in the era of AI marketing.

Keywords: Artificial Intelligence, personalized marketing, social media, digital marketing, consumer attitudes, Finland

INTRODUCTION

Billions of people worldwide incorporate digital communication technologies into their daily routines, using the internet, social media, and mobile applications. In Finland, for example, 82% of Finns aged 16 to 89 used the Internet several times a day in 2020 (Statistics Finland, 2023) and people spent more time in front of screens in 2021 than ever before (Statistics Finland, 2023). The emergence of mobile devices and the widespread use of social media platforms have presented novel opportunities for marketers to connect with consumers (Hajli, 2014).

The technology industry is growing rapidly, and as the devices and apps consumers keep using are advancing, so are the tools that marketers use to set their marketing strategies. Artificial Intelligence (AI) is one of these disruptive technologies. AI is not only the robot that consumers see in movies, but any kind of machine that needs to think like a human resulting in continuous learning and problem-solving (Verma et al., 2021). AI can manage and analyse huge amounts of data in a way that human intelligence is not able to (Ibid.), and the data collected can be used in marketing activities. The competition for consumers' attention is high and enterprises across the globe are leveraging online customers in their AI marketing strategies, as it has a positive impact on organizational performance such as increases in profits, quality of service/products, sales growth, and customer satisfaction (Wu & Monfort, 2023).

Furthermore, the cutting-edge nature of AI technology has captured significant attention and generated a need for extensive research, as it holds immense potential to revolutionize marketing practices. Notably, AI tools have gained popularity among both marketers and consumers (Rana et al., 2021), fueling the growing interest in exploring their capabilities. This trend is evident in the substantial increase of research papers focusing on AI in peer-reviewed marketing journals, particularly from the year 2017 onwards (Feng et al., 2021).

According to Huang and Rust (2020), a significant transformative feature of thinking AI is its capacity to automatically analyze big data and personalize experiences. This results in a significant advancement in marketing's capability to target individual customers. Personalization in social

media is important for the success of companies because perceived personalization in social media advertising drives higher consumer brand engagement and stronger brand attachment (Shanahan et al., 2019). AI marketing strategy also positively impacts organizational performance such as increases in profits, quality of service/products, sales growth, and customer satisfaction (Wu & Monfort, 2023). The success of these personalized recommendations depends on the willingness of consumers to trust and use them (Aguirre et al., 2015).

Given that recommender systems are increasingly utilized in businesses, particularly in e-commerce and B2C marketing, to enhance sales, enrich the online purchase experience of customers, and boost engagement (Grewal et al., 2021; Tong et al., 2019; Chandra et al., 2022) it is crucial to comprehend how users' traits and actions influence the performance of AI, with the aim of facilitating e-commerce companies in further enhancing their recommender systems. Additionally, it is important to consider the influence of culture and demographic characteristics on privacy concerns, as they shape the perception of data-driven innovation and marketing strategies as intrusive (Bleier et al., 2020).

The research problem of this thesis is the lack of certainty regarding marketing information on Finnish consumers' attitudes towards AI-generated personalized marketing. This information is crucial in aiding Finnish businesses to develop improved and effective personalized marketing strategies and to enhance the customer experience.

Therefore, this study aims to construct a comprehensive understanding of the current attitudes towards AI-generated personalized marketing in social media platforms in Finland. Additionally, the research aims to identify factors that may impact consumer behaviour in relation to these recommendations, as well as explore the impact of privacy concerns on consumer engagement with these recommendations.

Thereby the following research questions will be addressed:

- RQ1: What are Finnish consumers' attitudes and awareness levels regarding AI-generated personalized recommendations?
- RQ2: What is the level of perception among Finnish consumers regarding personalized AI-generated recommendations?
- RQ3: Is there a significant relationship between target populations' concerns about privacy and their engagement with these recommendations?

By gathering data and analyzing the responses, we seek to paint a clear picture of the prevailing sentiment and perceptions among consumers in relation to this marketing approach. This research expects to contribute to a better comprehensive understanding of the implications and effects of AI and personalized marketing strategies, thus advancing our knowledge in this field. The study expects to provide practical implications for businesses to improve their recommendation systems and enhance the customer experience, contribute to the literature on personalized marketing, and get a better understanding of how consumers interact with and perceive personalized marketing strategies.

These insights will benefit marketers and businesses, as well as researchers and academicians. This information can help businesses and marketers better understand consumer needs and preferences, tailor their marketing strategies, and improve their personalized recommendation systems to enhance customer satisfaction and loyalty. It also aims to serve as a reference for future research and academic studies in this area. This research may also benefit consumers themselves, as it can help consumers become more aware of their own attitudes towards AI-generated personalized recommendations and make informed decisions about their usage and trust in such recommendations in their purchasing decisions.

A quantitative research method was used. More precisely a survey was conducted to gain insight into Finnish consumer's attitudes toward AI-generated personalized recommendations. The survey was divided to several parts (common beliefs, feelings, behaviour intention) to give detailed information regarding consumer attitudes. The survey provided the primary data for the research to help answer the research questions introduced above.

To reach the aim of this thesis, the thesis is organized in several chapters. The first chapter of this thesis provides a theoretical framework focusing on already existing studies, theories, and literature about the main concepts of this study. The second part of this paper is focusing on the methodological part and justifies the used research instrument. This part also explains why the quantitative approach was used and how the questionnaire was designed, planned, and analysed. This will follow with the empirical part where the results of the study and analysis with discussion are covered. This paper ends with the conclusion where the whole study is concluded, the main findings and recommendations will follow, and suggestions for further studies are covered.

The study was made by the author’s interest in digital marketing, consumer attitudes, and the use of AI in marketing practices. The author finds it interesting to understand the consumer's side of the use of AI and personalized marketing, as social media users we come across it daily sometimes without even acknowledging it. By delving into the consumer's standpoint. The author wishes to express sincere gratitude to all participants who took part in the online questionnaire and provided valuable feedback. Their insights and perspectives have contributed significantly to the study. The author would also like to extend thanks to the supervisor for their guidance and support throughout the research process.

1. THEORETICAL BACKGROUND

This chapter will introduce the main topics that form the theoretical framework of the study. First, the author introduces the basis of artificial intelligence and its use in marketing, then personalized marketing and personalized recommendations will be examined and lastly, consumers' attitudes will be introduced. This will give a base overview for the upcoming research in this thesis about the Finnish consumer's attitudes towards AI-generated personalized recommendations.

1.1. Artificial Intelligence in Marketing

AI is not a new concept, but lately, it has been one of the hot topics in marketing communities (Vlačić et al., 2021). AI refers to the ability of machines to perform tasks in a manner that is considered intelligent (Crittenden et al., 2019). This concept is closely linked to various cutting-edge digital technologies such as machine learning and robotics, enabling machines to think, perceive, and interact with humans. All machines that think like a human resulting in continuous learning and problem-solving are considered as AI (Verma et al., 2021), thus AI can be defined as a class of information systems that make rational decisions based on available information to solve problems (Paschen et al., 2020).

The rising significance of AI in marketing can be attributed to several factors such as the growth in computing power, decreased computing expenses, the abundance of big data, and the progress made in machine learning algorithms and models (Huang & Rust, 2021). AI applications offer businesses and marketers a unique opportunity to monitor online user behaviour and deliver personalized advertising content based on individual preferences. A marketer has the option to utilize various forms of AI intelligence such as mechanical AI that is designed to automate tasks that are monotonous and predictable, thinking AI that is intended to analyse data and generate novel conclusions or decisions based on that analysis and feeling AI that is developed to facilitate two-way interactions with humans or to analyse human emotions and sentiments (ibid.).

Davenport's (2018) research affirms this by also identifying three important business requirements that can be fulfilled by AI, namely, automating business operations, obtaining insights through data analysis, and engaging with customers and employees.

AI technology offers a wide range of applications in marketing, including chatbots, dynamic price adjustments, big data analytics, speech recognition, and targeted advertising, among others. Among these applications, personalized recommendation systems have emerged as one of the most widely used AI tools in marketing (Chung et al., 2016).

The significance of AI in personalization is evident, as it enables marketers to deliver tailored recommendations based on individual preferences and behaviors (Huang & Rust, 2021). By leveraging AI, marketers can employ data-intensive marketing strategies, such as retargeting and optimized advertising timing, to enhance customer engagement and improve business outcomes (Ibid.). In this study, we will focus specifically on AI-generated personalized recommendations.

From the different AI intelligences discussed before, thinking AI is good for personalization (Huang & Rust, 2021). Current AI applications can be utilized in several data-intensive marketing measures, examples of which include measures related to retargeting and timing of advertising (Ibid.). A marketing strategy incorporating AI has a positive impact on, for example, sales growth, and customer satisfaction (Wu & Monfort, 2023), which highlights the importance of using AI marketing strategies in highly competitive business environments.

1.2. Personalized marketing and personalized recommendations

As highlighted before, the internet and AI technology allow marketers to gather data about their customers and use this data to form usable information. There is a large number of different AI applications used in marketing strategies. This thesis focuses on personalized marketing, specifically examining personalization in the context of online advertising, and therefore other aspects of personalization such as product and service customization are not covered in the research topic.

Although there is no singular definition for personalization in marketing, it often refers to the practice of customizing products and purchase experiences to suit the individual preferences and

personal information of consumers (Chellappa & Sin, 2005; Chandra et al., 2022). Personalized offers can be developed by gathering data, for example, about customers' online behaviour, location and search history. Personalized IT services have become an omnipresent phenomenon (Tam & Ho, 2006) and recommender systems strive to narrow down the search for customers by offering personalized recommendations, presenting them with a manageable subset of products that are specifically relevant to their preferences (Dadoun et al., 2021). The data collected for personalized marketing allows marketers to provide customized information and for example, to match customer needs with products offered and remind customers of offers they would be interested in (Dawn, 2014). Digital personalization is exemplified by features like the "recommended for you" section, commonly found on popular websites like Amazon and Netflix, where tailored suggestions are provided based on individual user preferences and behaviour.

Social media service users grant service operators like Instagram and Facebook access to information about their interests, such as their liked pages or profiles, and events within the service. The data collected from internet users, such as the one mentioned above, can be utilized to create profiles of people and to offer them advertising content that aligns with their interests. According to Tam and Ho (2006), this type of personalization can offer competitive advantages to online retailers and aid customers with decision-making.

