The Ethical Dilemmas of Recommender Systems on e-Commerce Websites:

A Qualitative Study on Consumer Impressions on Zalando's Website

Linnea Orimus
Master's thesis in International Marketing
Supervisor: Johanna Lindström
Faculty of Social Sciences, Business and Economics, and Law
Åbo Akademi
2023

ÅBO AKADEMI UNIVERSITY – Faculty of Social Sciences, Business and Economics

Abstract for Master's thesis

Subject: International Marketing	
Writer: Linnea Orimus	
Title: The Ethical Dilemmas of Recommender Systems: A Qualitative Study on Consumer Impressions on Zalando's Website	
Supervisor: Johanna Lindström	

Abstract:

Consumer data is widely used throughout the entire online web and since it involves the use of personal data and information, it can be seen as unethical in many ways. From a privacy perspective, personalization can be unethical, as it includes the collection and use of personal data. The use of personalization in e-commerce can also be unethical, as it utilizes nudging and thus influences the consumers' decision-making process. Consumer data is used for personalization to effectivize the purchase process for the consumers. This can be done e.g., in the form of recommender systems, which use the collected consumer data and with the help of artificial intelligence recommend suitable products for the consumers.

This thesis studies the ethical dilemmas of recommender systems in the context of e-commerce through the impressions of Gen Z consumers. The aim of the study is to provide perspective on consumer impressions on ethical dilemmas of recommender systems, to help retailers understand how to serve their customers better in the means of customer-centricity. The study is of qualitative nature, and it has been conducted in form of semi-structured interviews with a total of 9 consumers. Additionally, a conceptual framework was created from relevant literature.

The results of this thesis indicate that more consideration should be given into the transparency of data privacy. Moreover, the results implied that to increase the consumers' trust on the website, retailers must acknowledge the present ethical dilemmas and act towards a more ethical shopping experience. Additionally, the study presents a clear need for emphasis on the importance of sustainability in e-commerce. By acknowledging the issues of transparency and the negative feelings they might create for the consumers, steps can be taken to increase the consumers' sense of control to make conscious purchase decisions.

Keywords: Ethical dilemmas, recommender systems, e-commerce, consumer ethics, personalization, artificial intelligence, nudging, data privacy

Date: 10.5.2023	Number of pages: 71 (81)

Table of Contents

1. Introduction

With the development of e-commerce and artificial intelligence, consumer data is widely used for personalization to increase conversion rates. Consumer data, or user data, is being used throughout the entire online web and since it involves personal data and information, it can be seen as unethical in many ways. From a privacy perspective, personalization can be unethical, as it includes the collection and use of personal data. The use of personalization in e-commerce can also be unethical, as it utilizes nudging and thus influences the consumers' decision-making process.

Consumer data is used for personalization to effectivize the purchase process for the consumer. Retailers want to meet the needs of the customer, since customer-centricity ultimately drives business activity (Bolton, 2004). Creating a holistic customer-centric purchase experience also benefits the retailer, with increased conversion rates bringing in more sales and simultaneously creating a loyal, trusting customer base. Increasingly, as Jain and Sundström (2021) suggest, creating an exceptional customer experience throughout the customer journey is suggested to be one of the main goals to drive business profitability.

Personalization through consumer data can be e.g., in the form of recommender systems. These systems are used by webshops to provide individual assistance and offer consumers recommended products to purchase (Schafer, Konstan & Riedi, 1999). Recommender systems can utilize collected consumer data and with the help of artificial intelligence recommend suitable products for the consumers, and thus improve the perceived value and satisfaction (Jain & Sundström, 2021). The development of web technology has thereby enabled extremely personalized purchase paths for individual customers, by offering customers unique opportunities to make the visions of a perfect product reality (Jain & Sundström, 2021).

As web technology keeps developing, alternatives for e-commerce personalization have become more available. Personalization requires collection of an extensive amount of data, and the collection of big data evokes mixed feelings among many consumers. Recommender systems, used for the means of personalization, are a form of nudging, which by affecting the consumers' perception can be seen as unethical (Milano, Taddeo & Floridi, 2019). And as Shah, Okeke and Ahmed (2013) discuss, the impersonal nature of online purchasing has led to rising concerns of privacy. The ethics of recommender systems has been widely studied from

the perspective of the online businesses and retailers (Milano, Taddeo & Floridi, 2020) but the perspective of the consumers has given little attention. The use of recommender systems creates multiple ethical dilemmas. What do the consumers think about the ethical dilemmas of recommender systems and how does it affect the consumers' intention of purchase? As the retailers, by using recommender systems, strive to nudge the consumers for additional purchases, the consumers' viewpoints on the ethical dilemmas becomes thereby important to study.

How do consumers view the collection of consumer data? Can the use of collected consumer data be ethical? How do consumers view the ethical dilemmas of recommender systems, such as the effect of nudging and filter bubbles, to affect their purchase behavior? Personalization can be done on multiple levels depending on the web technology, as well as the amount of consumer data available. Customer-centric e-commerce emphasizes the customer's opinion, and the perspective of the customer is needed for the retailers to serve the customers profoundly.

1.1 Purpose

The purpose of this thesis is to study the ethical dilemmas of recommender systems in the context of e-commerce through the impressions of Gen Z consumers. The study aims to provide perspective on consumer impressions of the ethical dilemmas of recommender systems, to help retailers understand how to serve their customer better, in the means of customer-centricity.

By using artificial intelligence or automation, e-commerce businesses can potentially collect large amounts of data, also referred to as big data, from customers' previous purchase history and navigation on the website. Recommender systems utilize this data and learn from consumers, to recommend products they would find most valuable among the entire product selection (Schafer et al., 1999), and therefore satisfy the customers' needs. As Akter and Wamba (2016) mention big data analytics can provide businesses within the field of e-commerce value by using the dynamics of people, processes, and technologies and finally transform data into valuable insights, used to make decisions to benefit the business.

While big data has the potential to add business value throughout the value chain (Akter & Wamba, 2016), simultaneously it brings challenges and issues for the business. Is the collection of consumer data and the use of consumer data ethical? One of the main aims of recommender systems is to increase in e-commerce by converting visitors into purchases (Karn et al., 2023). Therefore, retailers use recommender systems to increase the number of purchases. Should it be done to the detriment of consumers?

Since customer centricity in e-commerce focuses heavily on satisfying the customer, it becomes important to understand how consumers view the ethical dilemmas regarding customer centricity. Studying the ethical dilemmas of recommender systems is also relevant for the topic of sustainability and the future of e-commerce. Big data collection and the use of smart web technologies, such as artificial intelligence, automations, and recommender systems can benefit the customer in identifying needs beforehand, as well as satisfying the customer in their online shopping in general. From the business' perspective, recommender systems effectivize the customers' purchase path, and therefore affect conversion rates and sales positively. The aim of recommender systems is therefore to affect the consumers' intention of purchase.

While these technologies and systems offer numerous benefits for both the customer and the business operating online, they simultaneously create ethical issues in the form of 1) the collection of consumer data, 2) the use of collected consumer data, 3) recommender systems and nudging, and 4) the effect of filter bubbles it creates. Hence, this thesis will focus on consumers' impressions of recommender systems and their ethical dilemmas as a part of personalized e-commerce, and answer the following research questions:

1. How do consumers perceive the collection of data to create a more personalized shopping experience?
2. How do consumers perceive the use of recommender systems as a part of their shopping experience?
3. Is the collection of data justified to create personalized recommendations?
4. What ethical dilemmas can be identified in the use of recommender systems in the context of e-commerce?

1.2 Method of study

To measure and analyze consumer experiences and impressions of the ethical dilemmas of recommender systems in the context of e-commerce, a collection of individual opinions is needed. The form of the interview must be open enough for the interviewee to give freely formulated responses and provide enough space to describe how they interpret the issues. The results must still be structured enough for the responses to be comparable. Therefore, semi-structured interviews will be used. To increase reliability the semi-structured interview guide includes definitions of terms, such as privacy policy, first-party data, and third-party data perquisite to some questions. The aim of the definitions is to provide the participants with necessary information about the topic without guiding their answers.

Participants for the study will be chosen with convenience sampling and will consist of Finnish Gen Z consumers, meaning consumers born between the years 1995-2010. The results of the study will then be analyzed and presented in the form of a thematic analysis, to identify interesting themes from the data. Ethical conduct will be implemented into the study and all participants will be presented with the code of ethics.

1.3 Terms and definitions

The following chapter will provide short definitions to key terminology used in this thesis, to provide quick insight into the topic.

E-commerce

Electronic Commerce, or e-commerce, can be described as the process of buying and selling goods and services via the Internet. There are two widely known types of e-commerce: Business-to-business (B2B) and business-to-consumer (B2C), depending on the buyer-seller relationship (Tian & Stewart, 2006). Later even customer-to-customer (C2C) commerce has gained popularity, as marketplaces has allowed commerce between consumers on the internet.

Customer-centric Business Processing

An approach attempting to put the needs of the customer at the core of business processes (Bolton, 2004). The movement identifies that core competencies are not enough to keep up with the changing, competitive market. It emphasizes the impact on the customer in all business processes, and aims to understand the customers, and to identify their wants and needs and respond positively to their actions (Bolton, 2004). A customer-centric approach has become more popular since customers nowadays have the power and look for exceptional service.

E-commerce personalization

Personalization of e-commerce can be defined as *the act of specifically selecting content in the sense of Web page or other digital content, for individual customers based on properties of the customer with the goal of increasing business outcomes for an e-commerce platform* (Kaptein & Parvinen, 2015; 8). There are different ways to personalize e-commerce platforms, and the main goal of the act is to increase sales and effectivize customer purchase paths, by utilizing existing customer data to identify customer needs. While personalization offers value to consumers, it produces mixed effects regarding consumer privacy (Martin & Murphy, 2017).

Recommender systems

Recommender systems are systems used in e-commerce sites, as well as other forms of digital media, to suggest products or certain items to their customers or users (Schafer et al., 1999). The recommendations can be based on general user information, such as demographics, or on past site behavior, as a prediction for future behavior (Schafer et al., 1999). As Schafer et al. (1999; 158) describe, these techniques are part of personalization on a site, since they help the site adapt itself to each customer.

Artificial intelligence

Can be defined as a technology science that develops theoretical methods, technologies, and applications to simulate and extend human Intelligence (Song, Yang, Huang & Huang, 2019). Artificial intelligence, or AI, is closely related to computer psychology, and currently it is

mainly involved in machine learning and interactive learning (Song et al., 2019). AI is heavily influencing the future of e-commerce, and it can be applied to optimize e-commerce operations through chatbots, recommendation engines, intelligent logistics, optimal pricing etc. (Song et al., 2019).

Consumer ethics

The term can either refer to consumer decision making in certain situations, or consumer viewpoints regarding an ethical matter. This thesis will refer to the latter. Ethics are concerned with the moral character of voluntary actions influencing other people, and within e-commerce it is mostly related to computer abuse, responsibility, and anonymity (Sharma & Lijuan, 2013). E-commerce ethics are linked to trust, security, privacy, and consumer loyalty (Sharma & Lijuan, 2013)

Nudging

Nudging bases on the thought that even small and insignificant details can have impacts on the behavior of people (Wilkinson, 2013). Nudges can be defined as interventions that steer people in particular directions, but also allow them to make individual decisions (Sunstein, 2015). As Wilkinson (2013) described, nudging can even be seen as a form of manipulation, and therefore raises ethical questions.

Data privacy

Data privacy can be defined as an expanding sub-field of data management, with the goal to answer queries over sensitive datasets without compromising the privacy of the individuals whose records are contained in these databases (Kifer & Machanavajjhala, 2011). Data privacy concerns many consumers and other users, since storing high volume data requires secure data storages. Weak data storage security could lead to data leaks, comprising personal information of the customers. Customer data could also leak to third parties, which is a major challenge in data privacy.

1.3 Delimitations

This thesis is delimited to Generation Z consumers, who have grown up with the commodity of online shopping, view e-commerce recommender systems and the ethical dilemmas related to them. The aim of the study is to provide useful information for future e-commerce retailers, and will therefore focus on the consumer generation of the future, Gen Z. The study will also be limited on consumers in Finland. More precisely, this thesis will focus on the clothing industry, and will draw examples of recommender systems from the multinational online fashion platform Zalando's e-commerce site. The company is known to use AI and machine learning in creating unique recommender systems to personalize the purchase path for each individual customer (Marr, 2019).

A lot of previous studies can be found studying e-commerce personalization from the business's perspective (Milano et al., 2020). Therefore, it is motivated to limit the study to focus on consumer impression, to complement existing literature. Customer-centricity has gained importance over the years, and increasingly more companies are willing to put the customer at the center of all activities. Simultaneously, consumers are gaining more power within all e-commerce businesses, due to an increased amount of competition on the market. Understanding consumer impressions are key to successful e-commerce in the future.

1.4 Disposition

The thesis consists of six chapters; an introduction, a description on the conceptual framework, the chosen methodology for the study, a presentation of the results, an analysis of the results compared with the defined conceptual framework, as well as final discussions.

The first chapter introduces the problem described through the perspective of the retailers and the consumers. The aim of the study is presented, alongside with the defined research questions, and the delimitations of the study. Key terminology is presented and briefly described.

The second chapter presents the conceptual framework, which consists of two parts. The first part describes consumer ethics and the different aspects that might affect the consumers' purchase intention. The second part focuses on the ethical dilemmas of recommender systems in the context of e-commerce. Finally, the described two parts are combined and visualized in

the form of a conceptual framework, to visually explain the factors that might affect the purchase intention of Gen Z consumers, and the ethical dilemmas that come along with the use of recommender systems.

The third chapter discusses the methodology chosen for the study, alongside with the limitations, research design, and a description on how validity and reliability will be achieved in the study. The method of analysis is presented briefly.

The fourth chapter presents the collected results together with selected data from the study.

The fifth chapter compares the results to the defined conceptual framework. At the end of the analysis, an updated version of the conceptual framework is presented.

In the sixth and final chapter, the study is concluded in a discussion, alongside with answers to the defined research questions. Suggestions for future research is presented.

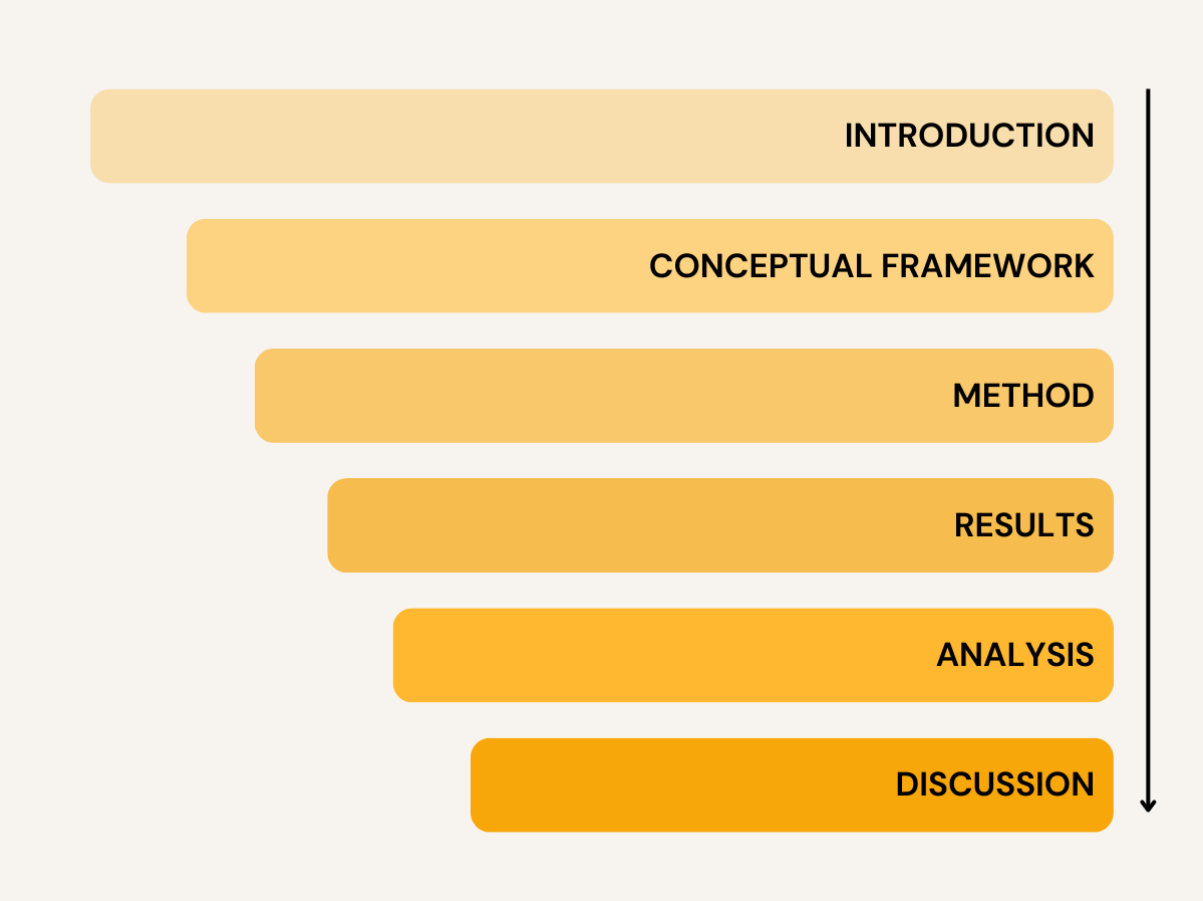

Figure 1. Disposition

2 Conceptual Framework

In the following chapter, the conceptual framework for the thesis is presented. The framework is divided into two parts: Consumer Ethics as well as E-commerce and Ethical Dilemmas. The first part describes consumers as the users and the interpreters of recommender systems. The second part focuses on the recommender systems and their online environment, as well as the ethical dilemmas they might cause for the users.

