LUISS

Degree Program in BI-LUISS Joint Masters In Marketing

Course of Marketing Analytics

The Impact of Digital Nudges on Consumer Trust in Online Environments

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Academic Year: 2022/2023

Abstract

Problem The advent of the digital era has significantly transformed the way businesses interact with consumers. As e-commerce continues to grow, marketers are increasingly utilizing a range of digital marketing strategies to influence consumer behavior. However, there are concerns about the ethicality and transparency of these strategies, particularly digital nudges, which could potentially erode consumer trust in online environments.

Purpose This master's thesis aims to examine how different types of digital nudges affect consumer trust in online environments and the role of ethicality and transparency in this relationship. The study seeks to investigate the impact of four types of digital nudges on consumer trust and explore the mediating effects of perceived ethicality and transparency.

Research Design The study utilizes a quantitative research design conducted in four different digital environments, namely Netflix, Zalando, Apple, and Booking.com, each employing a specific type of digital nudge. The study examines the effects of default setting, social proof, decoy effect, and scarcity nudges on consumer trust. Perceived ethicality and transparency are measured as mediators in the relationship between digital nudges and consumer trust.

Findings The analysis reveals that default nudges and social proof nudges have a positive impact on consumer trust in online environments. On the other hand, decoy effect and scarcity nudges have a negative effect on consumer trust. The study further demonstrates that perceptions of ethicality and transparency mediate the relationship between digital nudges and consumer trust.

Keywords: Digital nudges, consumer trust, ethicality, transparency, online environments, e-commerce

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CHAPTER 1 - INTRODUCTION AND RESEARCH CONTEXT

The advent of the digital era has significantly transformed the way businesses interact with consumers. As e-commerce continues to grow, marketers are increasingly utilizing a range of digital marketing strategies to influence consumer behavior. One such strategy that has gained significant attention is the use of digital nudges, which are subtle interventions designed to steer consumers' decision-making processes in a non-coercive manner (Thaler & Sunstein, 2008; Weinmann et al., 2016). Various sources estimate that an adult makes roughly 35,000 remotely conscious decisions each day, highlighting the enormous potential impact of digital nudges (Hoomans, n.d.).

Digital nudges operate in a variety of ways, including influencing consumer choices, reinforcing certain behaviors, and framing consumers' decision-making processes. They are used across various digital environments, such as email, SMS, social media, mobile apps, e-commerce platforms, and e-government platforms. For instance, e-commerce companies use nudges to guide consumers towards certain products or services, such as personalized recommendations based on browsing history or past purchases (Lembcke et al., 2019). E-commerce companies have recognized the potential benefits of digital nudging and have incorporated it into their business strategies. For example, Amazon's recommendation engine is estimated to drive up to 35% of the company's sales (Morgan, n.d.). Similarly, Netflix's personalized recommendation system is credited with contributing to the company's success and growth in the streaming market (Nast, n.d.). According to a survey, a substantial portion of consumers (76%) stated that personalized communications played a significant role in their brand consideration process. Furthermore, a majority of respondents (78%) reported that receiving personalized content made them more inclined to make repeat purchases (Arora, 2021). While digital nudges have been found to be effective in driving consumer behavior, there are growing concerns about their ethicality and transparency. The potential for manipulation without the consumer's knowledge or consent can erode trust in online environments, which could ultimately have an impact on business outcomes. Therefore, it is essential to investigate how different types of digital nudges may impact consumer trust and how this relationship may be mediated by perceptions of transparency and ethicality.

The aim of this thesis is to examine how different types of digital nudges affect consumer trust in online environments and the mediating role of ethicality and transparency in this relationship. In a previous study, researchers conducted a comprehensive analysis of 23 nudging mechanisms and classified them into six categories: facilitate, confront, deceive, social influence, fear, and reinforce (Caraban et al., 2019). However, considering the limitations and time constraints of this investigation, the focus will be narrowed down to four specific categories and their corresponding nudges. Specifically, the study will explore the default nudge (facilitate category), decoy nudge (deceive category), social proof nudge (social influence category), and scarcity nudge (fear category). The reinforce and confront categories will not be included in this study, allowing for a more focused examination of the selected nudges within their respective categories.

The study will be conducted in four different digital environments, including Netflix, Zalando, Apple, and Booking.com, each utilizing a different type of digital nudge. The findings of this study will contribute to

the existing literature on digital nudging and consumer behavior by shedding light on the ethical and transparent use of digital nudges in different digital environments. Furthermore, the study's results will provide insights into how businesses can employ digital nudges in a manner that fosters consumer trust and strengthens brand loyalty. Thus, the research question that this thesis aims to answer is:

> *How do different types of digital nudges affect consumer trust in online environments, and what role do perceptions of ethicality and transparency play in this relationship?*

In the subsequent section, the relevant literature pertaining to the topic is presented, leading to the formulation of five hypotheses. These hypotheses are subsequently tested through a univariate and mediating analyses. The study's findings are then presented and discussed, offering both academic and managerial implications. Finally, the study's limitations are addressed, and suggestions for future research are provided.