When technology establishes a personalized connection with users, it fosters a sense of attachment. Marketers can leverage this bond to unlock substantial opportunities for creating customer value. Various forms of personalization can be distinguished, such as interaction personalization, transaction outcome personalization, and continuity personalization (Dawn, 2014). These different personalizations have an impact on customer attributions related to the firm's performance, benevolence, and value provision. Customer attributions, in turn, influence relationship variables such as satisfaction, value, trust, and commitment. Research findings indicate that when consumers perceive personalization, it leads to increased brand engagement and attachment (Shanahan et al., 2019) and customized offers have value by potentially reducing the search costs of the consumers (Grewal et al., 2021). Previous studies confirm that unnecessary and untargeted advertising can cause negative perceptions towards the company.

It is crucial to acknowledge that the collection of consumer data and the implementation of personalization strategies may not only enhance customers' sense of vulnerability but also

potentially lead to lower adoption rates (Aguirre et al., 2015), thus concerns about privacy plays a significant role when it comes to data collection.

1.3. Consumer attitudes

The construct of attitude holds a central position in theories and research related to consumer behaviour (Ajzen, 2018). Gaining a comprehensive understanding of the concept of attitude and the process of attitude formation is crucial for researchers and managers who aim to modify consumers' evaluations of marketing objects in order to influence their preferences and behavioural tendencies. When businesses succeed in altering behaviour by changing the attitudes of consumers towards their product or service, it can result in beneficial consuming decisions. According to various theorists, although the formal definitions may differ, there is a consensus that attitude refers to the inclination to react to an object with varying degrees of positivity or negativity (Fishbein & Raven, 1962; Fazio, 1995). Scholars, such as Ajzen (2018) and Argyriou & Melewar (2011), posit that the evaluative response to the object is the central component of a person's attitude. Ajzen (2018) further explains that the expectancy-value model proposes that an individual's general attitude towards an object is influenced by their subjective evaluations of the characteristics associated with the product, along with the strength of the connections between these evaluations.

The theory of planned behaviour (TPB), developed by Ajzen (1991), has been widely studied and applied in various fields, including marketing. Ajzen's research on TPB has been particularly influential in understanding and measuring consumer behaviour and it is trying to explain and predict why an individual behaves in the way he does in a specific time and place. The TPB has been proven to be an efficient theory when measuring human behaviour.
This theory offers a conceptual framework that focuses on consumers' specific behaviours such as purchasing a product or searching for information. The theory suggests that these behaviours are determined by the consumer's intention to perform the behaviour, which is in turn influenced by their attitudes towards the behaviour, subjective norms, and perceived behavioural control. Attitudes, subjective norms, and perceived behavioural control are formed by behavioural, normative, and control beliefs respectively.

By changing these three variables, we can decrease or increase the probability that a person will commence the desired action or behaviour (Ajzen 1991). To conclude it into one sentence, the more significant the perceived behavioural control, pleasurable attitude, and a positive subjective norm, the bigger the person's individual intention to perform the wanted behaviour (Ajzen 1991). However, the TPB has received friendly approval, and there has been some criticism about the model. Some researchers are not accepting the model as an explanation of human social behaviour because the TPB is not taking the unconscious thoughts under consideration and how they could influence human behaviour (Sniehotta et al., 2014).

There are many different theories on how attitudes are formed. Argyriou & Melewar (2011) conclude from different studies two main points, firstly consumers use various processing strategies to develop attitudes, which include systematic-deliberative, associative-spontaneous, and heuristic approaches. Secondly, the strategy consumers use to process information and form attitudes depends on their goals and the context they are in and is influenced by the human perceptual system. This aligns with both functional and constructive perspectives on attitude formation.

In the realm of consumer attitudes, it is important for marketing researchers to acknowledge that there is no one-size-fits-all approach to understanding the formation of attitudes. According to Argyriou & Melewar (2011), attempting to reduce attitudes to a singular process oversimplifies the complex nature of the concept. It is crucial to recognize that there exist alternative processes that underlie attitude formation depending on the context (Ibid.).

Pande & Soodan (2015) suggest that consumer attitudes are composed of three main components: beliefs, feelings, and behavioural intention, which together represent the framework that affects the consumer response to an object. Digital consumer behaviour research is growing due to increased technology use (Stephen, 2016) and AI is expected to alter customer behaviour. In this thesis, we will be focusing on three components of attitudes introduced above; beliefs, feelings, and behavioural intention.

2. METHODOLOGY

This chapter gives information about the methodological part and thus how the study was conducted. The author describes the used research method, how the research was designed, how the data was collected, and how it was analysed later. This chapter includes research plan and design, data collection, and data analysis.

2.1. Research plan

The aim of this research is to determine the current attitude of Finnish consumers toward AI-generated personalized recommendations on social media platforms. The purpose is to determine the current attitude of Finnish consumers based on their feelings, common beliefs, and behaviour intention as well as, find out how Finnish consumers perceive personalized recommendations. Because the focus was to gain knowledge of the Finnish population, a quantitative method was chosen as a research method. By quantitative methods, one can collect more data and get a bigger sample size to represent the population better than qualitative methods can with a smaller sample size (Chrysochou & Polymeros, 2017).

To gain this knowledge, a survey was conducted using Google Forms as a design tool because of the author's previous experiences of it being convenient and easy to use for the ones participating in the survey as well as conducting the survey. A survey as a research method was selected as it is a fast way to get a relatively large amount of data without high-end costs (Chrysochou & Polymeros, 2017).

The process of designing the questionnaire began with the development of question topics, and then determining the questions and their sequence. Next, the author designed the layout and appearance of the questionnaire to align with the topic and facilitate clear and easy responses from respondents. After the questionnaire was completed, a pilot test was conducted, and feedback was gathered from the supervisor and pilot audience to refine the questions and layout of the online

questionnaire. Finally, the author ensured that the questionnaire was ready for distribution to the actual audience.

The survey consisted of an introduction to the topic of personalized marketing, followed by 16 questions (Appendix 1). The author wanted to keep the number of questions at a relatively small amount, to make sure everyone can finish the questionnaire, and get more responses. The questions were specifically designed by the author to address the research objectives and explore the specific aspects of interest in the study. Careful consideration was given to ensure the questions were relevant, comprehensive, and aligned with the research goals. The questionnaire had three specific sections, as consumer attitudes are composed of three main components: beliefs, feelings, and behavioural intention (Pande & Soodan, 2015).

The online questionnaire comprised 16 questions, with the first question gathering demographic information including the age of the respondent and the social media platforms they use to identify which platforms consumers frequent. The third question aimed to gauge respondents' familiarity with AI-generated personalized recommendations, using a 5-point scale ranging from 1 (not familiar at all) to 5 (very familiar). Previous research (e.g., Göb et al., 2007) has highlighted the effectiveness of evaluative semantic differential scales, such as like-dislike, good-bad, positive-negative, and favourable-unfavourable, in assessing consumer attitudes with high reliability (Ajzen, 2008).

The questions 4 “Have you received personalized recommendations in social media before?” and 5 “How often do you receive personalized recommendations when shopping online?” were designed to determine whether consumers had come across personalized recommendations and how often. Question 6 “If you answered yes to the questions above, could you specify what this recommendation was about and where did you come across it?” was one of two open-ended questions aimed at gathering more information about the nature and platform of the personalized recommendations encountered by consumers. Questions 7-12 aimed to investigate consumers' feelings towards personalized recommendations from different angles. For instance, respondents were asked to rate their perception of personalized AI-generated recommendations on a scale of 1 very positive to 5 very negative. Additionally, these questions were designed to provide insights into perspectives on data privacy and transparency in relation to personalized marketing. Question 13 “If you answered yes to the previous question, would you elaborate in short sentences why personal recommendations improve your shopping experience?” was the second open-ended

question aimed at gaining deeper insight into how personalized recommendations might enhance the shopping experience. Questions 14 and 15 were concerned with behavioural intention asking, for example, “Have you ever made a purchase based on a personalized recommendation from an online marketplace?” in addition, the last question examined whether completing the survey could alter consumers' perceptions of personalized offers and recommendations.

The survey was conducted in Finnish because the aim was to research the Finnish population and to keep the survey easy to understand for the respondents of all ages in Finland to be able to be part of the sample, not only the ones who can speak English.

The author opted for non-probability sampling as the appropriate method for selecting the sample group, as it was limited to individuals with internet and social media access. This method was chosen due to its cost-effective and efficient nature. Additionally, non-probability sampling allowed the author to target key respondents. Quota sampling was utilized to ensure representation of the target group, which encompassed Finnish individuals aged 15 years and above using social media.

2.2. Data collection and analysis

The author collected data from various social media platforms by sharing the online voluntary questionnaire link on Instagram, Facebook, LinkedIn, and WhatsApp. This approach allowed the author to gather responses from a diverse range of respondents across different age groups. The data collection period spanned seven days, starting on April 11th, 2023, and concluding on April 18th, 2023. During this time, a total of 147 responses were gathered, resulting in an appropriate sample size for qualitative research.

After the collection period, the data was gathered to be analysed in Excel using a descriptive statistical analysis method. The descriptive statistical analysis method was selected to help understand and provide a picture of the overall distribution and patterns of responses in the sample related to consumer perceptions and attitudes towards AI-generated personalized recommendations. For example, to help understand how Finnish consumers perceive personalized recommendations a frequency analysis was done to find out the overall distribution of responses. As the data was ordinal, frequency count is an appropriate descriptive statistic method to analyse

the data (Clow & James, 2013). Another descriptive data analysis method used in the research was the chi-square test to see if target populations' concerns about privacy and their engagement with personalized recommendations were dependent on one another, as well as the age of respondents to the positive or negative perception of these recommendations. To ensure the conditions for performing the chi-square test were met, several criteria were considered. Firstly, the data used in the analysis were categorical. Secondly, the observations were independent, meaning that each participant's response was unrelated to the responses of other participants. Measures of central tendency, such as the mean score for the questions with likert scales were also calculated to understand the level of agreement or disagreement among respondents (Boone Jr & Boone, 2012).

To be useable for the quantitative data analysis as well, the author coded the open-ended questions. To do so, a list of possible responses was generated, rules and guides created and a numerical code for each response was assigned to then use the data for frequency analysis. The pre-made themes were edited when going through the sample to be more appropriate, then the answers were grouped under these themes into categories and subcategories.

In total, the sample size of this study was 147 respondents. In this survey, the investigation of gender was not a primary focus or objective. Therefore, the survey did not aim to gather data specifically related to gender or explore its relationship with the research variables.