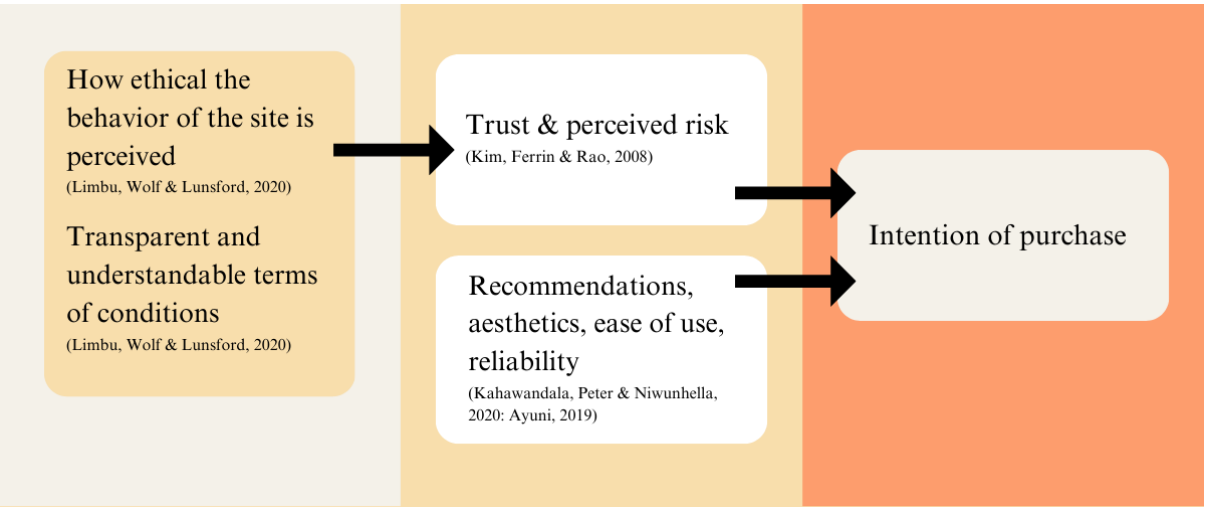

Figure 2. Consumer Ethics.

2.1 Consumer Ethics

This chapter focuses on describing the different aspects that might affect ethics of consumers, especially consumers of Generation Z, in an online environment. Also, the chapter aims to illustrate the concept of customer-centricity and its meaning in e-commerce this day.

2.1.1 Consumer Ethics and Trust in Online Environments

Relatively few studies have been made on the ethical perspective of the consumers in an online setting. Consumer ethics can be defined as the moral principles and standards that guide the behavior of individuals as they obtain, use, and dispose of goods and services (Muncy & Vitell, 1992; Vitell, 2003). As these principles and standards guide consumers in their behavior, they can be seen to affect the decision-making process of the consumers' pre-purchase. Kim, Ferrin,

and Rao (2008) suggest a consumer's trust directly and indirectly affects their purchasing intention. Limbu, Wolf, and Lunsford (2012) argue that all online interactions require trust, which represents the consumer's willingness to accept vulnerability in an online transaction based on one's positive expectation regarding an online retailer (Kimery & McCord, 2002; Limbu et al., 2012).

Kim et al. (2008) present a framework of how consumer trust, perceived risk and perceived benefit affect the intention of purchase. According to the presented framework, a consumer makes their purchase decision based on their intention – and the consumer's intention is affected by their perception of benefit, risk, and trust towards the online webshop:

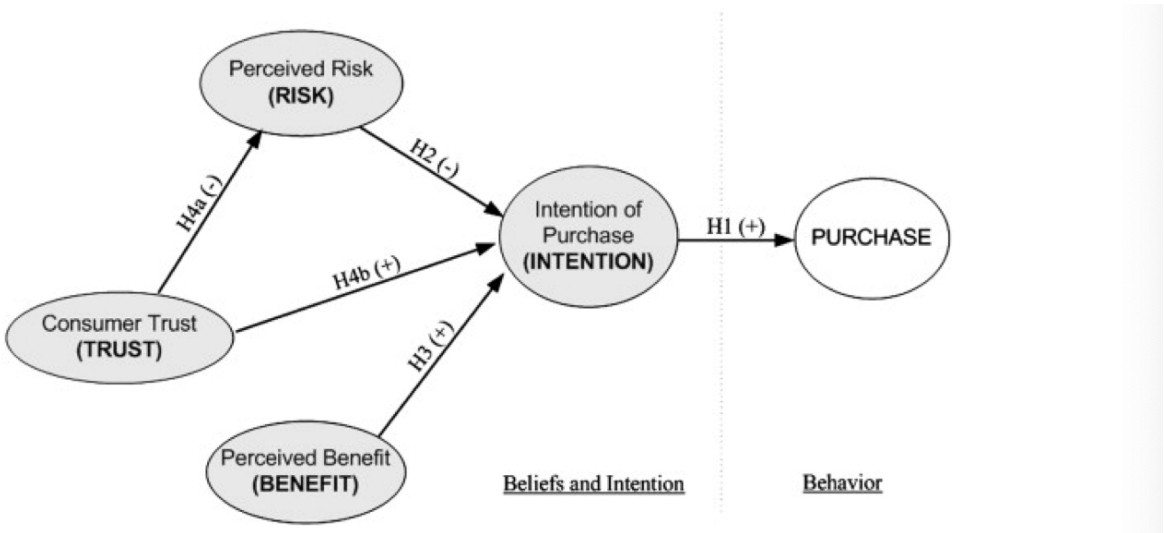

Figure 3. Theoretical framework of the effect of a consumer's trust on purchase intention (Kim et al., 2008)

The study by Kim et al. (2008) found a consumer's trust to have a strong positive effect on the purchasing intention as well as a strong negative effect on a consumer's perceived risk. The perceived risk of the consumer reduces the consumer's intention to purchase, while perceived benefit increases the consumer's purchasing intention (Kim et al., 2008). Also, a consumer's perception of privacy and security protection had strong influences on both trust and risk (Kim et al., 2008).

As a concept, trust relates closely to perceived ethics, and it is a power that must exist between a trustor and a trustee (Limbu et al., 2012). In online transactions and environments of e-commerce, online shoppers must give out their private information to the website to receive

their goods. They must rely on the retailer's promise that their private information will be treated with respect (Limbu et al., 2012), given that the promise is expressed. According to their findings, Limbu et al. (2012) state that how consumers perceive ethical behavior through the website will shape their trust and affect intentions to purchase from and revisit the website. However, ethical behavior on the part of the retailer does not seem sufficient to make consumers purchase or return to the website (Limbu et al. (2012). It is the positive evaluation of ethical behavior that leads to more consumer trust of the online retailer (Limbu et al. 2012).

Therefore, online retailers should strengthen consumers' trust in the websites by addressing privacy issues transparently, as well as being explicit when describing charges, policies, and situations where items are non-refundable (Limbu et al., 2012). The privacy policy and terms of conditions should be presented in a way that is understandable for the consumer, to make an effect on the consumer's ethical perception.

2.1.2 Consumer Perception

According to Roncevic, Lukcic and Spoljarie (2019), perception can be described as a complex process by which people select, organize, and interpret sensory stimuli and create their own attitude toward a subject, such as a product or service. How people perceive different subjects can vary on an individual level, but some generalizations can be made. Consumer perceptions describe the perception of consumers, as it is displayed in a specific environment of retail. Consumer perception can be viewed to be influenced by the elements of the marketing mix found within traditional and digital marketing (Roncevic et al., 2019). When comparing consumer trust to traditional and digital marketing, traditional marketing is generally trusted more since people understand how it works (Roncevic et al., 2019**).**

Perception plays an integral part in e-commerce, as it affects how trustworthy the website is perceived. Trust can be seen as the core element of e-commerce activity, and to enhance consumer trust in especially B2C business transactions, the security and privacy of the customers need to be focused on (Mazhar, Jam & Anwar, 2011). How trustworthy the online store is to be perceived influences transactions in an online environment (Mazhar et al., 2011). Interestingly, the study by Mazhar et al. (2011) found that people who regularly engage in e-commerce are not bothered by the fact that their privacy, as well as personal and financial information, might be put at risk. However, newcomers had a lower level of trust in the privacy

of the website. Thus, people who do not regularly engage in e-commerce might avoid online transactions since they perceive it as highly risky (Mazhar et al., 2011).

2.1.3 Generation Z Consumers

Generations exist to generalize and group individuals. Growing up and living in the same time period as others of similar age, one is being exposed to the same events (e.g., political, economic, historical, cultural, environmental), and also being affected by the same development of technology (Dolot, 2018). The similar experiences in life may influence people enough that they think, make decisions, and behave in a similar way as their peers (Dolot, 2018). Currently, Generation Z is the second youngest generation, born between the years of 1995-2010. This generation was raised in a world with the web, the internet, smart phones, laptops, freely available networks, and digital media (Dolot, 2018; Singh & Dangmei, 2016). Therefore, Generation Z is a generation that seems to be familiar with using new technology as a part of their daily environment (Dolot, 2018).

As consumers Generation Z has moved from traditional retail to online retail due to efficiency and savings in time and money (Ayuni, 2019). The main concerns of the generation include information, aesthetics, ease of use, reliability, privacy, and security (Ayuni, 2019). For Generation Z consumers, it is typical to seek recommendations and concurrence of friends while purchasing products online (Kahawandala, Peter & Niwunhella, 2020). Competition between online retailers grow, and merchants try to analyze large amounts of data to find patterns and ways to retain customers (McDermott, 2020). Personalization through recommender systems can be seen as a technique to effectivize future purchases by analyzing and finding patterns in previous consumer behavior. Generally, Generation Z consumers value digital and virtual interaction, and as the future of retail will feature intelligent algorithms for personalization (McDermott, 2020), the digital customer experience might pass the traditional one. However, entering more customer-centric consumerism involves giving the customer the power to choose where to shop and for how long (McDermott, 2020). If the e-commerce site is perceived as untrustworthy or unethical, consumers might quickly leave.

2.1.4 Customer-centricity

As an information system, customer-centricity is a third-generation information system (Liang & Tanniru, 2006). The first-generation system focused on the technology, the second-generation system on the processes, whereas the third-generation, customer-centric information system, focuses on the customer. Ultimately, the goal of the third-generation system is to drive business through customer value, with the focus of system development being on configuring various components of the customer-driven value chain, to meet the customer value proposition (Liang & Tanniru, 2006). The system is designed with the preferences and needs of the customer. As an example of a customer-centric information system, a website can use customer engagement as a measurement, to allow the system to react quickly and discover customer preferences (Liang & Tanniru, 2006). Thus, the system recommends the customer a product they might like.

Personalization of e-commerce began with online retailers wanting to greet their customers more personally, to give them a similar customer experience as shopping face-to-face (offline). Online retailers assumed that a one-on-one kind of interaction would be preferred to an anonymous one (Goy et al., 2007). The interest in personalization has grown due to an increasing demand of customer-centric services, a new perspective of customer relationship management, or CRM (Goy et al., 2007). Businesses now emphasize the customer over the product and focus on customer loyalty rather than the acquisition of new customers (Goy et al., 2007).

With the development of IT, collecting, storing, analyzing, and transmitting large amounts of information have become reality (Shah, Rust, Parasuraman, Staelin & Day, 2006). This has presented businesses with the opportunity to better manage customer relationships. The developed technology provides companies with an opportunity to create new products, services, and business models. Likewise, it offers the customers more access to information (Afflerbach & Frank, 2016). This means that the customers can more efficiently compare products and choose the product specifically for their preferences (Afflerbach & Frank, 2016). Customer-centricity has thereby become a necessity, and to meet the wants and needs of the customer, businesses must place them at the center of the business (Moormann & Palvolgyi, 2013).

Customer-centricity has changed the perspective of business modeling, from the traditional, product-oriented "inside-out" view to a customer-driven "outside-in" perspective (Moormann & Palvolgyi, 2013). Hence, the customers' view becomes the starting point of business modeling activities, instead of only being included as a perspective (Moormann & Palvolgyi, 2013). As Moormann and Palvolgyi (2013) discuss, customer-centricity strives to serve the customer the way it is most efficient, and by using customer information or data, help the customer in managing their processes of decision-making.

2.2 The Ethical Dilemmas of Recommender Systems in The Context of E-commerce

The second part of the conceptual framework describes the ethical dilemmas related to recommender systems in the context of e-commerce. The online environment allows the collection of big data, which is used in personalization for users on the site. Not all consumers are concerned of data privacy and the effect of filter bubbles. However, due to the circumstances of this constantly evolving digital society, consumers should be more aware of the issues data collection and data use can create, for the means of personalization.

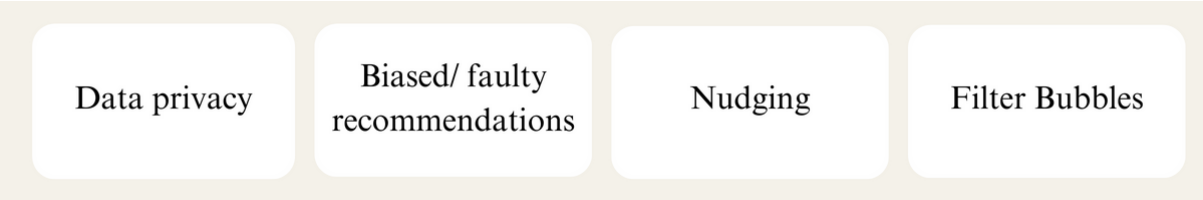

Figure 4. The Ethical Dilemmas.

2.2.1 Electronic Commerce (E-commerce)

Generally electronic commerce, or e-commerce, refers to the buying and selling of goods and services online. Goy, Ardissono and Petrone (2007) extended the definition to include all inter-company and intra-company functions that enable commerce and use interaction with a remote computer. E-commerce can be divided into B2B e-commerce (business interaction between enterprises) and B2C e-commerce (business interactions between enterprise and customers) (Goy et al., 2007). Later, as the field of electronic commerce has developed, even C2C (business interaction between customers) has gained space. Since online activity is not limited

by geographical or time zone distances, business can be done more easily than ever. E-commerce does, however, create trust issues in some customers due to the lack of face-to-face communication many customers are used to (Goy et al., 2007). The online retailer must find ways of displaying the products in a way that resembles the physical store experience. This can be done by including pictures and video material displaying the product through multiple angles and perspectives, together with descriptive text, material information, and unique size charts.

In e-commerce, the ethical issue of consumer trust is an individual, local, and social matter combined with the technological side (Sharma & Lijuan, 2013). According to Sharma and Lijuan (2013), what differentiates e-commerce from regular commerce is the possibility to not be restricted to the purchase of a product. It even includes communication platforms that a company may offer to its customers over network, pre-purchase information and after-sales services and support (Sharma & Lijuan, 2013). Further it is discussed, how trust is an important condition for successful commercial transaction and is high of significance in e-commerce as customers often have little knowledge of sellers and must deal with doubt, uncertainty, and risks (Sharma & Lijuan, 2013). The increased internet traffic and the complexity of companies in tracking the traffic have made privacy a vital issue in e-commerce (Sharma & Lijuan, 2013). The internet makes it possible for companies to collect customer data and personal information and use such information to achieve greater insights into customers' behavior, support marketing strategies and meet their needs (Sharma & Lijuan, 2013).

2.2.2 Recommender Systems in e-Commerce

Recommender systems (RS) are systems consumers interact with often, when using digital services or apps. They are based on algorithms that make suggestions about the users' potential preferences, based on the users' previous behavior (Milano et al., 2020). They enable personalization for each individual customer, since they automate personalization on the websites (Schafer et al., 1999). Recommender systems are efficient, since they with the help of automated methods identify and reduce the number of goods while considering the interests of individual users (Souali, Afia & Faizi, 2011). They serve as functions that take information about a user's preferences as an input and output a prediction about the rating that a user would give of the items under evaluation and predict how they would rank a set of items individually or as a bundle (Milano et al., 2020).

Within e-commerce, recommender systems are used to influence which products the customer chooses to buy. As Schafer et al. (1999) describes, recommender systems can enhance e-commerce sales by 1) helping the customers find products based on previous on-site behavior, 2) increasing the average order size by cross-selling products, and 3) matching the needs of the customers, and thereby improving customer loyalty by creating a value-added relationship between the site and the customer.

There can be various algorithms behind recommender systems, depending on how the recommended output is wanted to be calculated (Milano et al., 2020). As Jameson et al. (2015) proposes, there can be six strategies for generating recommendations, which follow different choice patterns based on the following features:

1) The attributes of the options
2) The expected consequences of choosing an option
3) Prior experience with similar options
4) Social pressure or social information about the options
5) Following a specific policy
6) Trial-and-error-based choice

To work efficiently, the recommender systems collect, curate, and act upon vast amounts of personal data, and finally end up shaping individual experience of digital environments and social interactions (Milano et al., 2020; Burr et al., 2018; de Vries, 2010; Karimi et al., 2018). Since recommender systems shape user preferences and guide choices individually and socially, they have a wide impact on users and society (Milano et al., 2020). Having systems that affect the choices and preferences of individuals, creates an ethical issue. As Milano et al. (2020) discuss, what moral principles may be correct is contentious and debated in philosophy. Therefore, Milano et al. (2020) argue there are at least two classes of variables that are morally relevant; actions and consequences. Recommender systems can thereby have ethical impacts in two ways; its operations can 1) impact (negatively) the utility of any of its stakeholders; and/or, 2) violate their rights (Milano et al., 2020). The described ethical impacts can be immediate. When a recommendation is inaccurate, it leads to a decrease in utility for the user (Milano et al., 2020).