1.1 SHARING ECONOMY

The sharing economy has emerged as a prominent sector within digital environments, transforming how individuals engage in economic activities. With the advent of the internet and advancements in Information and Communication Technology (ICT), sharing has evolved beyond its traditional boundaries, giving rise to scalable sharing economies facilitated by digital platforms (Matzler et al., 2014). Sharing, which has been a common form of resource allocation throughout human history, has now taken on new dimensions in the digital era. The concept of the sharing economy leverages digital platforms to facilitate peer-to-peer transactions, enabling individuals to participate as economic actors in their social networks. As a result, the establishment of consumer trust has become paramount for e-commerce sites operating in this domain (Pouri & Hilty, 2018). Understanding the role of trust in the sharing economy is crucial. Trust plays a critical role in fostering cooperation and enabling successful transactions between participants. In the context of online sharing platforms, where individuals engage in transactions with strangers, building trust becomes even more crucial (Matzler et al., 2014). By understanding the impact of different types of digital nudges within the sharing economy, we can gain insights into their influence on consumer trust and the role perceptions of ethicality and transparency play in shaping this relationship.

1.2 THE ROLE OF DIGITAL PLATFORMS

Digital platforms serve as the underlying infrastructure for online interactions, transactions, and the exchange of information. Within this context, platforms employ persuasive techniques, including digital nudges, to enhance user experiences, facilitate decision-making processes, and establish trust with their users. Understanding how platforms leverage these techniques is essential for comprehending their impact on user behavior and the development of consumer trust. The platform economy, driven by digital platforms, has become a key catalyst in the ongoing digital transformation. With the widespread adoption of the internet and the ubiquity of mobile phones, digital platforms have affected various aspects of our lives. They have revolutionized how we engage with others, share experiences, navigate transportation, make purchases, access

healthcare, and share resources (Fu et al., 2021). Furthermore, in the digital era, online platforms have played a significant role in enhancing customer satisfaction and loyalty, thereby indirectly impacting the economic growth of communities. As the digital economy continues to evolve, organizations and companies must strive for improvements in various aspects, including product quality and marketing strategies, to thrive in this dynamic environment (Adam et al., 2020).

1.3 THE IMPORTANCE OF PERSUASION IN DIGITAL ENVIRONMENTS

In today's digital landscape, where individuals are constantly exposed to an abundance of information and choices, the role of persuasion techniques in guiding consumer decision-making becomes increasingly significant. Within digital environments, digital nudges have emerged as powerful tools for influencing consumer behaviors, attitudes, and ultimately, trust in online platforms. This section aims to delve into the importance of persuasion in the digital realm, focusing specifically on the role of digital nudges and their impact on consumer trust. In the absence of constant supervision, consumers face numerous decisions in their everyday lives. Here, the power of persuasive technology embedded in digital designs comes into play, influencing decision-making outcomes (Last et al., 2021). Moreover, persuasive communication permeates various contexts, with governments, companies, and political parties employing persuasive appeals to encourage specific actions such as healthier eating, product purchases, or voting for particular candidates. Recent research indicates that individuals' psychological characteristics can be accurately predicted based on their digital footprints, such as Facebook Likes or Tweets (Matz et al., 2017). Furthermore, our interactions with technology increasingly shape our sense of self. The very same digital environment in which we read, search, and engage with others also enables marketers to utilize our data to influence us in return (Schneier & Wanless, 2020). By exploring the multifaceted nature of persuasion in digital environments, particularly through the lens of digital nudges, we can gain a deeper understanding of their effectiveness in influencing consumer trust.

1.4 E-COMMERCE AND PERSUASIVE TECHNIQUES

The advent of e-commerce has revolutionized the way we shop, offering unparalleled convenience, a vast array of choices, and personalized experiences. This section focuses on the application of persuasive techniques in e-commerce and their impact on consumer trust. Research in the field of e-commerce indicates that shoppers' intention to purchase a product can be predicted by their motivation for shopping (Pappas et al., 2017). Furthermore, online shoppers exhibit diverse shopping patterns and behaviors, influenced by various factors that may not affect them uniformly (Ganesh et al., 2010). The persuasive design of e-commerce websites has been shown to play a crucial role in supporting consumers with their online purchases. It is imperative to understand how persuasive applications are integrated into e-commerce website designs. As online shopping becomes an increasingly common mode of retail, website design and functionality are pivotal in distinguishing e-commerce providers. Websites serve as the initial point of contact for consumers and

contribute to shaping their impressions and inclination towards repeated website usage. High-quality websites attract more users and effectively convert browsers into shoppers. Presently, numerous persuasive features are extensively employed in e-commerce website design to enhance overall quality by emphasizing website credibility and refining marketing strategies (Alhammad & Gulliver, 2014). By examining the persuasive techniques utilized in e-commerce, we can gain valuable insights into how these techniques shape consumer decision-making processes and cultivate trust. Understanding the interplay between digital nudges, consumer trust, and the ethical dimension of e-commerce is essential for both e-commerce platforms and consumers in fostering trustworthy and transparent online shopping experiences.