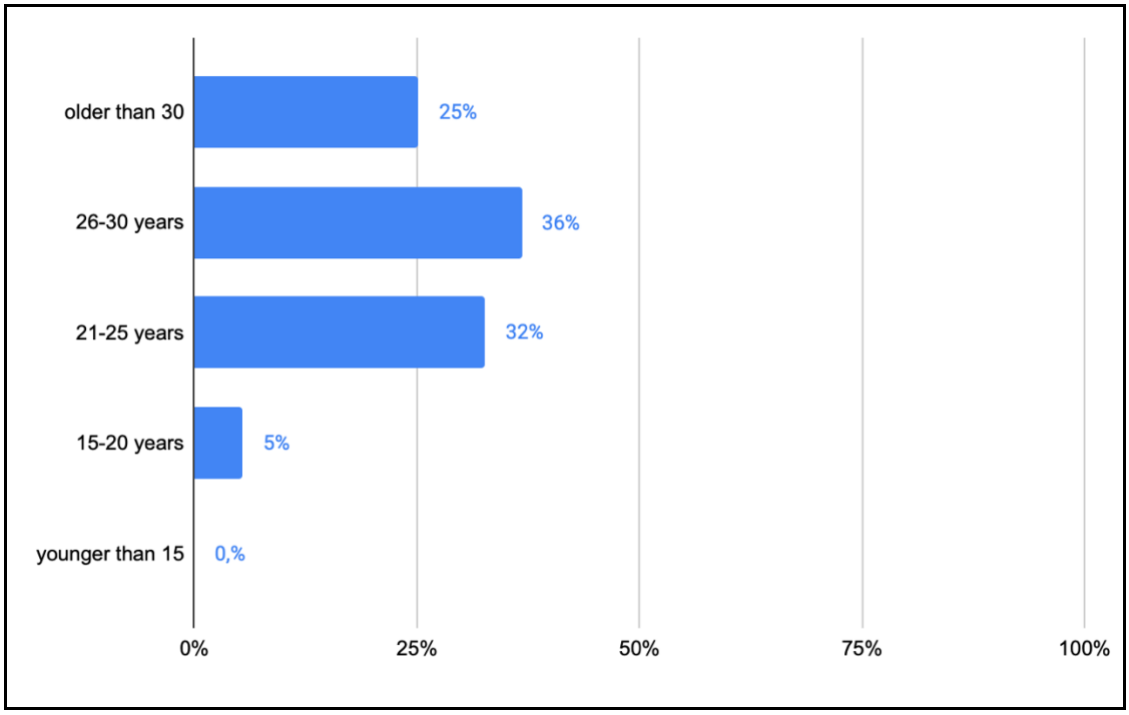

Figure 1. Age distribution of the respondents

Source: Composed by the author based on Appendix 2.

Figure 1 shows the age distribution of the respondents. The majority of the respondents were aged 21-30 years old, and only a small percentage, 5.4%, were aged 15-20 years old.

3. EMPIRICAL ANALYSIS

This part of the thesis presents the findings, analysis, and discussion of the study. It is started with a presentation of the findings which is then followed by an analysis and discussion of the findings in detail and based on that give recommendations.

3.1. Research findings and analysis

In the online questionnaire, consumers' attitudes toward AI-generated personal recommendations were researched. The questions were formed to give a comprehensive picture of consumers and their attitudes.

Figure 2 presents the most used social media by the respondents.

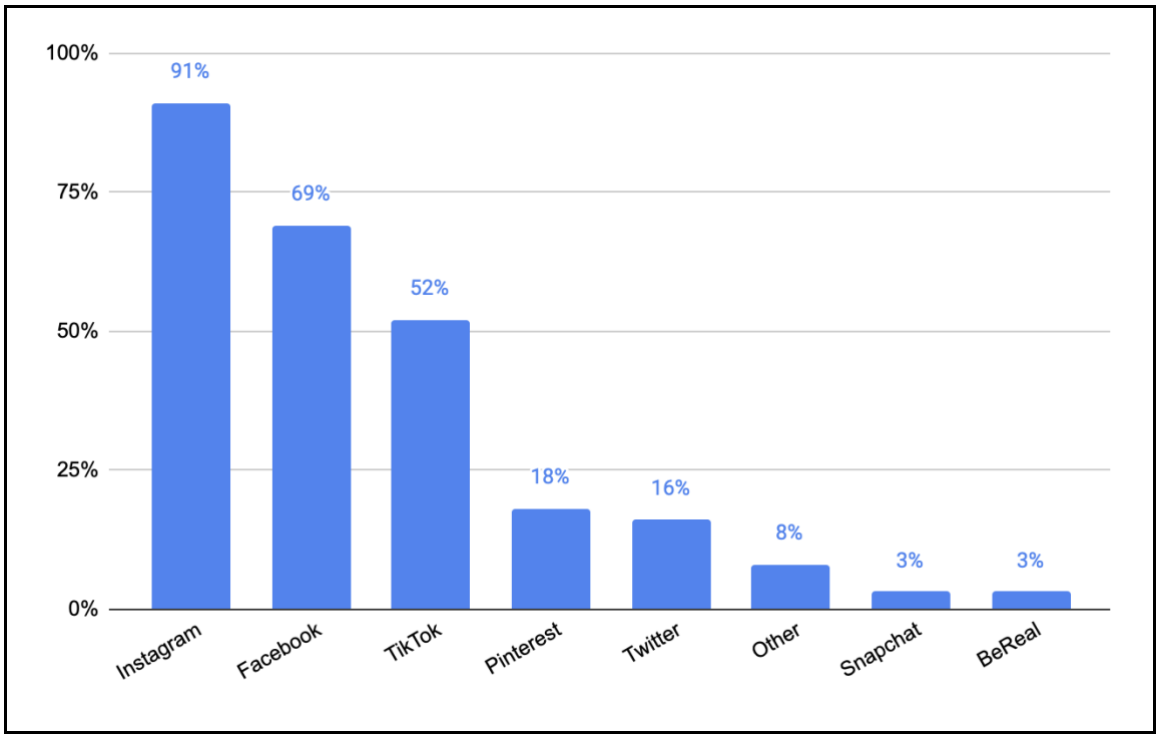

Figure 2. Social medias used by the respondents in their daily life
Source: Composed by the author based on Appendix 2.

Instagram is the most popular social media platform among the respondents, with 91% using it. Facebook and TikTok were also used by a significant proportion of respondents, with 69% and 52% respectively. Twitter, Pinterest, and Snapchat were less commonly used, with less than 20% of respondents using them.

In the third question, the respondents were asked how familiar they are with AI-generated personalized recommendations. The results are shown in Figure 3.

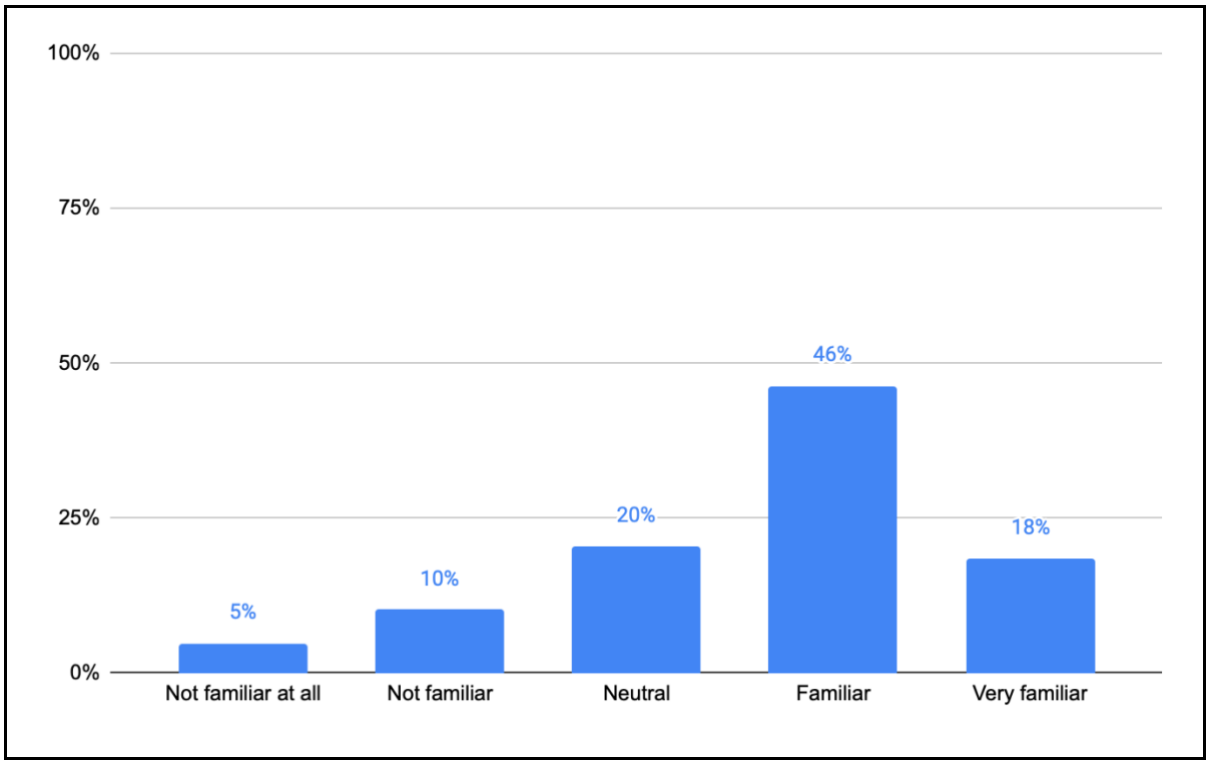

Figure 3. How familiar the respondents are with AI-generated personalized recommendations
Source: Composed by the author based on Appendix 2.

Less than half of the respondents (46%) were familiar with AI personalized recommendations, while a significant portion (18%) were very familiar with them. Additionally, 20% of the respondents felt neutral about their familiarity with AI personalized recommendations, while 10% were not familiar with them and 5% were not familiar at all.

The fourth question was about understanding how many of the respondents have received personalized recommendations on their social media. The results show (Figure 4) that 97% have

received personalized recommendations and only 3% answered that they have not received any. Since almost all the respondents have received personalized recommendations, it suggests that personalized marketing strategies are widely implemented across these social media platforms. If the respondents answered yes to the latter question, they were asked to share in the fifth question how often the respondents have received personalized recommendations on social media, and the results are presented in Figure 5.