One of the main issues for recommender systems is privacy. According to Milano et al. (2020; 961), privacy risks occur in at least four stages; 1) when data are collected or shared without the user's explicit consent, 2) once data sets are stored, they can potentially get leaked, 3) as the system can draw inferences from the data, and 4) the ability of the system to construct a model of the user based on gathered data of other users. The second of the main issues is the autonomy of the individual users. The systems can provide recommendations that nudge users in a particular direction, by either showing only a specific type of content or limiting the options for the users (Milano et al., 2020). Recommender systems can be a dangerous way of affecting opinions within the society, since even news sites can utilize recommender systems, and ultimately create self-reinforcing biases for their users (Milano et al., 2020). These systems can be seen as a way of nudging, which embeds values (Milano et al., 2020).

2.2.3 Machine Learning Algorithms in Recommender Systems

As in the case of Zalando, the recommender systems on sites use different algorithms of automation and AI. Recommender systems use methods of artificial intelligence to provide users with item recommendations (Portugal, Alencar & Cowan, 2018). One example of an algorithmic automation in artificial intelligence is machine learning. According to Portugal et al. (2018), Machine Learning (ML) uses computers to simulate human learning and allows computers to identify and acquire knowledge form the real world, and improve its performance based on the learnt knowledge. Compared to humans, computers do not learn by reasoning, but rather with algorithms (Portugal et al., 2018).

Different types of ML techniques are used in recommender systems, such as collaborative filtering, content-based filtering, and hybrid models (Yassine, Mohamed & Al Achhab, 2021). These techniques differ from each other by the type of user data they collect and how the collected data is analyzed. Collaborative filtering models compare items one user purchased to items other users of similar taste purchased, to find patterns and recommend an item based on other similar purchase patterns (Yassine et al., 2021). Content-based models find certain keywords or tags for purchased items to recommend items with similar keywords or tags for the next recommendation (Yassine et al., 2021). Hybrid models use mixes of collaborative filtering models and content-based models to create recommendations.

ML algorithms are beneficial for their users in ways of efficiency. Simultaneously, they are being criticized for biased approaches that can have consequences (Yapo & Weiss, 2018). In the example of collaborative filtering, the model needs to have the previous purchase history for the recommended item. If the item is new, the collaborative filtering algorithm cannot recommend the product to anyone (Stinson (2022). Another bias created by collaborative filtering is the popularity bias, where popular items are likely to be recommended to many or every user (Stinson, 2022). Collaborative filtering algorithms might offer recommendations too narrow than the full range of what the user might like, leading to over-specialization (Stinson, 2022). The recommendations can also lead to homogenization, where the variance of recommended items decreases over time (Stinson, 2022), even known as filter bubbles.

Compared to collaborative filtering models, content-based models can avoid many of the above-mentioned biases. However, as content-based models use tags to categorize items for recommendations, if the tags are faulty the recommendation becomes irrelevant.

2.2.4 Filter Bubbles

Online recommender systems suffer from an effect called the *filter bubble.* As Pariser (2011) defines the term, filter bubbles can be defined as a self-reinforcing pattern of narrowing exposure that reduces user creativity, learning and connection. As the user follows the recommendations of the recommender system, it is claimed that the users are slowly led into filter bubbles, where they effectively become isolated from a diversity of viewpoints or content (Pariser, 2011; Aridor, Goncalves & Sikdar, 2019).

Nguyen, Hui, Harper, Terveen and Konstan (2014) studied the broadening or narrowing influence of an online recommender system on its users. According to the results of the study, it seemed that choosing the recommended items lessened the risk of a filter bubble; the narrowing effect was mitigated for users who appeared to follow the recommender. Web designers need to take filter bubbles into consideration when designing recommender systems to discourage the narrowing tendency (Nguyen et al., 2014). This can be done by using collaborative filtering algorithms and informing users about the diversity of their consumption e.g., by displaying diversity metrics or summary statistics (Nguyen et al., 2014). The effect of filter bubbles through recommender systems might create an ethical dilemma if the consumer

is not aware of the web element being a recommender system that bases their preferences on consumer behavior.

2.2.5 Big Data

E-commerce recommender systems use large amounts of data to function and be able to generate product suggestions. Big data is a term that refers to large data sets intended for computational analysis that can be used to advance research by revealing trends and associations (Howe & Elenberg, 2020). In addition, the term refers to the acquisition, screening, storage, and analysis of very large kinds of data through database storage technology (Li & Zhang, 2021). It can also be defined as data that exceeds the processing capacity of a conventional database management system because of its volume, velocity, and variety (Ghandour, 2015). It is data that can be characterized by hugeness, richness, value, speed, accuracy (Li & Zhang, 2021).

Big data needs to be processed, to provide valuable information for its users. Big data analytics aim to improve the decision-making process by analyzing and understanding data (Alrumiah & Hadwan, 2021). E-commerce companies can use big data analytics to enhance their operations and generate new strategies to gain benefits and increase customer value (Alrumiah & Hadwan, 2021). Disregarding the beneficial aspects of big data analytics, the form of data opposes major ethical concerns. Organizations view the collection of citizen data as an opportunity to create value, leverage competitive advantage and maximize productivity and efficiencies in service and product delivery (Jurkiewicz, 2018). The ethical concerns can be social, legal, or political (Jurkiewicz, 2018). To avoid conflicts arising from privacy violations of individuals, companies have instituted business models disclosing the continuous tracking and recording of the information sent (Jurkiewicz, 2018). However, individuals have begun to more precise on the use of their personal data, hence regulations such as the GDPR have surfaced.

2.2.6 Data Privacy

While the increasing development of technology has offered individual users higher levels of privacy than ever before, the same technology equally allows gross breaches of an individual's

privacy (Smith & Shao, 2007). As Smith and Shao (2007) discuss, privacy is difficult to define, since the term can mean so much different areas, such as in law, philosophy, sociology, politics, and computer science. Many argue that privacy is a human right and a highly important human value necessary for many aspects of an individual's moral and social being (Smith & Shao, 2007). Smith and Shao (2007; 92) define privacy according to Schoeman (1984) to fall into the categories of 1) *The right an individual has in being able to control access to personal information about themselves,* 2) *The measure of control an individual has over information about themselves, or who has sensory access to them,* and finally 3) *The state of limited access to an individual and their personal information.* The definition of privacy has even become more complex with the transition from industrial society to the technological one through the information society (Smith & Shao, 2007).

In e-commerce large amounts of personal information is transacted or desired by businesses, since analyzing the data and information provides the businesses an opportunity to increase efficiency (Smith & Shao, 2007). A typical consumer rarely knows how broadly their personal information and online behavior can be used in favor of the business. Even if the website would offer broad information on the use of user data, only a few if no one truly reads it. Ignorance in the use of user data, also typically means ignorance in possible ways to violate data privacy (Smith & Shao, 2007). Consumer-centric privacy can be approached through the perspective of an individual or a business. For an individual, the approach of consumer-centric privacy gives the individual the power of deciding how to use their personal information, giving them more leverage in economic transactions, and a lower trust barrier in e-commerce (Smith & Shao, 2007). For a business, the approach would highlight the importance of consumers as equal partners in a two-way business interaction (Smith & Shao, 2007). Since the trust barrier of consumers would also be significantly lower, it would ultimately lead to more purchases and growth for the e-commerce business and shifting privacy to the consumers would also decrease maintenance costs of privacy (Smith & Shao, 2007).

Defining which party (the consumer or the business) is responsible for data privacy is a challenging task. According to a study by Turner, Zavod and Yurcik (2001) consumers are responsible for their own security by measures such as, protecting passwords and credit card numbers. The feeling of security was mentioned to be affected more by the participant's own experience, recommendations, and brand reputation, rather than by how visible the security technology was on the site (Turner, Zavod & Yurcik, 2001). Recommendations were most

impressive when done through independent third parties that were already broadly recognized, such as paypal.com as an online payment service (Turner et al., 2001).

2.2.7 Nudging and Digital Nudging

Nudging, in its essence, aims to improve the decision-making process of people by changing how options are presented to them (Schmidt & Engelen, 2020). It is defined by Thaler and Sunstein (2008; 6) as *any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives.* Nudges work by triggering cognitive heuristics and fast and less conscious psychological mechanisms (Schmidt & Engelen, 2020). The phenomenon has received plenty of criticism, since they can appear to conflict with moral values, such as freedom of choice, psychological autonomy, and absence of domination (Schmidt & Engelen, 2020).

Automated recommendations in online shops are a usual sight for users. These recommendations are designed to help users find relevant items of interest and to avoid situations of choice overload, while simultaneously supporting organizational goals, such as increased sales or user engagement (Jesse & Jannach, 2021). From the individual decision-making perspective, recommendations can be seen as nudges (Jesse & Jannach, 2021). Originally, nudging appeared before the online environment, as decisions related to personal health or wealth, with the underlying idea that there are certain psychological phenomena that have an influence on how people make decisions (Jesse & Jannach, 2021). Thereafter, the term digital nudging, has been used to describe such scenarios online specifically. Nudging can be done in e-commerce sites by e.g., setting a default option for a choice (Jesse & Jannach, 2021), as it affects the possible outcome of the user's choice.

As recommender systems have effects on the behavior of consumers, they can be seen as a form of behavioral intervention (Jesse & Jannach, 2021). They aim to provide tailored recommendations to match the needs of users individually, and even reduce the physical effort in terms of searching for and finding suitable products (Jesse & Jannach, 2021). Although digital nudging seems to make the experience of purchase more effortless for the customer, it is still debated whether it is ethical or not.

2.3 The Ethics of Recommender Systems: A Framework

To conclude the above discussed theories, a conceptual framework was created to visually explain the factors that affect the intention of purchase for consumers of Generation Z. The conceptual framework will be used as a guide in the entire qualitative research.

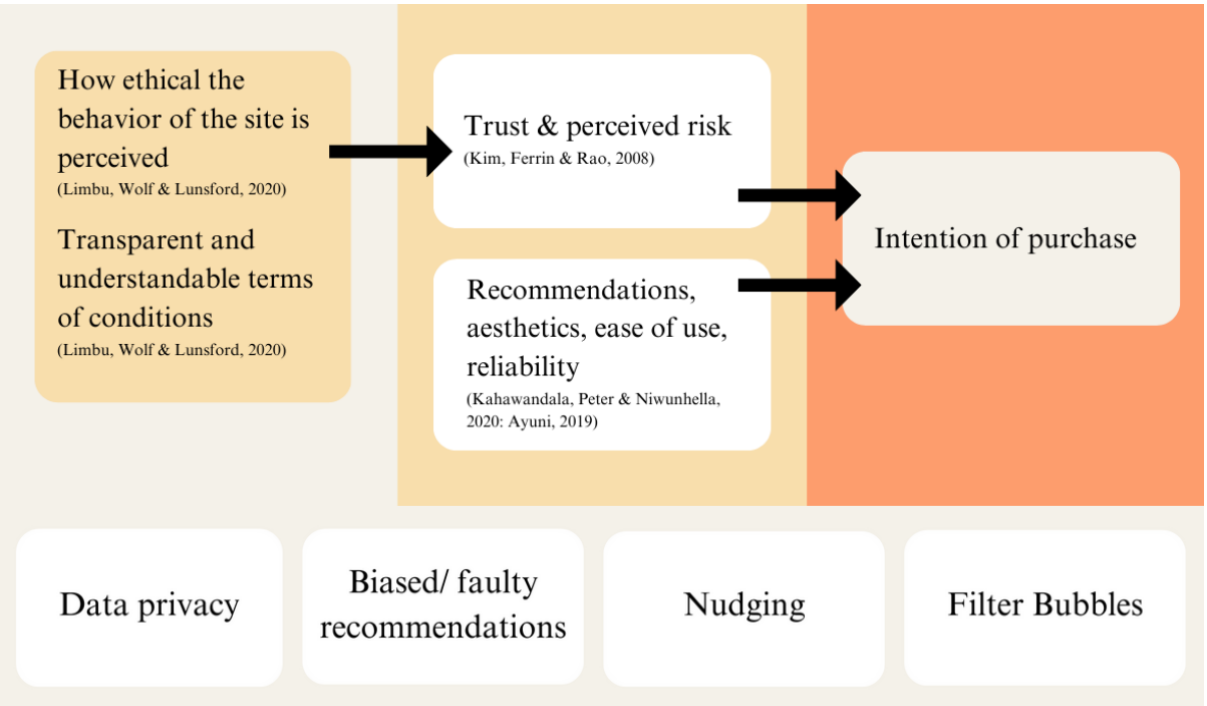

Figure 5. The Conceptual Framework.

The framework above describes the role of consumer ethics in their intention of purchase, based on the model created by Kim et al. (2008). As the study of Kim et al. (2008) present trust affects purchase intention strongly, and perceived risk affects the consumer's purchase intention negatively. Limbu et al. (2008) present how ethical the behavior of the website is perceived shapes the consumers' trust towards the site, and if the ethical behavior is perceived as positive it increases trust. Giving out private information can be seen as a delicate matter, and consumers need to rely on the retailers promise of how private information will be managed (Limbu et al., 2012). Thereby, transparently and understandably addressed privacy issues also affect the consumer's trust on the website. Mazhar et al. (2011) describe trust as the core element of e-commerce activity, and trustworthiness to influence transactions and purchases.

Added to the framework of Kim et al. (2008), Limbu et al. (2008), Mazhar et al. (2011), and Kahawandala et al. (2020) argue that consumers of Generation Z typically seek recommendations while purchasing online. The main concerns of Gen Z consumers were found to include information, aesthetics, ease of use, reliability, privacy, and security (Ayuni, 2019). Together these factors build the framework on what affects the intention of purchase for consumers of the Generation Z.

The ethical issues of recommender systems on e-commerce sites can be divided into 4 main issues: 1) Data privacy, 2) Biased/faulty recommendations, 3) Nudging, and 4) Filter bubbles.

Recommender systems and the use of big data in the environment of e-commerce creates various ethical issues. Aa Milano et al. (2020) discuss, recommender systems affect the individual user by shaping their user preferences, guiding choices individually and socially. They can nudge users in particular directions by only showing specific type of content or limiting options, and thereby creating filter bubbles (Milano et al., 2020). If the users end in filter bubbles, they might get isolated from a diversity of viewpoints or content (Pariser, 2011; Aridor, Goncalves, Sikdar, 2019). Smchidt and Engelen (2020) claim nudging can appear to conflict with moral values, such as freedom of choice, psychological autonomy, and absence of domination.

The other main issue concerns the collection of data and data privacy. The issue of privacy risks to occur 1) when data are collected or shared without the user's explicit consent, 2) once data sets are stored, they can potentially get leaked, 3) as the system can draw inferences from the data, and 4) the ability of the system to construct a model of the user based on gathered data of other users (Milano et al., 2020). Privacy affects trust, which according to Sharma and Lijuan (2013) is of high significance in e-commerce. Although how publicly presented, Smith and Shao (2007) argue consumers are rarely aware of how broadly their personal information can be used, even if broad information on the use would be offered.

Especially in the case of Zalando's recommender systems, the machine learning algorithms use content-based filtering and collaborative filtering (Braun, 2016). Collaborative filtering can create biases in the form of popularity bias, where popular items are likely to get recommended to many or every user (Stinson, 2020). They can also lead to over-specialization and provide recommendations too narrow than the user might like, or to homogenization, where the

variance of recommended items increase over time (Stinson, 2020). If the tags used by content-based filtering are faulty, the recommendations might end up faulty as well.

3 Method

This chapter presents the chosen methodology for the study. First, the research design and choice of method is discussed, followed by a description on data collection. Thereafter, the method of sampling is argued for with information about the chosen participants. Finally, the method of data analysis is discussed, followed by discussions on reliability and validity in the study. This chapter also presents the online platform of Zalando, which is used as an example in the interviews.

3.1 Research Design and Qualitative Research

The research design describes a plan for collecting and analyzing the data needed for the researcher to answer the questions described all the way from the minute details of data collection to the selection of the techniques of data analysis (Flick, Kardoff & Steinke, 2004). To study the subject of the ethical dilemmas of recommender systems, qualitative research was chosen. The data for the research was collected through semi-structured interviews, to gain perspective on the consumer impressions studied in this thesis. The interviewees defined what ethics meant for them, and whether it played any significant role in their online shopping behavior or their attitudes towards online shopping and the ethical dilemmas of recommender systems.

The participants were be chosen by utilizing the method of convenience sampling. By studying impressions on ethics, large generalizations cannot be made. Therefore, convenience sampling allowed a potential hypothesis to be created while the results of the study could still not be extended to a general population (Stratton, 2021). The results of the study aims therefore, to create thought and objectives for future studies.