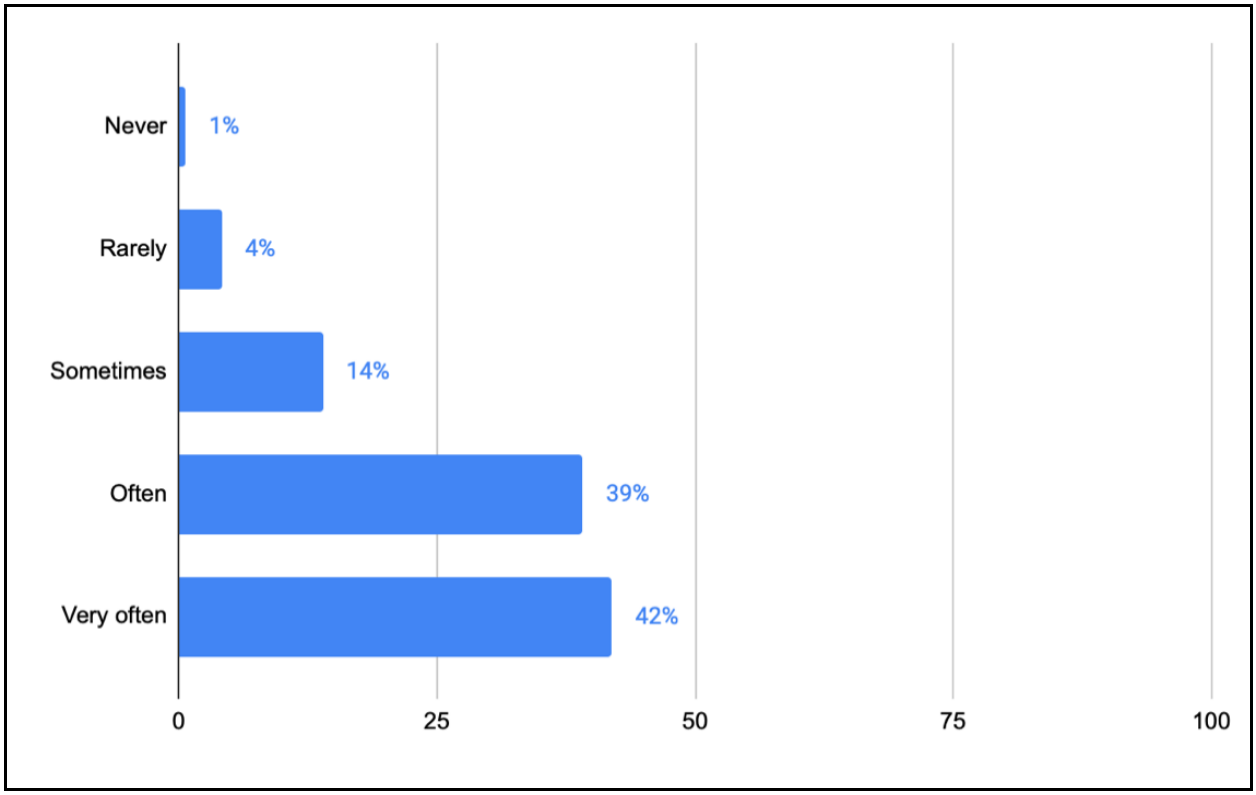

Figure 5. How often personalized recommendations occur in respondent's social media
Source: Composed by the author based on Appendix 2.

143 respondents answered the fifth question. A large majority of the respondents (81%) feel that they receive personalized recommendations either very often or often, while the smaller percentages of respondents feel that they receive personalized recommendations only sometimes, rarely, or never.

In the sixth question, the respondents had a chance to elaborate more on what kind of personalized recommendations and on what platforms they received. 100 answers were received from the 147 total respondents. The figure below (Figure 6) shows the main themes that were gathered from the responses; How, Where and What.

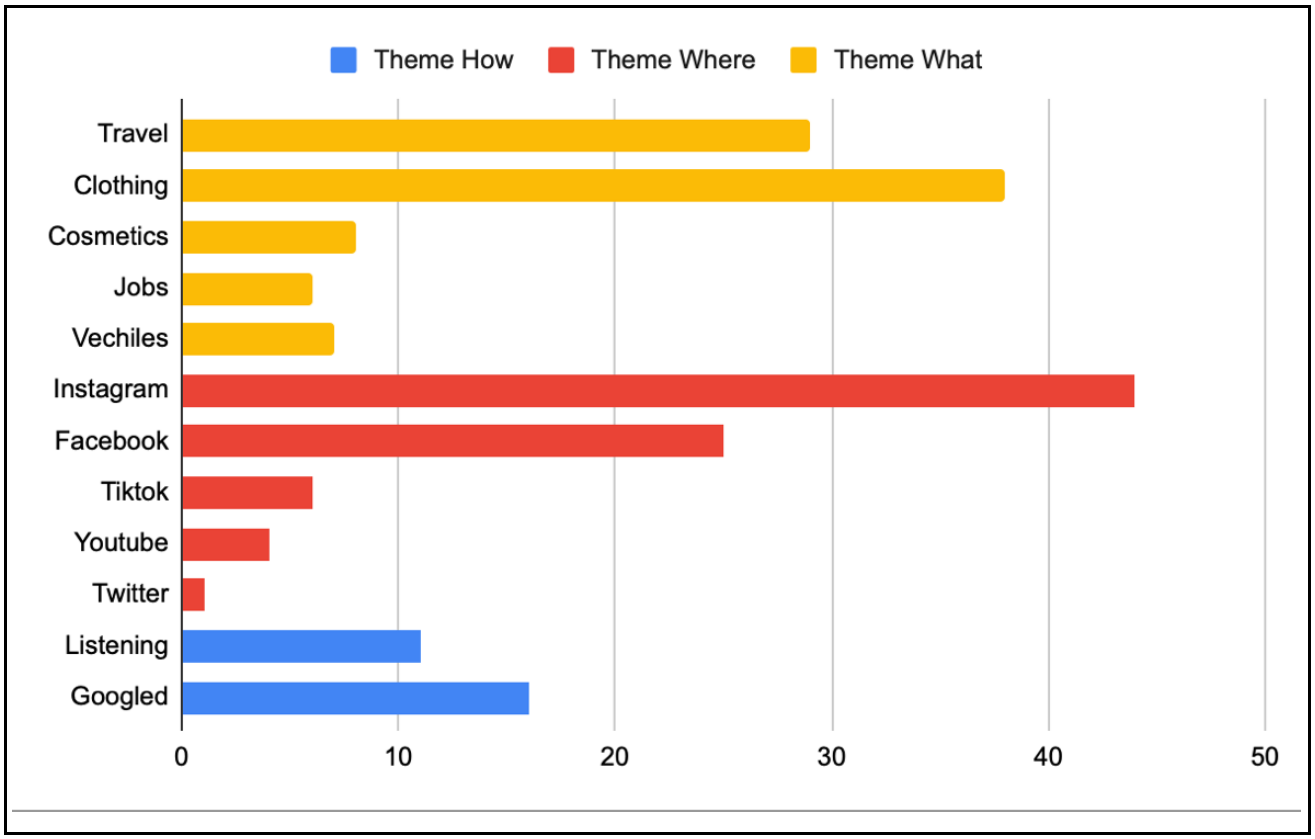

Figure 6. How, where, and what personalized recommendations do respondents receive
Source: Composed by the author based on Appendix 2.

Instagram (44%) and Facebook (25%) are the most common platforms where respondents receive personalized recommendations followed by TikTok. Clothing and travel-related content are the most common types of recommendations. Additionally, a notable number of respondents mentioned that they believed their phone was listening to their conversations and surroundings or using their Google search history to generate personalized recommendations. Some answers indicating this were “Every now and then there are ads on Facebook about things I've discussed or googled” and “According to Google searches, there will be ads on Instagram or depending on which links have been clicked on Instagram. Also, sometimes I notice that if I listen to e.g. a certain podcast a lot on the speaker (i.e. the phone can also hear) then Instagram especially offers ads as well as "recommended for you" content (e.g. profiles to follow)”.

Figure 7 shows how the respondents perceive personalized AI-generated recommendations.

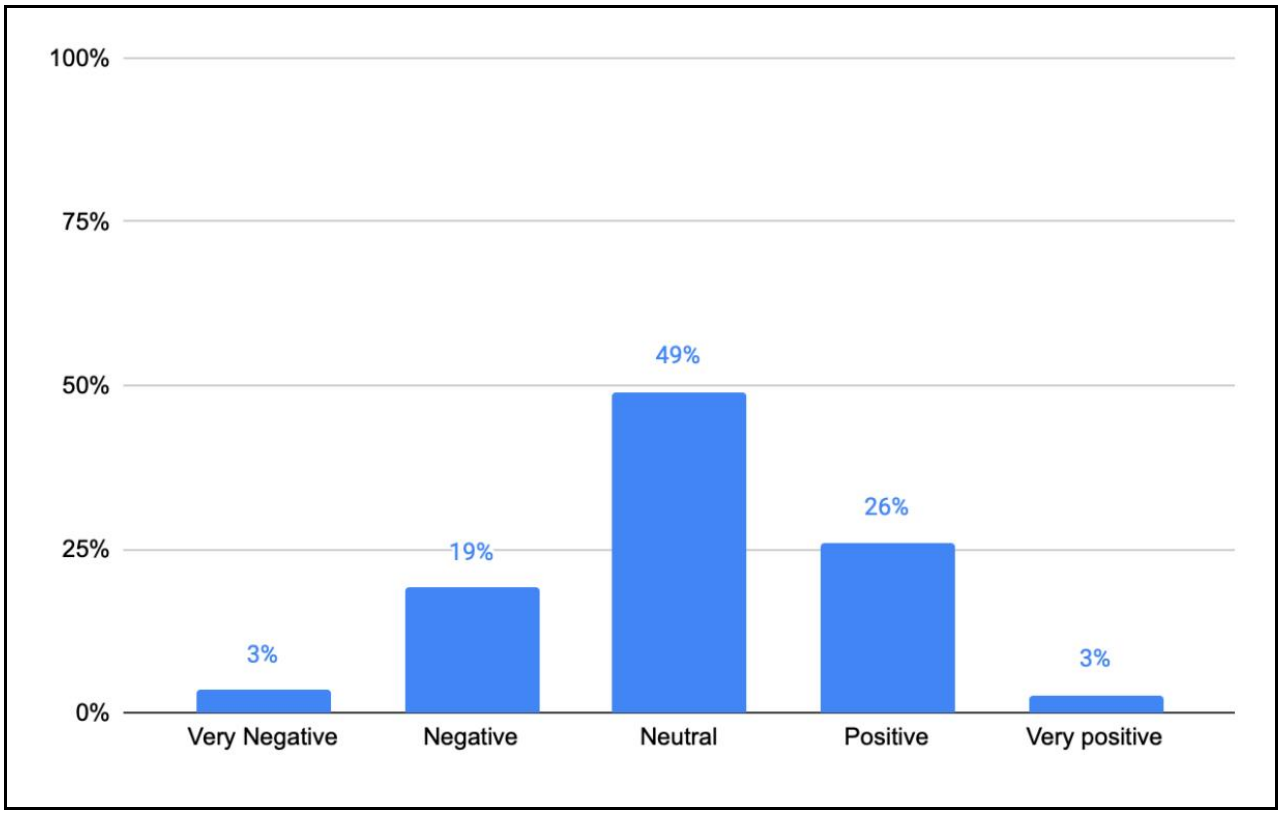

Figure 7. How respondents perceive personalized AI-generated recommendations
Source: Composed by the author based on Appendix 2.

49% of the respondents felt neutral about personalized recommendations made with AI, 26% felt positive, 19% negative and 3% very positive and very negative. To undestand if age and the way respondents perceive has a relationship, a chi-square test was conducteed. The p-value was 0.126, which means the relationship between the age of respondents and their perception of personalized advertising is not statistically significant at the conventional significance level ($p < 0.05$). Analysis failed to reject the null hypothesis, which states that there is no association between age and perception of personalized advertising.

Figure 8 below presents how accurately the personalized recommendations are perceived.

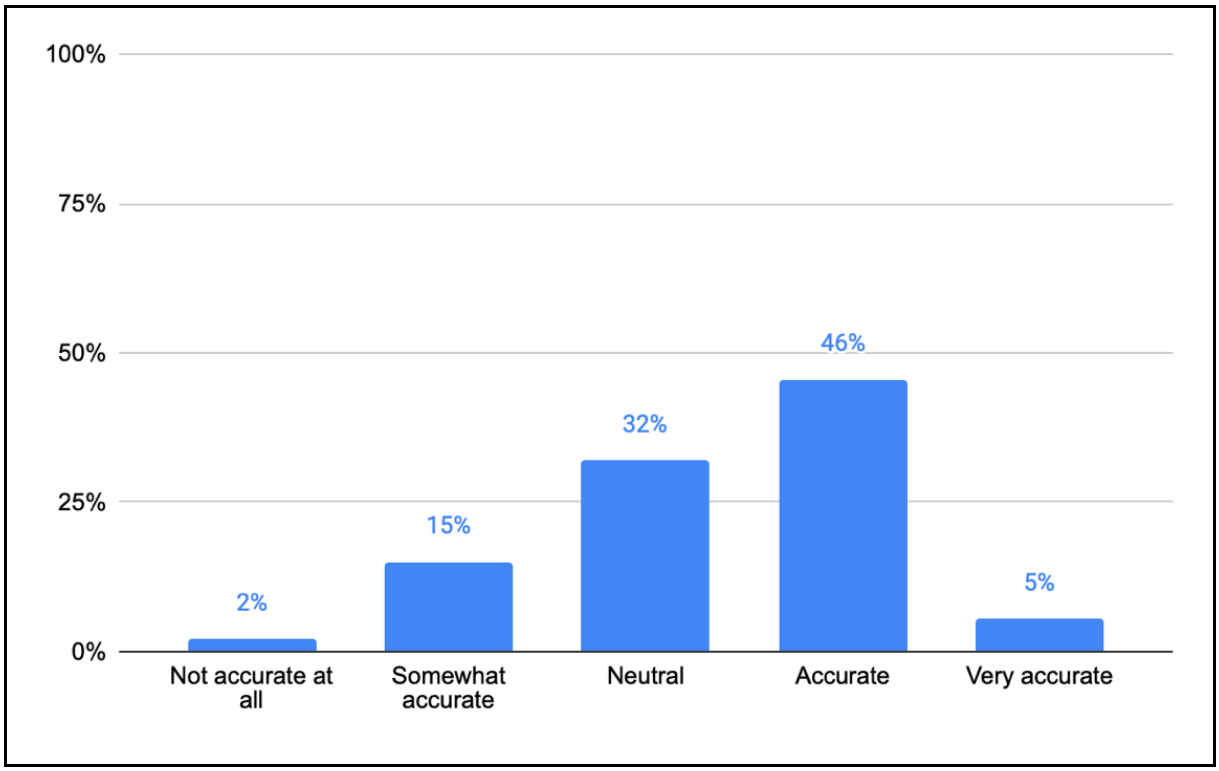

Figure 8. How accurate respondents perceive personalized AI-generated recommendations
Source: Composed by the author based on Appendix 2.

Most of the respondents felt that the personalized recommendations they received were at least somewhat accurate. Specifically, 46% felt that they were accurate, 15% felt that they were somewhat accurate, and only 2% felt that they were not accurate at all. Only a small percentage, 5%, felt that the recommendations were very accurate, while 32% felt neutral about the accuracy of the recommendations. After this, the respondents were asked about their concerns about the use of AI in personalized recommendations as well as their concerns about privacy and data security in relation to AI-generated personalized recommendations. The following figure (Figure 9) presents the results.

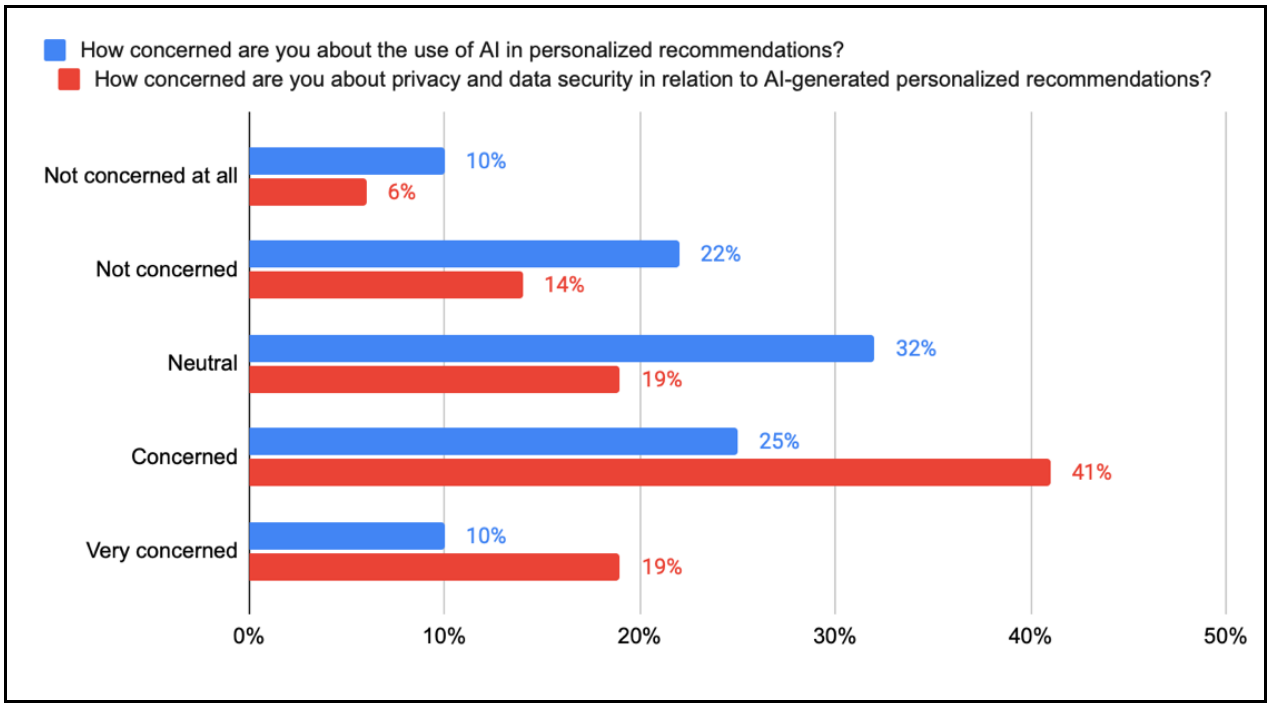

Figure 9. The concern of the use of AI and privacy and data security
Source: Composed by the author based on Appendix 2.

A significant proportion of the respondents (41%) were concerned about their privacy regarding personalized recommendations. 19% were very concerned and neutral, 14% were not concerned, and 6% were not at all concerned. It is also worth noting that a considerable number of respondents (32%) had neutral feelings toward the use of AI in personalized recommendations. 25% were concerned, 22% not concerned, and 10% very concerned and not concerned at all.

The chi-square test was conducted to examine the relationship between two variables: the age of respondents and their level of concern about privacy and data security. The obtained p-value of 0.945 indicates that there is no statistically significant relationship between these variables. The null hypothesis for this chi-square test would state that there is no relationship between the age of respondents and their level of concern about privacy and data security. Since the p-value is greater than the predetermined significance level ($p < 0.05$), the analysis failed to reject the null hypothesis.

The question was followed by asking the respondents how important they felt transparency was in understanding how AI-generated personalized recommendations are generated. In Figure 10 the results show that over half of the respondents felt like transparency was very important.

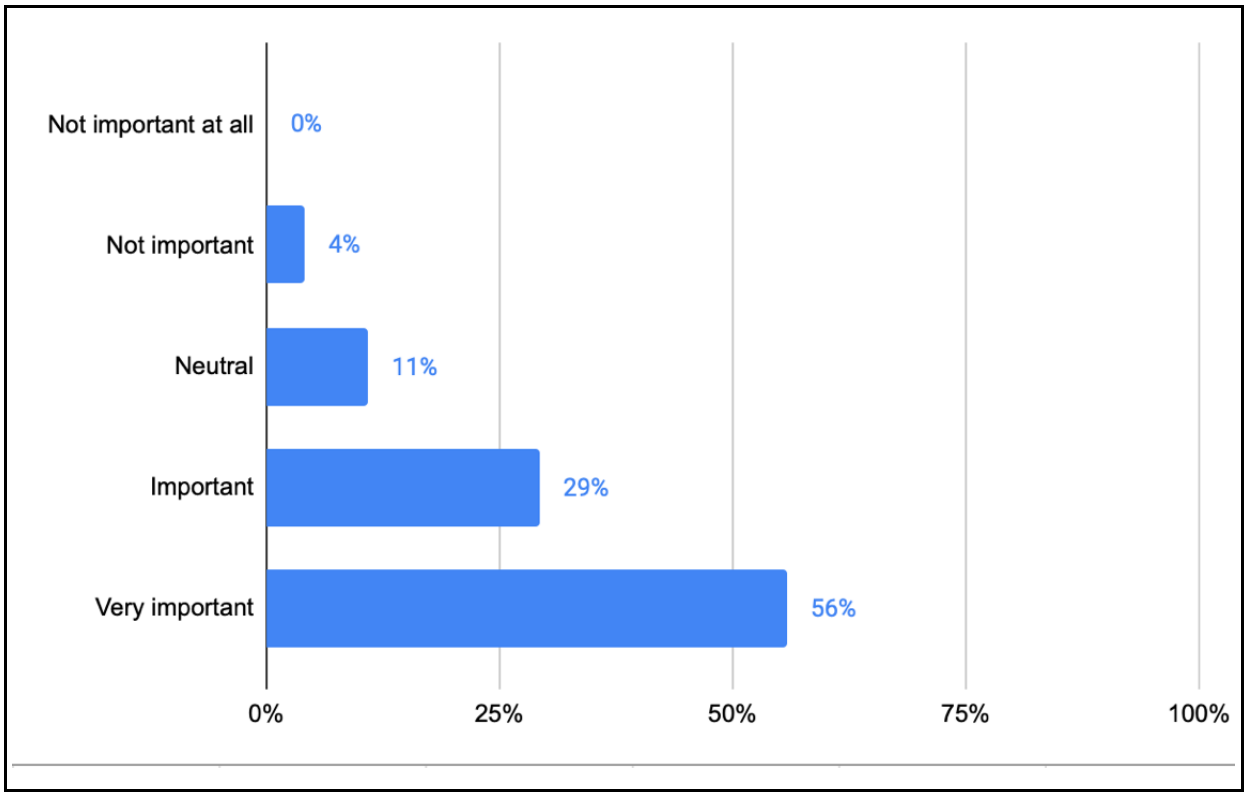

Figure 10. The importance of transparency in AI-generated personalized recommendations
Source: Composed by the author based on Appendix 2.