As this thesis focuses on consumer perceptions, the most suitable research method is qualitative research. Qualitative research includes a range of different terms and research approaches, such as symbolic interactionism and phenomenology, ethnomethodology and constructivism, and structuralist or psychoanalytical (Flick, Kardoff & Steinke, 2004). Compared with quantitative research, qualitative research strives to understand the participants' point of view, and to contribute to a better understanding of social realities and draw attention to processes, patterns, and structural features (Flick et al., 2004). Where quantitative research focuses on quantities

(numbers), qualitative research focuses on data in the form of words and text, more closely as recordings of interviews, notes from observation etc. (Guthrie, 2010). As a method it is more open and involved compared to research strategies that work with large quantities (Flick et al., 2004).

3.4 Data Collection

For data collection this thesis used interviews, which is one of the most common data collection techniques in social sciences. Interviews can be performed in the form of unstructured, semi-structured or structured interview, depending on the strictness of the conversations (Guthrie, 2010). Interviews are often used to study attitudes and perceptions and are mostly seen useful because of their flexibility (Guthrie, 2010).

Choosing between unstructured, semi-structured and structured interviews depends on the topic of the interview and what type of responses the researcher is looking for. As Guthrie (2010) goes on describing, unstructured interviews generate qualitative data by raising issues in a free, conversational form, and can go in depth into topics with even sensitive information. In this form of interview, the role of the interviewer is minimal, and the interviewee is given more space to express their thoughts. The interviewer should present oneself as tactful and speak minimally, almost taking the place of a passive observer (Guthrie, 2010). As a downside, unstructured interviews can get difficult if the interviewee does not prefer to discuss personal or sensitive topics.

Semi-structured interviews follow a more structured form. Interview guides for semi-structured interviews help make the interviews directly comparable and often have standard introductions and conclusions (Guthrie, 2010). The guide still allows some flexibility in the order of the presented intervening questions to provide a natural flow for the interview (Guthrie, 2010). They often provide coded closed-ended responses to questions and look for opportunities to follow-up with open-ended probe questions for the researcher to get a better perspective on the interviewee's thoughts and views (Guthrie, 2010). Semi-structured interviews can be a combination of quantitative and qualitative data, and are usually performed one-to-one (Guthrie, 2010).

Structured interviews use formal and standardized questionnaires, where all interviews are conducted in the same matter to increase reliability by using set questions and response codes

(Guthrie, 2010). Structured interviews can use questionnaires, where the interviewers fill out the form for the interviewees, by data coding or ticking boxes (Guthrie, 2010). Structured interviews can include qualitative answers from open-ended questions, but usually only by short comments (Guthrie, 2010). This method of interview provides great coverage on the research topic, but lacks in depth (Guthrie, 2010).

To study ethics, the form of interview must be open enough for the interviewee to give freely formulated responses and enough space to describe how they interpret ethics and the issue in question. Meanwhile, the method must be structured enough for the responses to be somehow comparable, to create reliability in the research. Therefore, semi-structured interviews were arguably suitable for this thesis.

3.5 Convenience Sampling

Participants for the study were chosen through the method of convenience sampling. According to Stratton (2021) convenience sampling can be used in circumstances where the entire population cannot participate, and sampling is thereby used to gather data that are presumed to be representative of that target population. Convenience sampling is a form of non-probability sampling. It is less objective and a type of sampling that does not provide for each member of a target population to participate in a study, and the participants are selected by the researcher (Stratton, 2021). Convenience sampling is often used for qualitative research. Because it is not costly or time consuming, its simplicity makes it popular in research (Stratton, 2021). It is also useful to generate a potential hypothesis or study objective (Stratton, 2021).

However, convenience sampling is subject to multiple forms of bias and does allow for statistical assessment of sampling error and statistical validity (Stratton, 2021). Since it is a non-probability form of sampling, the researcher cannot extend the results of the study to a general population (Stratton, 2021). The results will only be possible to apply to the participants in the study. Therefore, empirical associations and causations that are generalizable outside the participant group cannot be made (Stratton, 2021).

To increase the reliability of convenience sampling as a method the researcher must acknowledge the faults of the method. The interview or the form of data collection method, can also be precisely structured in a way to give the research method more credibility. To increase credibility, the researcher can avoid complex and vague study objects and

terminology, rather focusing on precisely defined input and outcome variables (Stratton, 2021). As the result can only be applied to the participants in the study, the researcher should also avoid overstating findings. Credibility can be increased by identifying possible external biases that may affect participants, and the biases can then be tested in the study by embedding questions that try to assess participant fatigue (Stratton, 2021).

3.6 Interviews and Choice of participants

Participants for the study were contacted through social media and asked to participate in the study and consent to the use of their data in the research. The sample consisted of 9 interviewees between the ages of 19-26. The participants were sampled through convenience sampling, meaning the participants were chosen by the researcher by matching criteria for the qualitative study. Based on the delimitations defined earlier, this study focuses on consumers of Generation Z i.e., consumers born between the years 1995-2010. Participants for the qualitative study were chosen based on defined age criteria as well as their probability to have encountered recommender systems while shopping online. The latter was evaluated with the help of a preliminary question, presented to all suitable participants that met the age criteria. While contacting possible participants suitable for the case study, all participants were presented with a preliminary question of:

"Have you ordered clothing items online during the past year?"

The preliminary question was presented to the participants to evaluate whether they might have come across recommender systems or not. The preliminary question did leave out some participant candidates. If the participant had ordered clothing items online during the past year, they might have come across a recommender system, since they are very common in modern e-commerce. Also, possible participants who rarely uses e-commerce websites to order items online, are not of relevance to the study.

The interviews were held face-to-face or online, depending on what was convenient for the participants. All interviews were one-to-one, except for one interview with two participants. The group interview consisted of participant 4 and 5 (Sebastian and Emilia). In a semi-structured interview, the interview guide allows flexibility in the order of the presented questions, while still making the interviews comparable (Guthrie, 2010). The interviews followed the interview guide (Appendix 1-2). Some questions were skipped if the participants

had already discussed them, to keep the conversation natural and flowing. The interviews were all held in Finnish, as it was the most natural language for the discussion of all participants. The participants were presented with ethical conduct before beginning the interviews. All interviews were recorded, to ease the process of transcription.

Name (Pseudonym)	Age	Gender	Occupation	Shopping frequency
Erik	23	Male	Working	Frequent, 12+
Kajsa	19	Female	Working	Often, 9-12
Lisa	24	Female	Working	Rarely, 1-4
Sebastian	25	Male	Working	Rarely, 1-4
Emilia	24	Female	Working	Frequent, 12+
Solveig	26	Female	Working	Sometimes, 5-8
Stina	25	Female	Student	Frequent, 12+
Amanda	25	Female	Student	Sometimes, 5-8
Lotta	26	Female	Working	Often, 9-12

Figure 5. Statistics of The Participants.

The interviews were anonymous to maintain a certain trust and confidentiality during the conversation. The participants were advised that their answers were not going to be discussed personally. In the phase of gathering and analyzing data, the interviews were given order numbers. Although the answers are mainly discussed with the help of defined themes in the final discussion, all participants were given a pseudonym to increase readability and help identify patterns in the responses. The pseudonyms above are all Swedish names. It is important to note that specific names have social and cultural significance, and names can imply ethnic, religious, class, and age-based connotations (Clark, 2006). However, these names were all randomly selected by the researcher and do not reveal the participants ethnicity, religion, or class.

Figure 5. represents background information of the participants. The scale of *Online shopping frequency* was defined based on the participants' own evaluations, where the participants described their online shopping frequency freely. Based on the given answers, four categories could be identified for the scale: rarely (1-4 times a year), sometimes (5-8 times a year), often (9-12 times a year), or frequently (12+ times a year).

3.7 Data Analysis

To analyze the collected data, a method of thematic analysis was used. Thematic analysis is *a method for identifying, analyzing, and interpreting patterns of meaning within qualitative data* (Terry, Hayfield, Clarke & Braun, 2017; 297). Themes are defined through coding interesting and relevant features of data. Finally, the themes provide a framework for organizing and reporting the researchers' analytic observations (Terry et al., 2017). Although the themes set a framework, the aim of thematic analysis is not to summarize the content of the data, but rather to identify and interpret key features of the data guided by the research questions (Terry et al., 2017).

Themes for the conceptual framework were identified by the consumers' impressions of ethics and the ethical issues created by recommender systems in the context of e-commerce. The analysis was not bound to the themes identified in the conceptual framework. However, the themes identified in the conceptual framework guided the structure of the interview guide, therefore inevitably affecting the themes identified in the thematic analysis as well. Braun and Clarke (2012) argue that any researcher interested in thematic analysis needs to decide which form of thematic analysis they will use in their analysis. Thematic analysis can be approached in two ways: inductively and deductively (Braun & Clarke, 2012). An inductive approach is driven by what is in the data, and the identified codes and themes derive from the content of the data, whereas a deductive approach derives from previously defined concepts and ideas (Braun & Clarke, 2012). As Braun and Clarke (2012) state, it is almost impossible to be either fully inductive or deductive, and usually the approach on thematic analysis consists of a combination of both approaches.

The analysis of this study followed an inductive form. Codes were identified from the collected data, whereafter the defined codes were structured into themes. The codes were defined by

comparing all answers and data together, to find similarities, differences, and patterns in the responses.

The inductive approach was chosen to truly analyze the impressions of the consumers, and to see whether the themes identified from the collected data could compare to the predefined conceptual framework. However, as the conceptual framework guided the structure of the interview guide, a mix of both inductive and deductive approaches can be found, with emphasis still on the inductive approach.

3.8 Zalando's Online Platform

The thesis demonstrates e-commerce recommender systems and forms of nudging through examples used in Zalando's webshop. The examples were included in the interview to provide concrete examples for the participants of what e-commerce recommender systems look and feel like.

Zalando describes itself as "a leading European online platform for fashion and lifestyle" (corporate.zalando.fi, 2023). The Berlin-based e-commerce platform was founded in 2008, with offices located in Germany, Ireland, Switzerland, and Finland (corporate.zalando.fi, 2023). In 2022, Zalando shipped approximately 261 million orders for 51 million active customers, with a selection of 7000 brands and 1.8 million product choices (corporate.zalando.fi, 2023). With a focus on customer-centricity, Zalando describes the customer strategy as:

"Customer focus is given for us. We want to offer our customers the most comprehensive range of current trends – with maximum availability. At the same time, we want to inspire through high levels of personalization; creating a suitable choice for every customer. Finally, we invest in supplier, payment, and customer service for a seamless experience." – corporate.zalando.fi (2023)

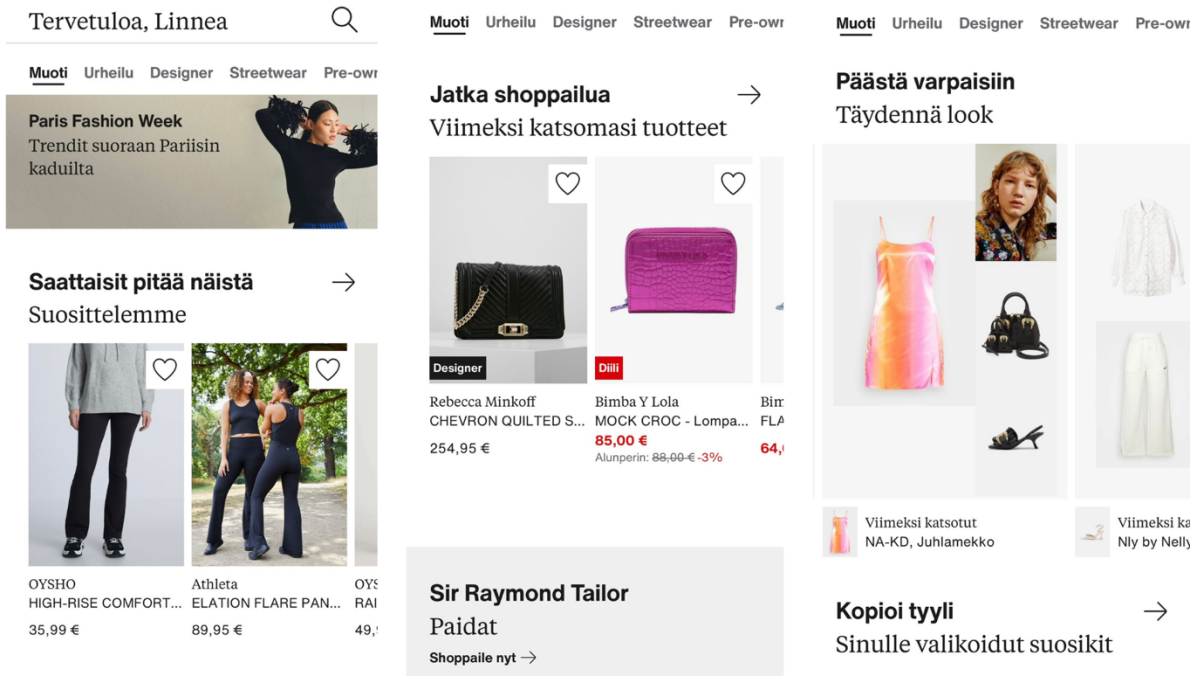

Figure 6. Screenshots from the front page of Zalando's app.

The figure 6. above displays three examples of recommender systems integrated as a part of Zalando's seamless shopping experience. The two first being item-based recommendations using a combination of collaborative filtering and content-based filtering as types of techniques used by recommender systems (Braun, 2016). The third screenshot displays an example of Zalando's machine learning tool Algorithmic Fashion Companion (AFC), a digital outfit recommendation tool, that uses the customer's pervious purchase data and items of interest to generate outfit recommendations in real-time (Marr, n.d.).

The above figure was shown to the participants in the final part of the interview, to exemplify types of recommender systems in online fashion retail.

3.9 Reliability and Validity

Reliability and validity are some of the classic evaluation criteria used in quantitative research (Eriksson & Kovalainen, 2015). To ensure reliability in qualitative research, Eriksson and Kovalainen (2015) emphasize the establishment of a degree of consistency in research. Validity in qualitative research can be ensured through analytic induction and reflexivity, as well as triangulation (Eriksson & Kovalainen, 2015). To create reliability in semi-structured interviews

the interview guide must be structured enough for the responses to be comparable. The qualitative interviews of this study followed a semi-structured interview guide, which included predefined questions presented for all participants. However, it was up to the participant to interpret the questions. To increase reliability, the interviewer needs to be neutral enough to not create bias in the responses.

Qualitative interviews can be audio-recorded for convenience and to ensure the accuracy of the collected data (Harvey-Jordan & Long, 2001). The researcher should make efforts to reduce possible error and bias to strengthen the validity and reliability of the study (Harvey-Jordan & Long, 2001). All interviews are recorded and transcribed, to keep a record of all collected data, whether they be of importance or not.

As convenience sampling allows for statistical assessment of sampling error and statistical validity, the results cannot be generalizable outside the participant group (Stratton, 2021). Since the research studies consumer impressions of the ethical dilemmas of recommender systems, the results should not be extended to a general population (Stratton, 2021). The aim of the research is to study the impressions of Generation Z consumers, to provide thought for more in-depth research in the future.

To increase reliability, the semi-structured interview guide includes definitions of terms, such as privacy policy, first-party data, and third-party data, perquisite to some questions. The aim of the definitions is to provide the participants with necessary information about the topic, without guiding their answers.

3.10 Research ethics

While conducting the research, a certain amount of thought should be given to its ethics. As Guthrie (2010) describes, a code of ethics includes principles of behavior that should be applied to the research. First, the participants should be asked to give permission and consent to participate in the research (Guthrie, 2010). Before the start of the interview, the researcher should provide the participants 1) the purpose of the research, 2) insight on the use of the analyzed results, 3) answers to possible questions regarding the research, 4) the right to refuse to participate, and 5) the right to withdraw at any point with respect (Guthrie, 2010).

Confidentiality should also be implemented into the research, by allowing the interviewees to refuse interviews if wanted or to only answer specific questions (Guthrie, 2010). The participants should be entitled to privacy, by deciding how much of their lives they want to expose to you (Guthrie, 2010). The answers and responses should be anonymized, and no information about the participants should be revealed in any way that might allow them to be identified (Guthrie, 2010). From an ethical perspective, feedback should also be provided if needed, as well as the results of the interview (Guthrie, 2010).

This ethical conduct was implemented into the study, and the code of ethics described above was presented to the participants. If the participants thereafter wished to withdraw from the interview, their responses are not included in the study. However, none of the interviewed participants wished to withdraw from the interview.

4 Results

In this chapter, the interviewees' comments are discussed in form of themes that were identified from the discussions. The interviews were structured by the themes identified in the conceptual framework, and therefore, these themes were also present in the discussions. However, comparing all the gathered results, new themes were identified. Ease of use, sustainability, and transparency were themes that were largely present in the discussions and impacted the consumers' intention of purchase and trust towards the websites. All quotations have been translated directly from Finnish to English. Some nuances in the answers could have changed during the translation process.

4.1 Ease of Use

Many of the participants mentioned ease of use as an important feature of a webshop. Cleanliness, simplicity, and clarity were actively mentioned as synonyms for ease of use. As large online platforms, such as Zalando, have large selection of items, it becomes important for the consumer to navigate easily on the platform and find the items they are looking for.

The site must be usable for a smooth shopping experience. Participant Kajsa pointed out that the appearance of the website must be clear enough to shop smoothly. She also goes on to mention the importance of a smooth and easy payment process, meaning she could order the items of choice with only few clicks. Ease of use was therefore not only seen important from a visual aspect, but also from a perspective of an easy and fast order process. A smooth and easy order process includes trusted payment providers, and customer information is filled automatically for the consumer. Participant Lisa shared the same thought of the preferred online platform to be as easily navigable as possible, and that items could easily be found.