56% felt like transparency was very important, 29% felt like it was important, 11% felt neutral and 4% did not feel like transparency was important. Nobody from the respondents felt like transparency was not important at all.

Question number 12 asked if AI-generated personalized recommendations enhance the shopping experience of the respondents. People's opinion on the topic was not clearly one or the other. 55% felt like their shopping experience is not enhanced by personalized AI recommendations and 45% felt like they were enhanced. Next, the respondents were asked to elaborate in an open-ended question on how personal recommendations improve their shopping experience. 70 respondents gave an answer to this question and the results are shown below (Figure 11).

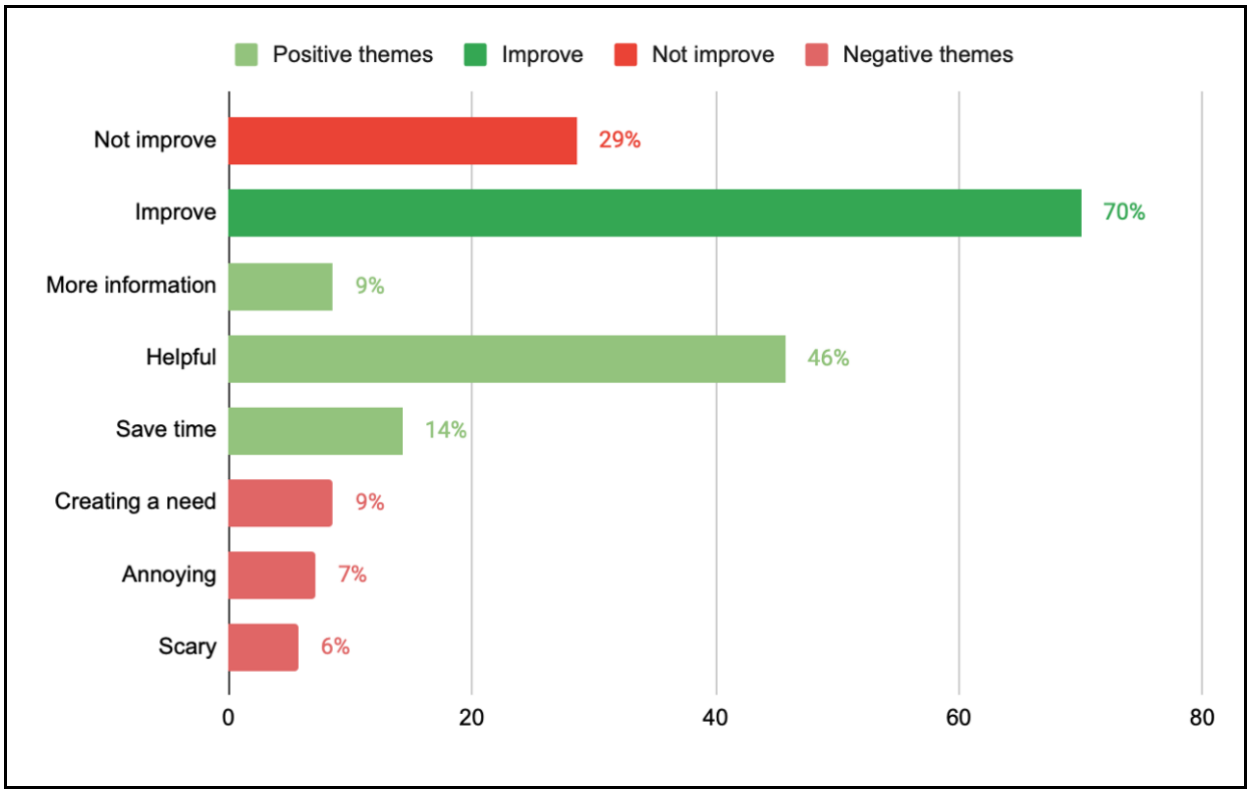

Figure 11. How personal recommendations improve/do not improve the shopping experience
Source: Composed by the author based on Appendix 2.

70% of the responses expressed that personalized recommendations contribute to an enhanced shopping experience. Common themes emerged from their responses, highlighting the perceived benefits of personalized recommendations, such as their helpfulness, time-saving nature, and provision of additional or novel product information. For instance, one respondent conveyed a positive attitude towards personalized recommendations by stating, "With the help of artificial intelligence, I can find goods/services that I wouldn't necessarily be able to find by searching if I could even manage to search. The recommendations are based on my habits and are therefore usually very accurate. This is very useful, as long as the companies are open about this, etc" Another respondent remarked, " Artificial intelligence probably understands my needs better than I do, and through this makes it easier to find the right product".

It is worth noting that the survey explicitly asked respondents who answered affirmatively to elaborate on how personalized recommendations enhance their shopping experience. However, a portion of the responses (29%) conveyed negative sentiments, indicating that personalized recommendations do not improve the shopping experience. The survey revealed three prevalent negative themes raised by the respondents regarding personalized recommendations. Firstly,

number of participants expressed concerns about personalized recommendations creating a perceived need or fostering impulsive buying behaviour. Secondly, respondents frequently described personalized recommendations as annoying or intrusive. Lastly, a significant portion of the respondents indicated feeling scared or uneasy due to privacy concerns associated with personalized recommendations. One respondent shared, "They do not. Often recommendation only comes when the product has been purchased or when I have already made a decision one way or the other, so the recommendation is no longer relevant. A personalized recommendation also easily creates a negative reaction towards the product/service when I notice that I am so-called 'spied on'. I often block these ads and I am even more determined not to buy the product".

Another one mentioned privacy issues "Along with data security, the promotion of data protection is very important in personalized advertising. As the number of third-party cookies decreases, new technologies are introduced to replace them before there is time to react to the changes at the regulatory level, so companies must ensure the ethics of data processing. The processing of personal data must be transparent, and the user must be informed and enabled to refuse processing. In particular, access to data by third parties must be restricted."

These contrasting perspectives demonstrate the divergence of opinions regarding the impact of personalized recommendations on the shopping experience, and the recommendations themselves. Figure 12 below presents how often respondents click on the personalized recommendations they see when they are on social media.

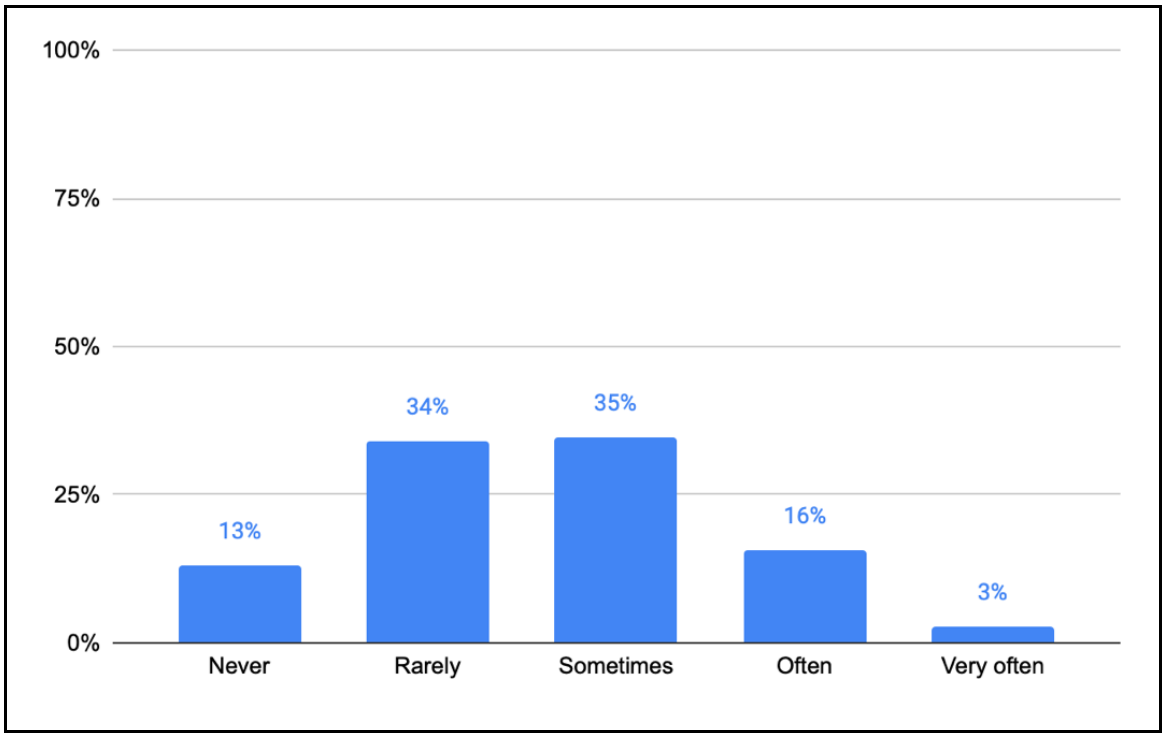

Figure 12. How often do the respondents click on personalized recommendations
Source: Composed by the author based on Appendix 2.

35% clicked sometimes, 34% rarely, 16% often, 13 % never and only 3% clicked on the recommendations very often. The question was followed by asking if the respondents have ever made a purchase based on a personalized recommendation on social media.