The appearance of the website is important and must be clear enough for you to shop. Then, as soon as the transaction takes place, the payment process also must be really smooth – so I can just shop the goods with one click, choose the payment method, and then that's it! I don't need to start filling out any information. - Kajsa

When asked about what thoughts recommender systems and the use of personal data evoked among the participants, ease of use was also mentioned multiple times. The use of first-party data was accepted, because it could ease the shopping experience by filling out order information based on previous orders and personal information. Like Amanda's thoughts regarding an easy order process, even Erik mention pre-filled customer information in the order process to be helpful.

As unethical information use? I don't know, maybe if the site would ask you for your location. Of course, if you were to create an account on a website, for example an online store, I think it is nice. It makes the ordering easier when I already have my information filled out ready. - Erik

Simultaneously, ease of use was seen as a clear advantage of recommender systems, when presented with an example. Most of the participants viewed recommender systems as tools that facilitate and ease their shopping experience and search process. It was also mentioned to serve the customers better online. The participants enjoyed the fact that the systems have often been capable of recommending items that resemble their style, therefore making shopping easier. Referring to the large selection of clothes on Zalando's online platform, Lisa could not stand most of the clothes available. Therefore, she found recommender systems to ease her shopping experience, since the recommendations would oftentimes, please her eye. That way she would not need to browse through large categories to find e.g., one pair of suitable jeans. Participant Amanda could identify both positive and negative aspects of recommender systems when presented with an example. Many times, the recommendations would ease her shopping experience, but she still found it creepy for the system to know her purchasing preferences so well.

Of course, it's nice, or maybe it's useful if you don't know exactly what to look for, and often the recommended products are nice and suit my style. It has a bit of a dark side as well that the system knows so much about you, but then again it is also making shopping easier. - Amanda

4.2 Sustainability

Another big theme discussed by many participants, regarding especially trustworthiness and untrustworthiness, was sustainability. Many interviewees identified sustainability as a value

that guides their decisions and purchase behavior. Sustainability was also often mentioned as a disadvantage of recommender systems; the attempt to grow conversion rates and increase the consumers' basket size encourages to overconsumption. Both Amanda and Emilia viewed the effect of recommender systems to be negative from a sustainability perspective. While the systems could recommend them items, they preferred, the recommendations were out of sync with their needs. In this consumer society recommendations are everywhere and ultimately, they could be seen to boost overconsumption, leading to more deeper issues of over-materialism.

The disadvantage is perhaps a type of pointless consumption and shopping, where you end up buying things that you might not necessarily need when they are suggested to you. You don't feel so good about buying new clothes and things, and then the site suggests more and more for you it becomes a bad cycle. - Emilia

However, many of the participants still mentioned they liked recommender systems and how they could ease their shopping experience, simultaneously as they recognized the aspects of unsustainability. Some participants agreed, that although they are aware of the unsustainable issue recommender systems create, they do not feel the issue personally. Especially participant Solveig was confident in her purchase decisions. She mentioned to make enlightened purchase decisions herself, and the issue of overconsumption and fast fashion would not apply to her. Meaning, she found the recommender systems generally unethical.

I see it as perhaps a problem in that it kind of encourages ordering more and more and more, and of course it's unethical. But I don't really feel that they affect me personally, because I feel that I do pretty much so-called enlightened purchase decisions. - Solveig

Related to the issue of overconsumption, the issue of addiction was also mentioned in the discussions. The recommendations encourage consumers to purchase products abandoned in their shopping cart, as well as products the consumers were previously browsing, but did not add to their shopping cart. Participant Solveig even discussed often ending up in a loop, where she would continuously look for same items in the recommendations, but never truly buy them. She described to have browsed for a sports jacket of a specific style on Zalando for years that the systems would continuously recommend for her. She would, however, not purchase the sports jacket as the selection of similar sports jackets was still too large.

Getting addicted to browsing, was also seen as a possible disadvantage of recommender systems. One participant called this the "Tinder effect", where you keep swiping and browsing recommendations, in hopes of always finding something better. Tinder is a popular dating app, where users swipe people either left (dislike) or right (like). Oftentimes people get addicted to the effect of swiping and keep swiping in hopes of "maybe the next swipe is good".

You can get addicted to the browsing itself. That can also be problematic. You just browse pages for 4 hours; I think that can be problematic. - Solveig

4.3 Transparency

When discussing data collection and data use, as well as whether recommender systems can be seen as ethical or unethical, transparency was often brought up. Many interviewees felt that transparency in personal data use, was a key element to whether it could be defined as ethical. Participant Lisa liked the that she knows when and how her personal information is collected and how the data will be used, and to have the opportunity to read more about her personal data use. She was also aware of the GDPR regulations of the EU and defined ethical data use as transparency. In her words, ethical data use could also imply unethical behavior, if the company was transparent of it as well as willing to change their behavior in the future. Stina agreed in the sense of transparency; for the use of her personal data to be considered as ethical, it should be expressed as clearly and honestly as possible.

At the EU level, the fact that you have the right to your own data, and that it is used for good and proper purposes can be ethical. I also think it is ethical for companies to be transparent. It is an administrative responsibility to also be open about what should be done but cannot be done by the company yet. But they have taken that into account and are trying to improve. That they are also transparent in terms of communication. – Lisa

Transparency was clearly a current issue in data privacy. Many participants were unaware of how websites could use their data, and unaware of the laws and regulations of data collection and data use. The feeling of being unaware also resulted in feelings of fear and anxiety as the participants were not aware of how their personal information could and should be used. In contradiction to the fear of being unaware, many participants still admitted they automatically consent to all cookie consent banners, and rarely if never read the company's privacy policy.

4.4 Unawareness of Data Privacy

In the responses of the participants, clear unawareness of data privacy and regulations could be identified. Stina reported recommender systems creating an unsafe feeling, and defined recommender systems as unethical, since she could not have the possibility to approve or disapprove her purchasing and browsing behavior being followed. However, this is not the case especially for e-commerce websites within the EU. It is directed for companies to use GDPR banners, where consumers can choose how their personal data can be used. Regardless of whether sites like Zalando do use the necessary GDPR banners and approvals, in this case the recommender systems would still be defined as unethical from the perspective of the consumer. In contrast to Stina, Amanda was aware of the existing GDPR regulations and identified that she had the control over the collection and use of her personal data. She continued to define recommender systems as unethical, if the website were to act against what is described in their privacy policy. Lotta shared the thoughts of Amanda, and recognized the existence of data regulations, but still questioned on what level the websites truly stayed within the permitted amounts of data collection. She stated that the transferring of data between third-party apps was questionable and nontransparently communicated to the consumers.

Third-party data raises a bit of doubt when for example Google monitors your visits on certain sites, then the information is transmitted to other companies. Even though there are certain regulations about what is allowed and what is not allowed, how much do they really stay within the permitted amounts? How much data is being transmitted that should not be? So yes, all that data transferring and data collection is questionable and nontransparently communicated to consumers, how it really works. Does anyone even know? - Lotta

While many of the participants had concerns about their data privacy, some of the participants were clearly unaware current data regulations, and how a company should present and explain the collection and use of user data. The company or website should provide the needed information in their privacy policy, and oftentimes consumers on e-commerce platforms need to accept the privacy policy and terms of use to finish the purchase. But as stated above, few people take time to read the company's privacy policy. The issue was clear in Kajsa's response to whether the use of her personal data could be seen as ethical or unethical. She accepted the use of first-party data for companies like Zalando to create recommendations and ease her shopping experience. However, the process of data being transferred between third parties was

unclear. Kajsa identified that there must be some laws regulating data collection and use between third party apps, but was clearly unaware what the regulations were, as well as how she could reach information regarding the regulations.

If I visit another site, how can I know they have not received my information from Zalando? Is it possible? It could be. Nowadays there is really no way to prevent it. But I don't know the laws of those issues. The consumers just consume, and don't think much of it. In other words, there must be some law that regulates it. – Kajsa

In contrast to the opinions of the interviewees, companies or websites can forward specific user data to third-party apps. The knowledge of what information is being transferred and to which third-party apps should be described in the company's privacy policy. The privacy policy should also be visibly available for the users of the website. In Europe, the collection and use of user data is largely controlled by the GDPR. To increase transparency and knowledge of data regulations, GDPR and privacy policies could be presented more clearly to the users.

In addition to participants who were clearly unaware of the current data regulations, some of the participants were very aware, but admitted they do not still feel as if they have control over their personal data. The participants expressed, that as there already was so much personal data out there of them, there is ultimately no way of controlling it. Similar thoughts can be identified for the respondents above; they do not want to share their private information, it feels wrong, but they are unaware of how to affect the issue if possible.

Some of the participants recognized the issue of data collection, and they had mixed feelings about the ethics regarding the use of their personal data. However, they felt as if big data collection is normalized in this society. As participant Kajsa mentioned she was unaware of whether she had a choice of not letting the site collect her data. Yet she found it normalized, since every site and app from all devices already collect so much data of their users. There is constantly so much data being collected, that controlling it becomes almost impossible. The respondents feel as if their power to control the collection and use of their personal data is out of reach. Solveig described the issue of big data collection as "*Game over"*:

I've already given permission for it so many times, that I am somehow relaxed about it. I know that there is already so much of my data being available that it's game over at this point to start think more deeply about it. I don't have TikTok because I find it ethically

questionable. But I don't know, on the other hand, how much better other online platforms are at protecting my data. - Solveig

4.5 Discrepancy

The structure of the interviews allowed to identify discrepancy in the opinions of the interviewees. Before mentioning recommender systems, the participants answered questions generally linked to their thoughts on the ethics of data collection and data use. It was clear to notice, that many participants had more negative views on the collection and use of their data before they were presented with an example of why their data is collected and what it is used for (in this case recommender systems). Many of the participants did not like the feeling of their personal data being stored on the website, yet they enjoyed personalized recommendations.

Discrepancy was especially present in the one group interview, with participants Sebastian and Emilia. When asked about unethical data use, Sebastian explained to not like the fact that data on his shopping behavior is available within the sites. He did not enjoy being followed. The same thoughts applied to Emilia, who described to find the collection and use of first-party data "*scary*". Later when the same respondents were asked about their thoughts on recommender systems Sebastian found them to be a form of positive pressuring, making his shopping experience easier. Meanwhile Emilia pointed out that since the recommendations come from her own consumer choices and previous behavior, it is acceptable.

I don't really like the fact that there is so much information about my activity online or in shopping habits in general. It's a bit like someone would know the full extent of my identity. It doesn't feel that fresh. I don't like it that much. - Sebastian

It is positive pressuring, of course it makes it easier for you. If you, for example have a party to plan and browse through party decorations the previous day, that the next day you can have recommendations ready for you. Of course, it makes it easier. – Sebastian

The respondents could not connect the two thoughts; that user data is collected for the recommender systems to function properly, and that the systems base their functions on the collected data. Discrepancy was also identified in how the respondent's values meet their

actions. Respondent Lisa described sustainability and ethical values as important for her, but simultaneously acknowledged she does not always act accordingly. She would say she recognizes the issue and the unethical perspective of recommender systems, but still uses recommender systems herself to some extent.

4.7 Awareness of Recommender Systems

When presented with the question:" Are you aware of the use of recommender systems on e-commerce websites?" almost none of the respondents answered positively. However, after presenting the example of three recommender systems on Zalando's website (Figure 6.), many participants recognized seeing similar elements on Zalando's website and other websites as well. Some of the participants did not see the recommender systems as separate elements, but rather as a dynamic entity. For example, Kajsa and Amanda both recognized seeing similar recommender systems on Zalando's site or similar sites. They could identify the correlation of the recommended products being products they had browsed one or two days before.

Yes, and I am very aware of those. Because after each shopping experience, always pops up these "You looked at these before" and "For you. You receive personal service, of course it lowers your barrier of purchasing items. - Kajsa

Referring to Zalando's site, many participants had noticed a heavy use of recommender systems on the front page. This made the participants question the amount of data the site collects of them. Participant Lotta mentioned to have noticed products she had viewed on Zalando's site on other sites as well, which made her wonder if her data was being transferred to third parties.

4.8 Thoughts on Recommender Systems: Ethical or Unethical?

Whether the recommender systems could be perceived as ethical depended on many factors. One respondent argued, the system itself cannot be neither ethical nor unethical, but rather it depends on how the system is being used. For many participants, whether the system was seen as ethical or unethical, depended on if the user had given consent to the collection and use of their personal data. Lisa felt that the system itself could not be issued, but rather who decides how the system would be used, and for what agenda. Amanda argued that whether

recommender systems could be defined as ethical or unethical depends on how properly the site follows their privacy policy. If the consumer had not consented to the collection of their data, and yet the website preceded to collect the consumer's data, it could be identified as unethical. If the consent was respected, it could be identified as ethical.

In this case, I would say it is a bit difficult to say whether recommender systems are ethical or unethical. If you do not consent to the data collection, and it still does it, then I would say it is unethical. If they still collect data that you did not give permission to collect, then it is unethical. - Amanda

The question raised mixed views, among some participants. Previously, participant Sebastian had described deep negative feelings towards the collection and use of his personal data. Still, he seemed to describe recommender systems as ethical, and as a "win-win" type of situation. He defined recommender systems as ethical, since they help the company sell their products to the consumers', who simultaneously find the products they are looking for. Participant Lotta simply defined recommender systems as rather unethical, because of the amount of data they store on each user.

Hard to choose one or the other, maybe it's more unethical because there's so many data that is being stored on the site. So, if I have to choose, I will say more unethical. – Lotta

4.9 Experiences of Filter Bubbles and Faulty Recommendations

Some of the issues that surfaced during the interviews, were the experience of filter bubbles and the narrowing effect of recommender systems. Participants identified that products of different style, than their usual, were often left out of their personal recommendations, both on the front page as well as on product pages. Kajsa explained to have experienced the narrowing effect multiple times, since the recommender systems would always recommend certain products to her. She described the narrowing effect to affect her shopping experience negatively. Emilia, on the other hand, expressed that the recommendations would show the same styles she had already purchased. Whenever she wanted clothes of different style, the recommendations could not suggest anything suitable. Lotta had experienced the narrowing effect on category pages as well, meaning the order of the products on category pages were

sorted according to her personal recommendations. As she favored ease of use when shopping online, the narrowing effect on category pages affected her shopping experience negatively.

Yes, certainly to the extent that sometimes when I look through categories, the order of the items displayed are often the same items I have browsed before. So of course, I can see products outside the recommendations, but then I must scroll down all the way to the end of the page. In that case I will most likely be left out of those products. - Lotta

At times the recommendations were perceived negative, because they were faulty in terms of style or included items the participants had already purchased. In some cases, the recommendations were also perceived as negative, if they displayed sensitive or personal items, such as gifts for friends. It could cause an awkward feeling for the user if someone else saw the personal recommendations. Lotta described to find recommender systems to ease her shopping experience in most cases, but also felt as many suitable products were left out of her personal recommendations, because the system would not identify these products as sellable.

Well, the benefits are that it can make your own shopping easier, and you can find products that you might like more easily. But at the same time, it might leave out a lot of products that might not sell. Also, if you try to buy something for someone as a surprise, and then the product pops up on your screen, it might make the situation a bit awkward for the other person. It can make certain situations too transparent. – Lotta

Faulty recommendations were identified by Lisa especially. She mentioned to often receive recommendations on products she did indeed find appealing but would never truly buy. However, faulty recommendations did not bother Lisa, because she does not want to buy anything extra. She noticed the faultiness but did not feel left out of products more suitable to her style.

4.10 Trustworthiness of E-commerce Sites

For most of the participants, trustworthiness of an e-commerce site was identified by appearance of the site, reviews and social recommendations, the appearance of verifications and already trusted payment and logistics suppliers, and general information about the company, such as contact information. One participant also mentioned trustworthiness depended on whether the company was Finnish or Nordic. Participant Kajsa found

trustworthiness of the site to depend on popularity, experiences, and appearances. She also described general information about the company as well as how values of sustainability were displayed on the site to reflect the company's operations. Lisa found trustworthiness through a large customer base. If the company operated in the Nordic countries, it could also be defined as quite trustworthy, according to Lisa.

Good question. Probably depending on how popular the site is and whether your friends have shopped there, and what kind of experiences they have on the site. Appearances too. Information about the company is also important, and how they display sustainable values. It says a lot about the company's operations. - Kajsa

Specific functions that could demonstrate trustworthiness were in many cases the display of company values, sections that describe the company (such as "*About us*"), overall visuals of the site; genuine product images, correct translations, and known and trusted payment services. Online platforms without proper Finnish translations were in many cases identified as untrustworthy. Most of the times, the participants defined trustworthiness through their own experiences with the webshop. If the previous purchases were successful, the next purchase was likely to be successful as well.

4.11 The Importance of Previous Experiences and Reviews

Reviews and previous experiences had a large effect on the choice of webshop, trustworthiness, and untrustworthiness. Experiences could be personal experiences; many participants chose where to shop based on their own experiences with the sites, or social experiences and reviews heard from friends and family.

In cases where the participants had to question whether a site could be trusted or not, the participants described to look for outside reviews, such as reviews on search engines (Google). Some of the participants preferred reviews outside the website itself to be a better source to evaluate trustworthiness of a site than reviews on the website. If the reviews were positive the site could be trusted. If the reviews were overall negative, the participant chose to shop elsewhere. For Lisa, the reviews written in Finnish made a bigger difference than those written in other languages.

I have had some unreliable experiences. Last Halloween I ordered a fake piercing from a German webshop, and it was somehow a bit shady, and the payment process itself was

something I was not used to. At the end everything went well, but when I began to question the shop's reliability, I had to look at reviews on Google. I found a few reviews also written in Finnish, so I felt like I could trust the site after all. - Lisa

4.12 Nudging in Recommender Systems: A Rhetorical Device?

The participants did not clearly bring up the effect of nudging in their responses. It was also purposely left out of the interview guide, as the question might create biases in the responses. However, the appearance of nudges was notified by some consumers in recommender systems as rhetorical devices.

Participant Kajsa was aware of recommender systems on e-commerce websites and noticed their use of rhetorical and persuasive speaking. She brought up how recommender systems on e.g., Zalando's site use sentences such as, "For you", to address with the informal T-form or address someone in their first name. She identified the recommender systems utilized rhetorical devices to lower the consumer's purchase barrier and to make the consumers feel like they received personal assistance.

Yes, and I am very aware of them. Because there are always many categories that pop up with sentences like, "You looked at this last" or "Just for you" in efforts to make it look like they are personally addressing you, and it is a form of rhetorical device to influence people. You are spoken to, you feel that you have been considered. You get personal service, and it lowers the purchase barrier. – Kajsa

The effect of nudging was also present in the consumers' thoughts on recommender systems. Nudging in recommender systems created feelings of pressuring and annoyance. Participant Erik discussed how recommender systems can be both annoying and useful. He expressed to not enjoy the pressuring to purchase. Participant Sebastian, however, experienced the effect of nudging on recommender systems to be a type of positive pressuring. Emilia, who was part of the one group interview with Sebastian viewed the pressuring as negative. Lisa recognized the pressuring could ease someone's shopping experience but was still more concerned about the large picture; how nudging on recommender systems controls the behavior of individuals in the perspective of sustainability and encouragement to overconsumption.

Sometimes annoying but sometimes quite convenient. 50/50. What's annoying about them is that if you've viewed a product and then you've walked away from it, decided that you don't want it, then it keeps popping up in your eyes, so maybe that's why it is annoying. – Erik

4.12 Summary of The Results

The interviews presented interesting findings. Almost all consumers emphasized the importance of ease of use. It was both seen as an important feature on an e-commerce website, as well as a function that guided consumers towards certain sites. Cleanliness, simplicity, and clarity were mentioned as synonyms describing the importance of ease of use while shopping online. On large online platforms, such as Zalando, the navigation had to be easy for the consumers to find the products they needed. The consumers seemed to also appreciate an overall smooth shopping experience, extending all the way to the final step of the purchase – the order process. The use of first-party data was allowed and demanded especially by returning costumers, to ease the finalization of the order. The role of recommender systems also had an important role for a smooth shopping experience. Recommendations suitable to the consumers style could facilitate the choice of products.

Sustainability was of importance on deciding whether the site could be perceived as trustworthy. It was also a value that many consumers identified to guide their decisions and purchase behavior. From a sustainability perspective, the consumers viewed recommender systems as negative since they could encourage consumers to overconsumption. Recommender systems could also be seen to lead to addictive shopping behavior, which out of a sustainability perspective increasingly affected overconsumption. This negative perspective on recommender systems was mentioned by many interviewed consumers as a general negative effect. Some of the consumers viewed themselves as conscious shoppers, meaning overconsumption did not affect them.

How transparently the collection and use of data was presented on the website could determine whether the site was ethical or unethical. The same applied to ethical impressions of recommender systems. The consumers experienced issues in data privacy, as many were unaware of what data could be collected of them, how the collected data could be used, and how the information regarding data privacy could be accessed. The unawareness seemed to

cause emotions of fear and anxiety in the consumers. However, most of the consumers still admitted to automatically consent to all GDPR banners and notifications regarding the privacy policy of the site. The consumers did not want their information to be shared but felt like they had little control in affecting it. Same sense of no control was present in affecting what data could be collected out of the consumers.

Some discrepancy was noticed in the thoughts of the consumers, regarding their views on data collection and the effects of recommender systems. It was clear to notice the consumers had more negative views on the collection of their personal data before presented with an example of recommender systems on Zalando's site. The consumers expressed to not enjoy the fact that their data was being collected. Yet, the same consumers still enjoyed personalized product recommendations. It was also unclear for many consumers, what data the recommender systems need to function and produce suitable recommendations.

The effect of nudging was viewed as a rhetorical device, lowering the consumers' purchase barrier by addressing them with the informal T-form or addressing someone in their first name. Other consumers viewed nudging on recommender systems as annoying or pressuring, which positive or negative.

Whether recommender systems were viewed as ethical or unethical depended on many factors: 1) how the system is used and 2) if the user had consented to the collection and use of their personal data. To some extent, the recommender systems were also defined as unethical, due to big data storage.

As disadvantages of recommender systems, many of the consumers identified issues with the narrowing effect, meaning they ended up receiving the same recommendations repeatedly. This meant the consumers felt like they ended up in a loop, where they would constantly browse the same items without purchasing them. Some of the consumers had issues with not having the possibility to view products outside of their usual product preferences and style. The consumers preferred an easy shopping experience and having to browse too much to notice products outside their typical range of style felt too troubling. The narrowing effect as well as not receiving recommendations outside their preferred style are examples of filter bubbles. Recommendations were also seen as negative if they were faulty in terms of style, items already purchased, or if the recommendations featured sensitive or personal products the consumers

did not wish others to see. These are also typical examples of issues with content-based and collaborative filtering algorithms.

Overall, the trustworthiness of e-commerce websites was identified by the consumers by the appearance of the site, reviews and social recommendations, the visibility of verifications and trusted payment and logistics providers on site, and general information about the company. Also, some of the consumers defined trustworthiness of a site by whether the site or company was Finnish or Nordic. As specific functions, the display of company values, sections that describe the company, and visuals on the site (genuine product images, correct translations, and known and trusted payment services) could indicate the site as trustworthy. Sites without proper Finnish translations were largely identified as untrustworthy.

Previous experiences and reviews on the website were also of importance for the consumers. They were mentioned to affect the choice of webshop and whether the site could be defined as trustworthy or untrustworthy. Many consumers searched for reviews through search engines, such as Google, where positive reviews especially in Finnish could increase trust on the site, whereas negative reviews overall could decrease trust on the site.

5 Analysis

In this chapter the results are analyzed with the conceptual framework as the premise. The themes and observations identified from the interview data is included in the analysis, to create a holistic picture of the impressions of the selected Gen Z consumers, and to answer the defined research questions. At the end of the chapter, the previously defined conceptual framework is compared with the results and identified themes raised in the interviews. After the analysis, an updated version of the conceptual framework is presented.

5.1 Choice of E-commerce Platform: Concerns of Gen Z Consumers

As Ayuni (2019) describes the main concerns of Gen Z consumers include information, aesthetics, ease of use, reliability, privacy, and security. Based on the results of the study, the Gen Z consumers based their decisions on previous (personal and those of relatives and acquaintances) experiences, ease of use, recommendations, price, and aesthetics, when choosing an online platform to shop. The consumers described to mainly trust their own experiences on an online platform. If the previous experience was positive, the consumers could trust the next order to be successful as well. With a large selection of online platforms, even price was a clear competitive advantage. However, many consumers actively discussed choosing where to shop based on their personal values. Sustainability was mentioned as a strong value for those, who did not choose a shop based on price.

Aesthetics, and more precisely a clear layout, was often mentioned by the consumers as functions they viewed to be important on an e-commerce website. A clear layout was mentioned together with the navigation's ease of use, as the clear layout would help the consumers navigate faster to the wanted items and finally to the completion of the purchase.

5.2 Trust and Perceived Risk

A trustworthy e-commerce site was in many cases identified by recommendations and reviews online. The layout of the website was also of importance; genuine images and product information, correct and proper translations, as well as general information about the company, could help the consumers decide whether the site could be perceived as trustworthy. Known

and trusted payment methods increased the consumers' trust on the website. Many of the consumers felt hesitant to add their credit card information on the site. The popular payment methods used in Finland, such as Klarna, Paytrail, and Mobilepay, do not need the consumers' credit card information. This emphasizes the importance of domesticity when deciding whether a site could be trusted or not.

Most of the interviewed consumers had no untrustworthy experiences of shopping online. The same factors of trustworthiness could, however, be identified also as what could be viewed as untrustworthy. If the site had no information about the company, no good reviews available, unknown brands, and different payment methods than usual, the site could be viewed as untrustworthy. Especially unusual payment methods could indicate the purchase to be of risk. According to Kim et al. (2008) perceived risk affects the consumer's purchase intention negatively. The model of Kim et al. (2008) highlights the importance of trust in purchase intention. According to the interviewed consumers, a clear layout and ease of use were significantly of more importance than trustworthiness.

5.4 Transparent and Understandable Terms of Conditions

Generally, many of the interviewed consumers were concerned of the collection and use of their personal data. As Limbu et al. (2012) describe giving out private information can be seen as a delicate matter. Consumers need to rely on the retailers' promise of correct data use. The consumer's trust on the website is also dependent on how transparently and understandably privacy issues are addressed.

Based on the interviews, transparency could be identified as a key element to whether data use and collection could be identified as ethical. According to Limbu et al. (2012) the consumers must rely on the retailer's promise that their private information will be treated with respect, given that promise is given. The consumers expressed their doubts towards whether the online retailers truly acted according to their promises on their privacy policy. Also, Limbu et al. (2012) states that it is rather the positive evaluation of ethical behavior that leads to more consumer trust of the online retailer. Solely the ethical behavior itself does not seem sufficient to make consumer purchase or return to the online platform (Limbu et al., (2012). One consumer expressed the importance of the online retailers to be transparent in ethical behavior.

The behavior did not need to be ethical to this day, if the retailers were aware of their faults and had expressed a plan on how they would achieve more ethical behavior.

Some of the consumers were unaware of the company's privacy policies and current GDPR. These consumers could understand the use of first-party data, as it was clearly only for the use of the specific company or website. The collection and use of third-party data, however, was more conflicted. Consumers could not explain or comprehend how, why, and where their data might be transferred. Many of the consumers still admitted to always accepting the privacy policies and terms of conditions, since "No one reads them". This is a clear indicator of the need for privacy policies to be more understandably expressed for the consumers.

A few consumers, who identified as frequent shoppers (12+ purchases a year), understood the issues giving out their personal data could have e.g., in terms of data breaches. The frequent shoppers mentioned to enjoy personalization while shopping online. These shoppers could also not mention issues with giving out their personal data, except for one consumer, who was aware of how their data could be used or misused. To increase the consumers' conversion rates, websites should therefore be more transparent on how the collected consumer data is used and act accordingly.

5.5 Ethics and Concerns of Data Privacy

The consumers defined ethics either through personal values, or individual as well as societal values and norms. As ethical data use, several consumers recognized the importance of transparently expressed data use, and that the sites act accordingly. Data use could be seen as ethical when it was only kept first-party. The use of third-party data and sharing the consumers' personal data elsewhere, was defined as unethical. Only one consumer defined a website acting against their privacy policy, as unethical data use.

Whether the recommender systems were defined as ethical or unethical depended more on how the systems worked. Many consumers expressed their feelings of not wanting to be followed, as well as their undesirability of the sites to have such large amounts of personal data of them. Some discrepancy was identified in these cases, as the same consumers still enjoyed personalized recommendations. According to Limbu et al. (2012) how ethical the behavior of the website is perceived shapes the consumers' trust towards the site. This was true in many cases.

Milano et al. (2020) describe the issue of privacy risks to occur 1) when data are collected or shared without the user's explicit consent, 2) once data sets are stored, they can potentially get leaked, 3) as the system can draw inferences from the data, and 4) the ability of the system to construct a model of the user based on gathered data of other users. One of the consumers identified the risk of data breaches, as a situation where the use of their personal data could be unethical. Many of the consumers identified some recommendations as faulty, which might also be the case of data models constructed of other users. It could, however, also be the cause of simple faults in the machine learning algorithms.

5.6 Issues with Recommender Systems

The consumers who frequently enjoyed the use of personalized recommendations, however, often recognized faulty recommendations. This was also the case for those consumers, who did not particularly benefit of recommender systems. Faulty recommendations and too narrow recommendations, stem from issues with biased collaborative filtering models and faulty content-based filtering models (Stinson, 2020). Zalando uses actively of both collaborative filtering and content-based filtering models (Braun, 2016). The issue with collaborative filtering algorithm is products without any purchasing history (Stinson, 2022). As the algorithm has no experience of anyone purchasing the product, the product will easily be left out of recommendations. Since ease of use was one of the most important aspects for the consumers to choose where and how to shop online, some of the consumers felt as if they did not come across any new products, unless they browsed the entire category. In the case of Zalando, this is difficult and time-consuming because of the large selection of the online platform.

Collaborative filtering algorithms might offer recommendations too narrow than the full range of what the user might like, which in the case of the interviewed consumers also led to over-specialization. In the case of one consumer, the appearance of filter bubbles and homogenization of collaborative filtering algorithms made her browse for sports jackets for years, without finishing the purchase. Thereby, the narrowing affect seemed to affect the consumers' shopping experience negatively.

Following the recommendations of the recommender systems is claimed to slowly lead the users into filter bubbles, where the users become isolated from a diversity of viewpoints or content (Pariser, 2011; Aridor et al., 2019). Many of the consumers identified ending up in

filter bubbles, and only received recommendations close to their style. Nguyen et al. (2014) claim that by choosing the recommended items users lessen the risk of a filter bubble, as the narrowing effect would be mitigated for users who followed the recommender system. The consumers Kajsa, Sebastian, Emilia; Solveig, and Lotta were all aware of filter bubbles and had experienced them while shopping on Zalando's website. The consumers who actively used recommender system were all the same, except for Lotta. Compared to the results of Nguyen et al.'s (2019) study the mitigated narrowing effect for those following the recommendations did not apply to the results of this study, as the consumers who identified ending up in filter bubbles were the same consumers who actively used recommender systems.

5.7 The Effect of Nudging

As Schmidt and Engelen (2020) describe, nudges work by triggering cognitive heuristics and fast and less conscious psychological mechanisms. In its essence nudges aim to improve the decision-making process of people by changing how options are presented to them. Among the consumers, the effect of nudging was noticed as a rhetorical device, where the choice of words could affect the consumers' barrier of purchase by lowering it. It was described to give the expression of more personal customer service, compared to e-commerce generally.

Jesse and Jannech (2021) mention that recommendations are designed to help the users find relevant items of interest and to avoid situations of choice overload while supporting organizational goals. They can be viewed to have effects on the behavior of the consumers as a form of behavioral intervention (Jesse & Jannech, 2021). Consumers identified the aim of helping, but concerns of how nudging could control individuals regarding a sustainability perspective. It is claimed that nudging can appear to conflict with moral values, such as freedom of choice, psychological autonomy, and absence of domination (Schmidt & Engelen, 2020). Some of the consumers viewed nudges of recommender systems as annoying and pressuring.

5.8 Revision of The Conceptual Framework

The conceptual framework defined earlier in this study was applicable to the results in many cases, but new findings were also found.

Ayuni (2019) defined the **main concerns of Gen Z consumers** on online shopping to include: information, aesthetics, ease of use, reliability, privacy, and security. The results of the study presented previous experiences (personal and those of acquaintances), ease of use, price, aesthetics, and sustainability to be of importance. While choosing where to shop, the interviewed Gen Z consumers emphasized sustainability, price, and experiences, which were new to what was previously thought. Factors, such as information, reliability, privacy, and security were of importance when defining trustworthiness.

Kim et al. (2008) argued perceived **trust and risk** affected the consumers' intention of purchase. Besides the above-mentioned factors, the consumers also identified trustworthiness through reviews online, layout, correct information, as well as known and trusted payment methods, with an emphasis on domesticity. No or few consumers had experiences of untrustworthy online shopping experiences. This could indicate that the consumers are aware of where to shop and can evaluate the trustworthiness of the shop. The same factors that the consumers mentioned to identify trustworthiness, were also the case for untrustworthiness. In difference to Kim et al.'s (2008) theory of the importance of trustworthiness for intention of purchase, ease of use and a clear layout were more of importance for the interviewed Gen Z consumers.

Giving out private information can be seen as a delicate matter and affect trustworthiness (Limbu et al., 2012). The positive evaluation of ethical behavior leads therefore to mor consumer trust (Limbu et al., 2012). This was dependent on how transparently and understandably privacy issues are addressed by the website and the retailer. The consumers defined transparency as a key element to whether data use and collection could be identified as ethical and expressed their doubts towards whether the online retailers truly acted according to their promises on their privacy policies.

GDPR and **privacy policies** were unclear to many of the consumers in general. The interviewed consumers accepted first-party data while the use of third-party data raised more doubts, as it was not understanded by the consumers. However, discrepancy could be found in the responses. The consumers seemed to blindly accept privacy policies without reading them, even if they had concerns about the use of their data. **Discrepancy** was also found in the case of consumers' attitudes towards the collection and use of their personal data. While the consumers presented their concerns and wished not to have their data collected, they simultaneously mentioned to enjoy personal recommendations.

Milano et al. (2020) listed the issues of data privacy to occur:

1) when data are collected or shared without the users' explicit consent
2) once data sets are stored, they can potentially be leaked
3) as the systems can draw inferences from the data
4) the ability of the system to construct a model of the user based on gathered data from other users

Issued 1, 2, and 4 could be identified from the discussions with the consumers. Ethics were defined as personal values and/or individual and societal values and norms. In the case of ethical dilemmas, recommender systems were defined as ethical or unethical depending on how the system works. The ethical dilemma of privacy in recommender systems was conflicted, as consumers did not want their data to be collected, yet the same consumers enjoyed personalized recommendations.