55% have made a purchase based on personalized recommendations they have seen on their social media and 45% responded that they have not made a purchase based on these recommendations. Findings from the chi-square test indicate a statistically significant relationship between the variables of making a purchase based on personalized recommendations (Yes/No) and the level of concern about privacy and data security in relation to AI-generated personalized recommendations (on a scale of 1 to 5). The null hypothesis for this chi-square test states that there is no relationship between consumers' purchase behaviour and their level of concern about privacy and data security in relation to AI-generated personalized recommendations. With a p-value of 0.0026, less than the predetermined significance level ($p < 0.05$), we reject the null hypothesis in favour of the alternative hypothesis, which suggests that there is indeed a relationship between these variables. It can be concluded that there is an association between these two variables.

The data suggests that consumers' level of concern about privacy and data security in relation to AI-generated personalized recommendations is related to their likelihood of making a purchase

based on such recommendations. This finding implies that consumers who express higher levels of concern about privacy and data security are less likely to make a purchase based on personalized recommendations. Conversely, consumers who have lower levels of concern are more inclined to make a purchase based on personalized recommendations.

The last question of the survey was to find out if respondents will be more aware of these personalized recommendations after they have done the survey.

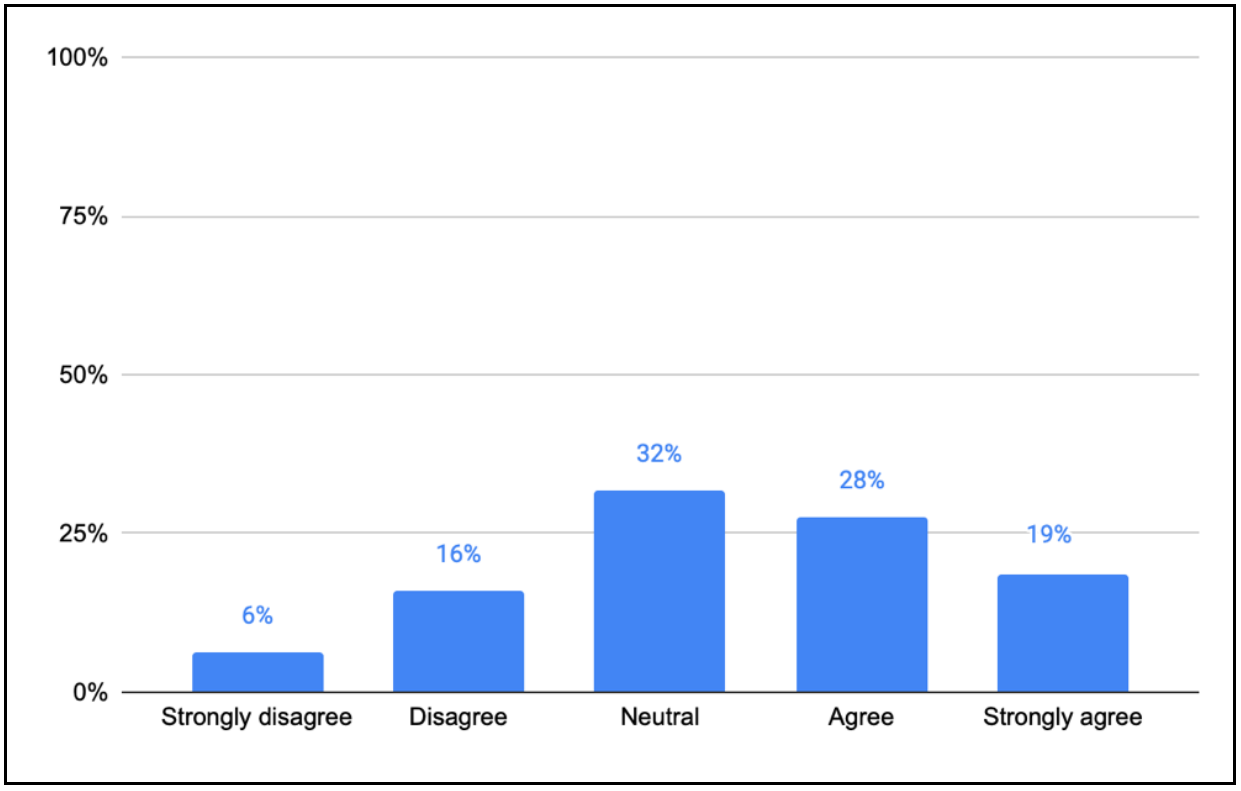

Figure 13. More aware of personalized recommendations after the survey
Source: Composed by the author based on Appendix 2.

The results indicate a range of attitudes toward whether respondents will be more aware of personalized recommendations after completing the survey. The majority of respondents either agreed (28%) or strongly agreed (19%) that they would be more aware, while 16% disagreed and 6% strongly disagreed. 32% of the respondents were neutral in their responses. The results suggest that the survey may have had some impact on respondents' awareness of personalized recommendations, but a significant portion of respondents did not feel that their awareness would change.

3.2. Discussion and recommendations

The primary objective of this study was to investigate and gain a deeper understanding of how Finnish consumers perceive AI-generated personalized recommendations, aiming to create a comprehensive picture of their attitudes towards such recommendations. By addressing the research questions outlined at the beginning, this study aims to shed light on various aspects of Finnish consumers' attitudes, providing valuable insights into the role and impact of AI-generated personalized recommendations in the marketing landscape. The findings and analysis presented herein contribute to the existing body of knowledge, offering a nuanced perspective on Finnish consumers' attitudes toward AI-generated personalized recommendations and their implications for marketing strategies.

3.2.1. Personalized recommendations perceived by Finnish consumers

Instagram (91%) and Facebook (69%) are the most popular social media platforms among the survey respondents. Instagram was also the most popular platform for receiving personalized recommendations, followed by Facebook and TikTok. This suggests that businesses may want to focus on these platforms to effectively reach their target audience.

Many respondents (64%) reported receiving personalized recommendations often or very often, indicating that this type of marketing is prevalent in the current digital landscape. The widespread reception of personalized recommendations among the survey respondents suggests that personalized marketing strategies are prevalent and effective on these social media platforms. Businesses should continue to invest in and optimize their personalized marketing efforts to leverage the power of personalization and enhance customer engagement.

Overall, the data suggests a range of perceptions among the respondents, with a significant number being neutral, a notable portion having positive attitudes, and a smaller percentage expressing negative views toward personalized AI-generated recommendations. Age did not appear to have a significant effect on how respondents perceived personalized advertising.

A large majority of the respondents (81%) feel that they receive personalized recommendations either very often or often. This suggests that personalized marketing through AI-generated recommendations is a common experience for consumers. Constant exposure can enhance consumer engagement by capturing their attention and providing relevant information, increasing the likelihood of interaction with the recommendations. Additionally, the smaller percentages of

respondents who feel that they receive personalized recommendations only sometimes, rarely, or never, may provide insights into potential areas for improvement in the implementation of personalized marketing strategies, as it suggests that personalized marketing strategies may not be reaching these consumers effectively.

Consumers felt like the recommendations improve their shopping experience and that they are accurate, and overall, the attitudes were neutral/positive towards the recommendations themselves. A study by De Keyzer et al. (2015) highlighted that when consumers perceive personalization in a Facebook ad, it positively affects their responses by enhancing the perceived relevance of the ad. The findings of De Keyzer et al. (2015) are consistent with the results of our study where most respondents found value in the recommendations they received, supporting the effectiveness of AI-generated personalized recommendation systems in meeting their preferences and needs. This indicates that consumers are generally receptive to personalized recommendations and find them useful. However, there is still a sizeable minority who have negative or very negative attitudes towards personalized recommendations made with AI, suggesting that there may be some room for improvement in the way these recommendations are delivered or presented to these consumers.

Despite a relatively lower frequency of clicking on personalized recommendations, a noteworthy finding of this study is that a substantial proportion of respondents (55%) reported making purchases based on the personalized recommendations they received. This indicates the persuasive impact of personalized recommendations on consumer behaviour. Supporting this observation, a study by de Pechpeyrou (2009) provides evidence that personalized recommendations not only attract more clicks but also result in a higher number of items being added to the shopping cart compared to random recommendations. It could be concluded that personalized recommendations have a strong influence on consumer behaviour even if the consumers do not engage with them frequently. Additionally, it is interesting to note that 45% of respondents have not made a purchase based on personalized recommendations, indicating that there is still room for improvement in the accuracy and effectiveness of these recommendations.

3.2.2. Positive and negative attitudes

The findings of this study further confirm the favourable aspects associated with AI-generated personalized recommendations, as previously identified in the literature. Specifically, three key benefits have been consistently highlighted: firstly, the reduction in time and effort required during the decision-making process; secondly, the facilitation of finding products that better align with

consumers' preferences; and thirdly, the enjoyment derived from the discovery of new items (de Pechpeyrou, 2009).

In accordance with these prior research findings, the participants in this study also acknowledged and recognized these positive elements of AI-generated personalized recommendations. It is noteworthy that they explicitly acknowledged the time-saving nature of these recommendations, their provision of valuable information, and the presentation of new products that align with their interests, ultimately making the purchasing process more efficient.
Moreover, it is important to note that the literature has emphasized the impact of product search time on shopping effectiveness (Nagy & Hajdu, 2021). This perspective underscores the value of AI-generated personalized recommendations in enhancing the efficiency and effectiveness of the shopping process, aligning with the benefits previously discussed.

In addition to the positive feedback, it is worth noting that some participants expressed feelings of annoyance or perceived no improvement in their shopping experience with personalized recommendations. The study also shed light on these negative aspects associated with personalized recommendations, namely, the potential creation of perceived needs among consumers, which may result in excessive spending or impulsive purchases of unnecessary items. This finding aligns with the research conducted by Chen et al. (2022), who argued that negative consumer perceptions of AI marketing can stem from its influence on increased expenditure beyond their intended budget.

This can be seen as a potential downside of personalized marketing strategies, as it could harm the consumer's financial well-being and result in dissatisfaction with the brand or company. However, from the marketer's and company's perspective, personalized recommendations are used to drive more sales and revenue, which is a key goal in any marketing strategy. It is important for companies to strike a balance between meeting their business objectives and ensuring that personalized recommendations are not causing harm or exploiting consumer vulnerabilities. Companies can also consider implementing ethical guidelines for personalized marketing strategies to ensure that they are using these techniques responsibly and with the best interest of consumers in mind.

3.2.3. Privacy and importance of trust

The success of personalized recommendations depends on the willingness of consumers to trust and use them (Aguirre et al., 2015). The fact that some respondents felt like the recommendations

came from their phone listening to their conversations and surroundings raises questions about privacy and data protection, an ongoing concern in AI and personalized marketing.