In the case of **biased/faulty recommendations,** Stinson (2020) said they stem from issues with biased collaborative filtering models as well as faulty content-based models. Faulty recommendations were often noticed by those who frequently used recommender systems while shopping online. This was also the case for those who did not particularly benefit of recommender systems.

Following the recommendations of the recommender system is claimed to slowly lead the users into **filter bubbles**, where they become isolated from a diversity of content (Pariser, 2011; Aridor et al., 2019). Many of the interviewed consumers had experienced some type of filter bubbles. Nguyen et al. (2014) present that by choosing the recommended items users could lessen their risk of ending up in a filter bubble. This was not the case for the interviewed Gen Z consumers, as the ones who experienced filter bubbles were active users of recommender systems.

Nudges work by triggering cognitive heuristics and fast and less conscious psychological mechanisms, in aims to improve the decision-making process of people by changing how options are presented to them. For the users nudges were identified as rhetorical devices, and mainly caused negative feelings, such as annoyance and pressuring.

Recommender systems and personalization could be identified as positive in the perspective of ease of use, since the consumers who enjoyed personalization could find their products more easily. Simultaneously, recommender systems could be identified as negative for the same

reason; those who wanted to find items outside of their typical style experienced browsing as troubling and time-consuming.

6 Discussion

The interviews were designed in a way to give the consumers space to describe their thoughts on their ethical views in general, as well as their thoughts on ethical and unethical data use. Only in the final part of the interviews, recommender systems were discussed more specifically. It was clear that the design of the interviews allowed the consumers more space to reflect over the ethics of the selected topics. When recommender systems were mentioned at the end of each interview, the consumers saw them as positive and benefitting, and had almost forgot their criticism towards the collection and use of their personal data. This allowed to identify discrepancy in their answers.

6.1 Conclusions

The purpose of this study was to study the ethical dilemmas of recommender systems in the context of e-commerce. The aim of the study was to provide perspective on consumer impressions of the ethical dilemmas of recommender systems, to help retailers understand how to serve their customers better in the means of customer centricity. To produce findings for future development of e-commerce, the study focused on consumers of Gen Z, as they are the next influential consumer group. The study focused on the recommender systems used on Zalando's website to exemplify the matter. In the introductory chapter, the following four research questions were defined:

1. How do consumers perceive the collection of data to create a more personalized shopping experience?
2. How do consumers perceive the use of recommender systems as a part of their shopping experience?
3. Is the collection of data justified to create personalized recommendations?
4. What ethical dilemmas can be identified in the use of recommender systems in the context of e-commerce?

The findings of this study indicate that consumers of Gen Z generally allow the collection of first-party data to create personalized shopping experiences. Frequent shoppers enjoyed a more personalized shopping experience, which in this case is in the form of recommender systems.

Some discrepancy was still identified in the results, as the consumers did generally not want the websites to have any private information of them, yet the same consumers enjoyed the personalized recommendations the systems created, when presented with an example. The collection of third-party data was, however, more conflicted. The consumers did not want to share their private information with third party apps.

The use of recommender systems was accepted by most of the consumers. As the interviews were designed to only present recommender systems at the final part of the interviews, many of the same consumers who felt guarded towards the use of their personal data, felt more positive about recommender systems when presented with an example. Recommender systems could be perceived as positive when the consumers wanted to find items of their style easily. Concurrently, recommender systems could be perceived as negative if the consumers wanted to find items outside their typical style range. Recommender systems were mostly not identified as recommender systems, but rather as a dynamic part of the online platform.

Whether the collection of data could be justified to create personalized recommendations depended on multiple factors. Firstly, for the collection of data to be justified, the company must transparently address in their privacy policy what data is being collected of the users and how the collected data is used. Secondly, the consumer had to give consent to the above. Overall, the collection of first-party data was more justified in terms of usability, than third-party data.

Consumers faced ethical dilemmas in the form of biased and/or faulty recommendations, filter bubbles, as well as data privacy issues. Nudging was viewed as a rhetorical device to lower the consumers' purchase barrier. It also created feelings of annoyance and pressuring, and concerns towards the effect it has on individuals.

6.2 Suggestions for Retailers

The unawareness of data privacy was clear in many cases. The study suggests how data is collected, stored, and used was unclear for the consumers. As the transparency of data use could define whether it was viewed as ethical or not, it is a key element to a more ethical online environment. The consumers longed for transparent and honest privacy policies. Therefore, data privacy should be made more available and/or visible for the consumers to increase awareness. As the consumers still automatically consented to notifications on GDPR, the issue

could be a too complicated presentation of the privacy policy. A solution could be to present the privacy policy more clearly for the consumers, in a more readable way. Especially the use of third-party apps and their relation to the website should be clarified for the users. In the means of customer-centricity, the customers' control over the use of their data should be clarified for the users.

The findings of this study indicate heavy use of recommender systems raise concerns on how much data is truly being collected of the users. The importance of sustainability should be given more attention, even in the case of recommender systems. Concerns of encouraging the consumers to overconsumption were raised in the discussions. The retailers should consider the role of recommender systems on the society, and how recommender systems could be used more sustainably to help the consumers create conscious purchase decisions. How recommender systems are displayed should also be given thought. The retailers must consider how words are displayed together with recommender systems, and what effect the rhetorical devices and nudging has on individuals. This needs to be considered increasingly from a sustainability perspective. Recommender systems can nudge the users to overconsumption, which is a present issue today.

The trustworthiness of the site can be increased by keeping the site clear and easily navigable, including the appearance verifications and trusted payment and logistics suppliers to the website, and increase reviews on site. Information about the company was also considered of importance from the perspective of trustworthiness. General information as well as transparent information about the company's sustainable values can play a role in trustworthiness and increase the amount of conscious purchase decisions. From the perspective of trustworthiness, the retailers should also emphasize the company's domesticity or Nordicness.

To ease the consumers' shopping experience, recommender systems must be further developed to lessen the effect of filter bubbles. The discussions raised issues of recommender systems in forms of faulty and narrowed recommendations. Filter bubbles can affect the consumers' shopping experience and should therefore be taken into consideration when developing recommender systems of next generations.

6.3 Theoretical and Practical Implications

The study produced new knowledge on consumer impressions on the ethical dilemmas of recommender systems in the context of e-commerce. From the perspective of customer-centricity it is important to understand what ethical dilemmas consumers experience in e-commerce and what issues do the ethical dilemmas create. The results supported previous research on the presence of ethical dilemmas of recommender systems such as, data privacy, biased/faulty recommendations, filter bubbles, and nudging. In comparison to previous research, the results of this study emphasized the importance of sustainability and transparency, which should be applied largely in e-commerce to lessen the effect of ethical dilemmas. The study suggested that data privacy was not transparent enough for the consumers, and the use of recommender systems needs be given more consideration in terms of transparency and sustainability.

In practice, the results of this study provide useful information for retailers to act in a customer-centered environment. Factors affecting trustworthiness of the website can disturb the consumers' intention of purchase. To increase the consumers' trust on the website, retailers must acknowledge the present ethical dilemmas and act towards a more ethical shopping experience. Considering the implications of overconsumption, the study presents a clear need for emphasis on the importance of sustainability. Thereby, this thesis also offered value for the end-users of recommender systems, the consumers. By acknowledging the issues of transparency and the negative feelings they create for the consumers, steps can be taken to increase the consumers' sense of control to make conscious purchase decisions.

6.4 Limitations and Future Research

Since the study focused on only the type of recommender systems used on Zalando's website, which include content-based and collaborative filtering models, the study cannot be applied to recommender systems of other types. It can, however, give perspective on the general issues consumers experience in terms of data collection and use.

The study was limited to selected Gen Z consumers. As the participants of the study were selected in the means of convenience sampling, the results cannot be generalized and applied to another consumer group. However, the results of the selected consumers imply that the topic is important to study, and discussions raised concerns that should be research further. Most of

the selected participants identified as females, and only two participants identified as male. Future research should be done with an even representation of both male and female genders, if not other genders as well.

To create validity and reliability in the responses, the role of the interviewer was kept as minimal as possible. The interview questions were formatted to create an open space for the consumers to discuss such delicate topics, such as their views on ethics. The interviews that were held one-on-one did succeed in giving the participants freedom of expressing their personal views. However, as one of the interviews was a group interview, consisting of two participants, it was clear to notice the participants mirrored each other in their responses by expressing similar thoughts on each question. In future research, interviews on the topic should focus on one-on-one type of interview settings, or additionally, have interviews in focus groups for comparison.

Finally, based on the results of the study, the effect of nudging created mostly negative feelings among the consumers. It was, however, not directly asked about in the interview guide. The question regarding nudging was deliberately left out to avoid creating bias in the responses. Nudging can be found on other elements on websites than simply recommender systems, and therefore, more research could be done solely from the perspective of nudging.

Swedish Summary - Svensk sammanfattning

De etiska dilemman i rekommendationssystem på e-handelswebbplatser:
En kvalitativ studie om konsumentintryck på Zalandos webbplats

Inledning

Utveckling av e-handel samt artificiell intelligens har möjliggjort insamling och användning av konsumentdata i stora mängder. Konsumentdata, eller användardata, används enormt på e-handelswebbplatser, för att öka konversionsprocenten. Eftersom insamling av konsumentdata innehåller stora mängder av personuppgifter och personlig information, kan det uppfattas som oetiskt på många sätt. Ur ett integritetsperspektiv kan personalisering uppfattas som oetiskt, eftersom den innebär insamling och användning av personuppgifter. Användningen av personalisering inom e-handel kan även uppfattas oetiskt, eftersom den använder sig av nudging och därmed påverkar konsumenternas beslutsprocess.

Personalisering genom konsumentdata kan ske i form av rekommendationssystem. Dessa system används av webbutiker för att ge individuell service och erbjuda konsumenter rekommenderade produkter (Schafer, Konstan & Riedi, 1999). Rekommendationssystem kan utnyttja insamlade konsumentdata och med hjälp av artificiell intelligens rekommendera lämpliga produkter för konsumenterna, och därmed förbättra konsumenternas upplevda värde och tillfredsställelse (Jain & Sundström, 2021).

Syfte och forskningsfrågor

Syftet med denna avhandling är att studera de etiska dilemma hos rekommendationssystem i samband med e-handel, ur ett konsumentperspektiv. Studien syftar till att ge perspektiv på konsumenternas intryck av de etiska dilemma av rekommendationssystem, för att hjälpa e-handlare att förstå hur de kan betjäna sina kunder bättre.

Eftersom kundcentricitet inom e-handel fokuserar mycket på att tillfredsställa kunden, blir det viktigt att förstå hur konsumenterna uppfattar de etiska dilemman kring kundcentricitet. Att

studera de etiska dilemman i rekommendationssystem är också relevant med tanke på hållbarhet och framtiden av e-handel. Stordatainsamling och användning av smarta webbteknologier, såsom artificiell intelligens, automatiseringar och rekommendationssystem kan gynna kunden i att identifiera behov i förväg, samt tillfredsställa kundens köpupplevelse. Ur företagets perspektiv effektiviserar rekommendationssystem kundernas köpväg och påverkar därför konversionsprocenten och försäljning positivt. Syftet med rekommendationssystem är därmed att påverka konsumenternas avsikt att köpa.

Även om dessa teknologier och system erbjuder många fördelar för både kunden och företaget, skapar de samtidigt etiska frågor i form av: 1) insamling av konsumentdata, 2) användning av insamlade konsumentdata, 3) rekommendationssystem och nudging, och 4) effekten av filterbubblor. Därför kommer denna avhandling att fokusera på kundernas intryck av rekommendationssystem samt de etiska dilemman systemen skapar, och svara på följande forskningsfrågor:

1. Hur uppfattar konsumenterna insamlingen av data för att skapa en mer personlig shoppingupplevelse?
2. Hur uppfattar konsumenterna användningen av rekommendationssystem som en del av sin köpupplevelse?
3. Är insamling av data motiverat för att skapa personliga rekommendationer?
4. Vilka etiska dilemman kan identifieras vid användning av rekommendationssystem i e-handel?

Presentation av metod

Forskningen skedde i form av kvalitativ forskning och semistrukturella intervjuer, för att få perspektiv på de konsumentuppfattningar som studeras i denna avhandling. De valda intervjupersonerna fick själv definiera vad etik betyder för dem, och ifall deras etiska uppfattningar spelar en betydande roll i deras shoppingbeteende på e-handelssidor. Intervjun strävade även efter att fånga konsumenternas uppfattningar om de etiska dilemman i rekommendationssystem.

Deltagarna i studien valdes med hjälp av bekvämlighetsurval. Eftersom studien handlar om individuella etiska uppfattningar, kan större generaliseringar inte göras. Istället fokuserar avhandlingen på att förklara dessa fenomen. Bekvämlighetsurval möjliggör en potentiell

hypotes att skapas, medan själva resultatet av studien inte kan utvidgas till en allmän population (Stratton, 2021). Studien begränsade sig till konsumenter av generation Z, dvs. konsumenter födda inom åren 1995–2010. Alla potentiella deltagare ställdes en preliminär fråga: "Har du beställt kläder på nätet inom det senaste året?". En preliminär fråga användes, för att kartlägga ifall de potentiella deltagarna hade stött på rekommendationssystem.

De 9 st. intervjuerna hölls personligen eller på distans, beroende på vad deltagarna upplevde lämpligast. Semistrukturerade intervjuer tillåter intervjuguiden flexibilitet i de presenterade frågornas ordningsföljd, samtidigt som intervjufrågorna hålls jämförbara (Guthrie, 2010). Intervjuerna följde den utformade intervjuguiden. För att hålla diskussionen naturlig, kunde vissa frågor utelämnas. Alla intervjuer hölls på finska, eftersom det var det mest naturliga språket för de valda deltagarna. Alla intervjuer inspelades, för att underlätta transkriptionsprocessen.

Det konceptuella ramverket

Ett konceptuellt ramverk utformades för att visualisera hur olika faktorer påverkar köpintentionen hos konsumenter av generation Z, och de etiska dilemman som kan hittas i användningen av rekommendationssystem. Därmed består ramverket av två delar. Den första delen beskriver konsumentetik samt de olika aspekter som kan påverka konsumenternas köpintention. Den andra delen fokuserar på de etiska dilemman i rekommendationssystem inom kontexten för e-handel.

Analys

För att analysera insamlade intervjudata användes tematisk analys. Själva analysen var inte bunden till de teman som identifierats i det konceptuella ramverket. Emellertid styrde de teman som identifierades i ramverket uppbyggnaden av intervjuguiden, och påverkade därmed oundvikligen även de teman som identifierades i den tematiska analysen. Tematisk analys kan närmas på två olika sätt; induktivt eller deduktivt (Braun & Clarke, 2012). Ett induktivt tillvägagångssätt drivs av datamaterialet och de identifierade koderna och teman. som Braun

och Clarke (2012) konstaterar är det omöjligt att närma analysen helt induktivt eller deduktivt, och vanligtvis består den tematiska analysen av en kombination av dessa.

Det induktiva tillvägagångssättet valdes för att verkligen analysera konsumenternas intryck och för att se ifall de teman som identifierades ur intervjuerna kunde jämföras med det konceptuella ramverket. Eftersom det konceptuella ramverket styrde intervjuguiden, kan en blandning av både induktiva och deduktiva tillävgagångssätt hittas i analysen.

Sammanfattning av resultat

Resultaten av denna studie indikerar att konsumenter av generation Z tillåter insamling av förstapartsdata för att skapa personliga shoppingupplevelser. Frekventa shoppare upplevde en mer personlig shoppingupplevelse med hjälp av rekommendationssystem. Viss avvikelse kunde fortfarande identifieras i resultaten, eftersom konsumenterna i allmänhet inte ville att webbplatserna skulle insamla någon form av personlig information om dem, men samtidigt njöt samma konsumenter av de personliga rekommendationerna som systemen skapade. Insamling av data från tredje parter var dock mer motstridig. Konsumenterna ville inte dela sin privata information med tredjepartsappar.

Användning av rekommendationssystem accepterades av de flesta konsumenterna. Intervjuerna var utformade på ett sätt, där rekommendationssystem presenterades först i slutet av intervjuerna. Det här bevisade att många konsumenter uppfattade insamlingen av deras personliga data som negativt, före exemplen presenterades. Efter att konsumenterna hade sett de konkreta exemplen blev uppfattningarna kring rekommendationssystem plötsligt positiva. Rekommendationssystem uppfattades som positiva när konsumenterna ville enkelt och snabbt hitta artiklar i deras stil. Likaväl uppfattades rekommendationssystem negativa, ifall konsumenterna ville hitta artiklar utanför deras typiska stil och preferenser.

Intervjun var strukturerad i att först fånga konsumenternas uppfattningar kring datainsamling och användning av personlig data, samt konsumenternas perspektiv på etiken kring dessa fenomen. Därefter presenterades konsumenterna exempel på rekommendationssystem ur Zalandos e-handelsplattform. Syftet med intervjustrukturen var att fånga möjliga avvikelser mellan deltagarnas åsikter kring etik och rekommendationssystem. Det framkom i studien, att

majoriteten av deltagarna hade negativa åsikter om insamling och användning av deras personliga data innan de presenterades exempel på rekommendationssystem. Många av deltagarna tyckte inte om känslan av att deras personuppgifter lagras på webbplatsen, men samtidigt njöt de av personliga produktrekommendationer.