It was notable that the concern of privacy and data security was high among the consumers, as well as their concern about their phones listening to their conversations and tracking Google searches. These concerns suggest that businesses and marketers need to take steps to address these issues and reassure consumers about the security and privacy of their data. Findings from this study imply that consumers who express higher levels of concern about privacy and data security are less likely to make a purchase based on personalized recommendations. Conversely, consumers who have lower levels of concern are more inclined to make a purchase based on personalized recommendations. Findings suggested that age does not play a significant role in influencing the level of concern about privacy and data security among respondents regarding AI-generated personalized recommendations. Regardless of their age, individuals express similar levels of concern or lack thereof.

It is important to note that other factors may contribute to the level of concern about privacy and data security, such as individual attitudes, prior experiences, and knowledge about AI-generated personalized recommendations. Further research is needed to explore these factors and their potential impact on privacy concerns in relation to personalized marketing strategies.

These findings highlight the importance of addressing privacy and data security concerns in the implementation of AI-generated personalized recommendations. Businesses should consider implementing measures to address consumer concerns and ensure transparency and security in their personalized marketing strategies to enhance consumer trust and increase the effectiveness of personalized recommendations.

Failure to do so could lead to a loss of trust and a decline in the effectiveness of personalized marketing strategies. Previous research literature has widely acknowledged the adverse impact of privacy concerns on attitudes toward advertising (Nagy & Hajdú, 2021; Suontama, 2022). Privacy concerns and the impact they have on social media engagement have been extensively examined. Research has shown that privacy protection behaviours and social media trust play significant roles in this context. When individuals do not actively engage in privacy protection behaviours, their privacy concerns tend to have a negative effect on their level of social media engagement (Bright et al., 2021).

Transparency of companies was very much valued with over half of the respondents giving it the highest score (58%) of ‘Very important’. This aligns with previous research that confirmed one of the key factors influencing consumers' behavioural intentions was trust (Nagy & Hajdú, 2021; Shin, 2020). Worry about data security and privacy was shown in the results as feelings like ‘scared’ and ‘worried’ were mentioned in the responses to open-ended questions. Victor et al. (2019) have studied the topic and discovered that concerns about personal data can reduce purchase intention.

A significant portion of respondents perceives transparency as crucial or at least important in gaining a better understanding of AI-generated personalized recommendations. This suggests a demand for transparency and a desire to have insights into how these recommendations are generated, potentially to build trust, ensure ethical practices, and allow users to make informed decisions. Also, a study confirmed that (Aguirre, et al., 2015) when firms practice overt information collection strategies, it leads to greater click-through intentions – thus greater business results.

CONCLUSION

In today's business landscape, creating a personalized customer journey has become increasingly crucial to cater to customers' evolving needs and expectations. In these efforts, artificial intelligence is a very effective tool (Nagy & Hajdú, 2021). The findings of this study reveal a mixed perspective, with some consumers appreciating the benefits of personalization while others express concerns about privacy and intrusiveness.

This study aimed to find answers to the following research questions:

- What are Finnish consumers' attitudes and awareness levels regarding AI-generated personalized recommendations?
- What is the level of perception among Finnish consumers regarding personalized AI-generated recommendations?
- Is there a significant relationship between target populations' concerns about privacy and their engagement with these recommendations?

The findings of this study provide valuable insights into the overall attitudes of Finnish consumers' and awareness levels regarding AI-generated personalized recommendations. It explores various dimensions, including acceptance, satisfaction, trust, and willingness to engage with such recommendations. By capturing a range of perspectives, the study reflects the diverse attitudes held by Finnish consumers regarding AI-generated personalized recommendations and a moderate level of awareness. Many respondents showed a favourable attitude towards personalized recommendations, recognizing their benefits in terms of convenience, relevance, and improved shopping experiences.

Secondly, the research findings demonstrate that the target population possesses a solid understanding of AI-generated personalized marketing.

Lastly, findings suggest that consumers' concerns about privacy and data security may influence their decision to make a purchase based on personalized recommendations and that there is indeed a relationship between these variables. Businesses should consider these concerns and implement measures to address privacy and data security issues in order to enhance consumer trust and encourage engagement with personalized recommendations.

The empirical evidence from this thesis confirms the value consumers place on personalized recommendations, as they effectively cater to their preferences and needs, resulting in positive outcomes. However, it is noteworthy that a significant minority of participants expressed negative attitudes toward AI-generated personalized recommendations. This indicates the need for further improvements in the delivery and presentation of these recommendations to enhance consumer satisfaction and optimize their effectiveness. The mixed perspectives observed in this study underline the complexity and diversity of consumer attitudes in this domain, emphasizing the necessity for a nuanced approach when implementing personalized marketing strategies.

Furthermore, the findings highlight the imperative for businesses and marketers to prioritize privacy, data security, and transparency in their personalized marketing practices. Based on the results, it is recommended that addressing consumers' concerns through clear information about data collection and recommendation generation processes can foster trust, increase consumer satisfaction, and mitigate the negative impact of privacy concerns on consumer behaviour.

The research conducted for this thesis underscores the significance of ongoing research and development in the field of personalized recommendations. It is essential to explore not only the positive aspects but also the potential drawbacks associated with such recommendations. This comprehensive understanding will contribute to enhancing the consumer experience and ensuring the adoption of ethical marketing practices.

In conclusion, this study emphasizes the need for continuous advancement and refinement in personalized recommendation systems, while simultaneously underscoring the significance of privacy protection, data security, and transparent practices. By integrating these aspects, businesses and marketers can optimize the consumer experience, promote ethical conduct, and achieve greater effectiveness in their personalized marketing efforts.

The limitations of the study include a small sample size that may limit the generalizability of the findings to the larger population. The attitudes and behaviours of the respondents may not be representative of the attitudes and behaviours of the entire Finnish population.
One further limitation of this thesis is that its scope is extensive and would have benefited from being more narrowly defined, like focusing only on the feelings towards personalized recommendations in one social media platform or one industry such as airlines or clothing retail. The selection of the topic occurred some time ago, and once the extent of the subject became apparent, it was no longer feasible to modify it. Lastly, the limited survey design where questions may not fully capture the complexity of attitudes towards AI-generated recommendations. It is difficult to accurately capture and measure all the different factors that influence attitudes towards AI-generated personalized recommendations with just a few questions. Therefore, you should be transparent about the limitations of your study and acknowledge that there may be other important demographic factors that were not measured in your survey.

These limitations give direction for future research. In the future, to understand Finnish consumers' attitudes more accurately, a larger, and even more diverse sample size should be used to get more general findings to present the population as a whole. Also using mixed methods in future research should be done, to combine quantitative data with qualitative, as interviews would give more insights and a deeper understanding of these attitudes. As consumption and data privacy is a big part of the topic, ethical considerations should be focused more on future research, for companies to gain a better understanding of how to balance benefits with privacy concerns. Future research could build upon this study as a foundation to further explore and gain a deeper understanding of the trade-off between privacy and accuracy that consumers are willing to accept.

Practical recommendations to take draw from this study are firstly, that companies should focus on being more transparent about how they generate the personalized recommendations offered to consumers and how their data is being collected. Sharing this information could reduce consumers' concerns about privacy and data security and build a stronger and more trustworthy bond between the company and the consumer. Companies could educate consumers about the benefits of personalized recommendations and how they work, to help with misconceptions. Secondly, companies should be encouraged to continue innovating in this area to provide consumers with more valuable and engaging recommendations. Continued investment in research and development of AI technologies will contribute to improving the accuracy and relevance of personalized recommendations. By staying at the forefront of technological advancements,

companies can ensure their recommendations remain up-to-date and resonate with consumers, ultimately enhancing their overall shopping experience.

Overall, this study contributes to the understanding of consumer perceptions and attitudes toward AI-generated personalized recommendations in the Finnish market, providing valuable insights for businesses and marketers to enhance their personalized marketing strategies.

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APPENDICES

Appendix 1. Online questionnaire

Section	Question	Scale items	Scale type
1	1. How old are you?	A1 younger than 15 A2 15-20 years old A3 21-25 years old A4 25-30 years old A5 older than 30	Nominal scale
1	2. What social media do you use in your day to day life?	A1 Instagram A2 Facebook A3 TikTok A4Twitter A5 Pinterest A6 Other_____	Nominal scale
1	3. How familiar are you with AI-generated personalized recommendations?	- Not familiar at all - Not familiar - Neutral - Familiar -Very familiar	5 point likert
1	4. Have you received personalized recommendations in social medias before?	- Yes - No	Nominal scale
1	5. How often do you receive personalized recommendations when shopping online?	- Very often - Often - Sometimes - Rarely - Never	5 point likert
1	6. If you answered yes to the questions above, could you specify what this recommendation was about and where did you come across it?	-	Open ended question

Appendix 1 continued

2	7. On a scale of 1 to 5, how do you perceive personalized AI-generated recommendations?	- Very positive - Positive - Neutral - Negative - Very negative	5 point likert
2	8. On a scale of 1 to 5, how do you perceive the accuracy of personalized recommendations you receive from an online marketplace?	- Very accurate - Accurate - Neutral - Not accurate - Not accurate at all	5 point likert
2	9. On a scale of 1 to 5, how concerned are you about the use of AI in personalized recommendations?	- Very concerned - Concerned - Neutral - Not concerned - Not concerned at all	5 point likert
2	10. On a scale of 1 to 5, how concerned are you about privacy and data security in relation to AI-generated personalized recommendations?	- Very concerned - Concerned - Neutral - Not concerned - Not concerned at all	5 point likert
2	11. How important, in your opinion, is transparency in understanding how AI-generated personalized recommendations are generated?	- Very important - Important - Neutral - Not important - Not important at all	5 point likert
2	12. AI-generated personalized recommendations enhance my shopping experience.	- Yes - No	Nominal scale
2	13. If you answered yes to the previous question, would you elaborate in short sentences why personal recommendations improve your shopping experience?	-	Open ended question

Appendix 1 continued

3	14. 14. On a scale of 1-5, how often do you click on personalized recommendations when shopping online?	- Very often - Often - Sometimes - Rarely - Never	5 point likert
3	15. Have you ever made a purchase based on a personalized recommendation from an online marketplace?	- Yes - No	Nominal scale
3	16. After taking this survey, do you feel that you will pay more attention to personalized advertising and recommendations created by artificial intelligence in the future?	- Strongly agree - Agree - Neutral - Disagree - Strongly disagree	5 point likert

Source: author's survey, 2023

Appendix 2. Survey data

The research survey results have been uploaded to an external server for reading. The answers to the open ended questions and data from the survey can be found behind the following link:

https://docs.google.com/spreadsheets/d/1gTomppeRl6gY5O_GrRuxk97Y1p6TEJDmbMwro1GxEG0/edit?usp=sharing

Source: author's survey, 2023

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