Huruvida insamlingen av data kunde motiveras för att skapa personliga rekommendationer berodde på flera faktorer. För att insamling av data kan motiveras, måste företaget öppet framställa i sin integritetspolicy vilken data som samlas in om användarna samt hur den insamlade datan används. Dessutom, måste konsumenterna ge sitt samtycke till integritetspolicyn. Överlag var insamlingen av förstapartsdata mer motiverat när det gällde användarbarhet, än tredjepartsdata.

Konsumenterna upplevde etiska dilemman i form av partiska och/eller felaktiga rekommendationer, filterbubblor samt problem med datasekretess. Nudging sågs som en retorisk anordning för att sänka konsumenterans köpbarriär. Samtidigt skapade nudging också känslor av irritation och press, samt oro för effekten nudging kan ha på individer.

References:

Afflerbach, P. and Frank, L. (2016), "Customer experience versus process efficiency: toward an analytical framework about ambidextrous BPM", International Conference on Information Systems held at Dublin in December 2016.

Akter, S., & Wamba, S. F. (2016). Big data analytics in E-commerce: a systematic review and agenda for future research. *Electronic Markets*, *26*(2), 173-194.

Alrumiah, S. S., & Hadwan, M. (2021). Implementing big data analytics in e-commerce: Vendor and customer view. *Ieee Access*, *9*, 37281-37286.

Ayuni, R. F. (2019). The online shopping habits and e-loyalty of Gen Z as natives in the digital era. *Journal of Indonesian Economy and Business*, *34*(2), 168.

Bolton, M. (2004). Customer centric business processing. *International Journal of Productivity and Performance Management*.

Braun, V., & Clarke, V. (2012). *Thematic analysis*. American Psychological Association.

Clark, A. (2006). Anonymising research data.

Corporate.zalando.fi (2023). About us. URL: https://corporate.zalando.com/en/about-us (retrieved 11.3.2023).

Dolot, A. (2018). The characteristics of Generation Z. *E-mentor*, *74*(2), 44-50.

Eriksson, P., & Kovalainen, A. (2015). *Qualitative methods in business research: A practical guide to social research*. Sage.

Flick, U., Von Kardorff, E., & Steinke, I. (2004). What is qualitative research? An introduction to the field. *A companion to qualitative research*, *1*, 3-11.

Ghandour, A. (2015). Big Data driven e-commerce architecture. *International Journal of Economics, Commerce and Management*, *3*(5), 940-947.

Goy, A., Ardissono, L., & Petrone, G. (2007). Personalization in e-commerce applications. In *The adaptive web* (pp. 485-520). Springer, Berlin, Heidelberg.

Guthrie, G. (2010). *Basic research methods: An entry to social science research*. SAGE Publications India.

Harvey-Jordan, S., & Long, S. (2001). The process and the pitfalls of semi-structured interviews. *Community Practitioner*, *74*(6), 219.

Howe III, E. G., & Elenberg, F. (2020). Ethical challenges posed by big data. *Innovations in clinical neuroscience*, *17*(10-12), 24.

Hunt, Shelby D. and Scott J. Vitell: 1986, 'A General Theory of Marketing Ethics', *Journal of Macromarketing* **8** (Spring), 5–16.

Jain, S., & Sundström, M. (2021). Toward a conceptualization of personalized services in apparel e-commerce fulfillment. *Research Journal of Textile and Apparel*, *25*(4), 414-430.

Jameson A, Mrtijn CW, Felfernig A, de Gemmis M, Lops P, Semeraro G, Chen L (2015) Human decision making and recommender sys- tems. In: Francesco R, Rokach L, Shapira B (eds) Recommender systems handbook. Springer, Berlin

Jurkiewicz, C. L. (2018). Big Data, big concerns: ethics in the digital age. *Public Integrity*, *20*(sup1), S46-S59.

Kahawandala, N., Peter, S., & Niwunhella, H. (2020, September). Profiling purchasing behavior of Generation Z. In *2020 International Research Conference on Smart Computing and Systems Engineering (SCSE)* (pp. 155-160). IEEE.

Kaptein, M., & Parvinen, P. (2015). Advancing e-commerce personalization: Process framework and case study. *International Journal of Electronic Commerce*, *19*(3), 7-33.

Karn, A. L., Karna, R. K., Kondamudi, B. R., Bagale, G., Pustokhin, D. A., Pustokhina, I. V., & Sengan, S. (2023). Customer centric hybrid recommendation system for E-Commerce applications by integrating hybrid sentiment analysis. *Electronic Commerce Research*, *23*(1), 279-314.

Kifer, D., & Machanavajjhala, A. (2011, June). No free lunch in data privacy. In *Proceedings of the 2011 ACM SIGMOD International Conference on Management of data* (pp. 193-204).

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision support systems*, *44*(2), 544-564.

Kimery, K. M., & McCord, M. (2002). Third party assurances: mapping the road to trust in eretailing. *Journal of Information Technology Theory and Application (JITTA)*, *4*(2), 7.

Liang, T. P., & Tanniru, M. (2006). Customer-centric information systems. *Journal of Management Information Systems*, *23*(3), 9-15.

Limbu, Y. B., Wolf, M., & Lunsford, D. L. (2011). Consumers' perceptions of online ethics and its effects on satisfaction and loyalty. *Journal of research in interactive marketing*, *5*(1), 71-89.

Limbu, Y. B., Wolf, M., & Lunsford, D. (2012). Perceived ethics of online retailers and consumer behavioral intentions: The mediating roles of trust and attitude. *Journal of Research in Interactive Marketing*.

Li, L., & Zhang, J. (2021). Research and analysis of an enterprise E-commerce marketing system under the big data environment. *Journal of Organizational and End User Computing (JOEUC)*, *33*(6), 1-19.

Marr, B. (2019). The Amazing Ways Retail Giant Zalando is Using Artificial Intelligence. *Forbes.* URL: https://www.forbes.com/sites/bernardmarr/2019/09/20/the-amazing-ways-retail-giant-zalando-is-using-artificial-intelligence/?sh=229aaad14d93 (Retrieved 10.5.2023)

Martin, K. D., & Murphy, P. E. (2017). The role of data privacy in marketing. *Journal of the Academy of Marketing Science*, *45*(2), 135-155.

Mazhar, F., Jam, F. A., & Anwar, F. (2012). Consumer trust in e-commerce: A study of consumer perceptions in Pakistan. *African Journal of Business Management*, *6*(7), 2516.

McDermott, K. (2017). Future trends in consumer behavior. *URL: https://www. acapture. com/wpcontent/uploads/2017/03/Future-trends-in-consumer-behavior. Pdf.*

Milano, S., Taddeo, M., & Floridi, L. (2020). Recommender systems and their ethical challenges. *Ai & Society*, *35*, 957-967

Moormann, J. and Palvolgyi, E.Z. (2013), "Customer-centric business modeling: setting a research agenda", IEEE Conference on Business Informatics, pp. 173-179.

Muncy, J. A. and S. J. Vitell: 1992, 'Consumer Ethics: An Investigation of the Ethical Beliefs of the Final Consumer', *Journal of Business Research* **24** (June), 297–311.

Nguyen, T. T., Hui, P. M., Harper, F. M., Terveen, L., & Konstan, J. A. (2014, April). Exploring the filter bubble: the effect of using recommender systems on content diversity. In *Proceedings of the 23rd international conference on World wide web* (pp. 677-686).

Okeke, R. I., Shah, M. H., & Ahmed, R. (2013). Issues of privacy and trust in e-commerce: Exploring customers' perspective. *Journal of Basic and Applied Scientific Research*, *3*(3), 571-577.

Pariser, E. (2011). *The filter bubble: What the Internet is hiding from you*. penguin UK.

Portugal, I., Alencar, P., & Cowan, D. (2018). The use of machine learning algorithms in recommender systems: A systematic review. *Expert Systems with Applications*, *97*, 205-227.

Román, S. (2007). The ethics of online retailing: a scale development and validation from the consumers' perspective. *Journal of Business Ethics*, *72*(2), 131-148.

Roncevic, A., Lukcic, T., & Spoljaric, P. (2019). Impact of traditional and digital marketing on consumer perception. *Economic and Social Development: Book of Proceedings*, 330-340.

Schafer, J. B., Konstan, J., & Riedl, J. (1999, November). Recommender systems in e-commerce. In *Proceedings of the 1st ACM conference on Electronic commerce* (pp. 158-166).

Schmidt, A. T., & Engelen, B. (2020). The ethics of nudging: An overview. *Philosophy Compass*, *15*(4), e12658.

Schoeman, F. D. (Ed.). (1984). *Philosophical dimensions of privacy: An anthology*. Cambridge University Press.

Shah, D., Rust, R. T., Parasuraman, A., Staelin, R., & Day, G. S. (2006). The path to customer centricity. *Journal of service research*, *9*(2), 113-124.

Sharma, G., & Lijuan, W. (2015). The effects of online service quality of e-commerce Websites on user satisfaction. *The Electronic Library*.

Shenaam, J. & Sundström, M. (2001). Toward a conceptualization of personalized services in apparel e-commerce fullfillment. *Research Journal of Textile and Apparel* (Vol. 25, 4, p.414-430).

Singh, A.P., Dangmei, J. (2016). Understanding the generation Z: the future workforce. *South-Asian Journal of Multidisciplinary Studies*, *3*(3), 1–5.

Smith, R., & Shao, J. (2007). Privacy and e-commerce: a consumer-centric perspective. *Electronic Commerce Research*, *7*, 89-116.

Stinson, C. (2022). Algorithms are not neutral: Bias in collaborative filtering. *AI and Ethics*, *2*(4), 763-770.

Stratton, S. J. (2021). Population research: convenience sampling strategies. *Prehospital and disaster Medicine*, *36*(4), 373-374.

Song, X., Yang, S., Huang, Z., & Huang, T. (2019, August). The Application of Artificial Intelligence in Electronic Commerce. In *Journal of Physics: Conference Series* (Vol. 1302, No. 3, p. 032030). IOP Publishing.

Souali, K., El Afia, A. & Faizi, R. (2011). An automatic ethical-based recommender system for e-commerce. *International Conference on Multimedia Computing and Systems*, 2011, pp. 1-4, doi: 10.1109/ICMCS.2011.5945631.

Sunstein, C. R. (2015). The ethics of nudging. *Yale J. on Reg.*, *32*, 413.

Terry, G., Hayfield, N., Clarke, V., & Braun, V. (2017). Thematic analysis. *The SAGE handbook of qualitative research in psychology*, *2*, 17-37.

Thaler, R. H., & Sunstein, C. (2008). *Nudge*. New Haven: Yale University Press.

Tian, Y., & Stewart, C. (2006). History of e-commerce. In *Encyclopedia of e-commerce, e-government, and mobile commerce* (pp. 559-564). IGI Global.

Turner, C. W., Zavod, M., & Yurcik, W. (2001, November). Factors that affect the perception of security and privacy of e-commerce web sites. In *Fourth International Conference on Electronic Commerce Research, Dallas TX* (pp. 628-636).

Vitell, S. J. (2003). Consumer ethics research: Review, synthesis and suggestions for the future. *Journal of business ethics*, *43*, 33-47.

Wang, W., and Benbasat, I. Trust in and adoption of online recommen- dation agents. Journal of the Association for Information Systems, 6, 3 (2005), 72–101.

Wilkinson, T. M. (2013). Nudging and manipulation. *Political Studies*, *61*(2), 341-355.

Yapo, A., & Weiss, J. (2018). Ethical implications of bias in machine learning.

Yassine, A. F. O. U. D. I., Mohamed, L. A. Z. A. A. R., & Al Achhab, M. (2021). Intelligent recommender system based on unsupervised machine learning and demographic attributes. *Simulation Modelling Practice and Theory*, *107*, 102198.

Appendix 1 – The Interview Guide in English

Background

1. Would you initially tell us your age, gender, and occupation?
2. What is your relationship with online shopping?
3. When was the last time you shopped for clothes online? Why?
4. How often have you shopped for clothes online during the past year?
5. When shopping - do you oftentimes have something particular in mind or just browse the pages?
6. How do you find your items? Examples: Using the search function, browsing categories, browsing the main/front page, recommendations online or through social media recommendations.

Ethical reflections

7. On what basis do you choose on which online platform to shop? Why?
8. What features do you consider important in an online store?
9. How do you identify a trustworthy e-commerce site?
10. What functions of an e-commerce site can tell you about its trustworthiness?
11. Have you encountered an e-commerce site you perceived as untrustworthy? Or an untrustworthy online shopping experience?
12. If you have, could you expand upon that experience?

Data privacy and data collection

Online stores and websites collect data about their website visitors e.g., based on behavior and purchases (completed and abandoned). The online store/ page must describe what information the company collects and what the collected information is used for in their privacy statement.

13. How do you define ethics?
14. What do you consider ethical data use? Why?
15. What do you consider unethical data use? Why?
16. What are your thoughts on the collection of your personal data / data privacy?

*First party data is data that the company has collected directly from **their** customers and visitors. Third-party data is data collected by a provider across **other** company's websites and apps.*

17. What are your thoughts on the use of your personal data? First party and third-party data use?
18. Can you think of any examples where the use of your personal data could be considered unethical for you personally?

Recommender systems

19. Are you aware of recommender systems and the use of recommender systems on e-commerce sites?

An example of a recommender system is shown to the participant. The examples is demonstrated through a screenshot from Zalando's online platform.

20. Do you know how recommender systems work?
21. Could you share any personal thoughts on recommender systems?
22. What advantages and disadvantages do you find recommender systems to have?
23. Do you perceive recommender systems ethical/unethical? Why?
24. Do you ever feel left out of recommendations?

Final thoughts

25. Where do you think recommendation systems and utilization of user data will go in the future?
26. Do you have any final thoughts on the topic?

Appendix 2 – Interview Guide in Finnish

Taustatiedot

1. Kertoisitko aluksi taustatietoina ikäsi, sukupuolesi ja elämäntilanteesi?
2. Kertoisitko vähän suhteestasi nettishoppailuun?
3. Milloin viimeksi tilasit vaatteita netistä? Miksi?
4. Kuinka usein olet tilannut vaatteita netistä viimeisen vuoden aikana?
5. Tilatessasi netistä - onko sinulla useinmiten joku tietty tuote mielessä vai selaatko vain sivuja?
6. Miten löydät tuotteesi? Esimerkiksi: Käyttämällä hakufunktiota, selaamalla kategorioita, selaamalla etusivua, nettisuosittelujen kautta vai sosiaalisen median suosittelujen kautta.

Reflektointia etiikasta

7. Millä perusteilla valitset verkkokaupan, josta tilata? Miksi?
8. Mitä ominaisuuksia verkkokaupassa pidä tärkeinä?
9. Miten tunnistat luotettavan verkkokaupan?
10. Mitkä ominaisuudet verkkokaupassa kertovat sinulle sen luotettavuudesta?
11. Oletko törmännyt mielestäsi epäluotettavaan verkkokauppaan? Tai epäluotettavaan ostokokemukseen verkkokaupassa?
12. Jos olet, voisitko avata kokemusta hieman enemmän?

Tietosuoja ja tiedonkeruu

Verkkokaupat ja –sivut keräävät sivuilla kävijöistään dataa, esim. Käyttäytymisen ja ostosten (läpiviety ja keskeenjätetty) perusteella. Verkkokaupan/-sivun tulee kuvata mitä tietoa yritys kerää ja mihin kerättyä tietoa käytetään tietosuojaselosteessa.

13. Miten määrittelet eettisyyden?
14. Mitä pidät eettisenä tiedonkäyttönä?
15. Entä mitä pidät epäeettisenä tiedonkäyttönä?
16. Mitä ajatuksia sinulla on henkilökohtaisen datasi keruusta / tietosuojasta?

Ensimmäisen osapuolen data tarkoittaa dataa, jonka yritys on kerännyt suoraan asiakkailtansa ja kävijöiltänsä. Kolmannen osapuolen datalla tarkoitetaan dataa, joka on kerätty muiden yritysten toimesta verkkosivuilta ja sovelluksista.

17. Mitä ajatuksia sinulla herää henkilötietojesi ja henkilökohtaisen datasi käytöstä? Ensimmäisen osapuolen data ja kolmmannen osapuolen data?
18. Minkälaisessa tilanteessa voisit kokea henkilökohtaisen datasi käytön epäeettiseksi? Miksi?

Suosittelujärjestelmät

19. Oletko tietoinen suosittelujärjestelmien käytöstä verkkokauppojen sivuilla?

Esimerkki suosittelujärjestelmästä esitetään osallistujalle. Esimerkki demonstroidaan kuvakaappauksen avulla Zalandon verkkosivuilta.

20. Tiedätkö miten suosittelujärjestelmät toimivat?
21. Mitä ajatuksia suosittelujärjestelmät sinussa herättävät?
22. Mitä hyötyjä/haittoja voisit ajatella suosittelujärjestelmillä olevan?
23. Koetko suosittelujärjestelmien olevan eetttisiä/epäeettisiä? Miksi
24. Koetko ikinä jääväsi ulkopuolelle suositteluista?

Loppuajatuksia

25. Mihin uskot suosittelujärjestelmien ja käyttäjädatan hyödyntämisen menevän tulevaisuudessa?
26. Haluatko vielä jakaa ajatuksia aiheesta?