CHAPTER 2 - LITERATURE REVIEW

2.1 PERSUASION THEORY

It is vital to provide a brief summary of persuasion in general before outlining the persuasion approach I intend to use. One of the many definitions of persuasion created in psychology states that

> *"persuasion involves one or more persons who are engaged in the activity of creating, reinforcing, modifying, or extinguishing beliefs, attitudes, intentions, motivations, and/or behaviors within the constraints of a given communication context* (Ganesh et al., n.d.)"

Persuasion in the context of marketing is utilizing the extensive knowledge of human psychology to create marketing plans for goods or services. Many authors have made an effort to describe how attitude change occurs. Petty and Cacioppo (1986) have one of the leading theories within human psychology called the elaboration likelihood model (ELM). The theoretical framework proposes that the process of persuasion can be facilitated through two different routes, namely the central route and the peripheral route. Persuasion via the central route involves a deliberate and thoughtful evaluation of the information presented. It necessitates the recipient to elaborate on the information and utilize cognitive resources to process it. Conversely, persuasion via the peripheral route occurs when individuals rely on cues from the message and make simple inferences based on them. The utilization of the central route requires motivation and the ability to scrutinize the message in greater detail. In contrast, in the absence of motivation and cognitive resources, individuals are more likely to resort to the peripheral route and rely on a range of heuristics and instruments to interpret the message. It is evident that both the routes can significantly impact the degree and nature of persuasion, depending on the specific context and individual factors (Petty & Cacioppo, 1986). Cialdini (2014), a prominent author in the field of persuasion theory, has identified a range of heuristics that can play a significant role in the persuasion process. These heuristics encompass the principles of reciprocity, commitment and consistency, social proof, authority, liking, and scarcity. By leveraging these heuristics, individuals can influence the attitudes, beliefs, and behaviors of others, often without their conscious awareness.

2.2 NUDGE THEORY

The concept of nudge theory, introduced by Thaler & Sunstein (2008), has gained significant attention in recent years due to its potential to influence behavior without restricting individuals' freedom of choice. The authors define a nudge as any alteration to the choice architecture that can predictably alter behavior without eliminating options or significantly modifying economic incentives. To be considered a nudge, the intervention must also be easy and inexpensive to avoid. Nudging can be seen as an application of libertarian paternalism, which holds that individuals should be free to make their own choices while still benefiting from paternalistic guidance. This approach emphasizes the importance of allowing individuals to opt out of undesirable arrangements while providing incentives and nudges to steer them toward better choices (Thaler & Sunstein,

2008).

The theory's foundation rests on the notion that individuals can be categorized into two primary modes of thinking: thoughtful and impulsive. Thoughtful individuals tend to make reasoned decisions based on economic incentives, whereas impulsive individuals often choose a satisfactory option over a perfect one (Tversky & Kahneman, 1974). Decision-making is frequently guided by heuristics, or rules of thumb, that reduce the amount of information processing required. These heuristics can result in irrational decision-making, which is where nudges can have an impact. By leveraging individuals' cognitive biases and heuristics, nudges can shape the choice architecture to guide individuals toward preferred outcomes (Kahneman & Thaler, 2006). Thaler et al. (2010) define choice architecture as the environment in which people make decisions, with nudges being the features that influence those decisions.

2.3 DIGITAL NUDGING

Digital nudging refers to the use of design elements within user interfaces to influence people's behavior in digital choice environments. These environments require users to make decisions or judgments, and the presentation of options can significantly impact the choices made. By shaping the presentation of options, digital nudging can guide users toward specific outcomes (Weinmann et al., 2016). Digital environments where such nudges can be used include email, SMS, push notifications, mobile apps, social media, e-commerce, e-government, corporate digital information systems, and many other digital interfaces that affect the decision-making process. In contrast to earlier definitions, researchers have recently provided additional specificity to the term digital nudges by referring to it as “any intended and goal-oriented intervention element in digital or blended environments attempting to influence people’s judgment, choice, or behavior in a predictable way (Lembcke et al., 2019; Meske & Kroll, 2017)”.

Compared to the physical world, digital environments provide greater flexibility for designers to create digital nudges. Physical objects such as streets and trees cannot be easily moved or altered, whereas designers and developers of digital interfaces have a wide range of options to modify the design of an information system (IS) without incurring significant financial costs. As a result, designers have more freedom to create digital nudges that guide user behavior toward desired outcomes (Lembcke et al., 2019).

Sunstein (2012) argues that personalized nudges should be used to cater to the heterogeneity of the population being nudged, rather than using a one-size-fits-all approach. Thaler and Tucker (2013) propose the creation of "choice engines" that would use data to generate personalized recommendations for decision-makers, thereby personalizing the information disclosed to aid in decision-making. Nudging involves guiding individuals towards certain choices, and choice personalization uses various types of data to determine the best way to influence decision-makers. For example, when it comes to saving for a pension, different default contribution rates might be suggested based on whether someone tends to save too little or too much. Delivery personalization, on the other hand, determines the most effective method of nudging individuals based on their specific characteristics. This could involve using default nudges for those who are impatient and social norm

nudges for those who value the opinions of their peers. While choice and delivery personalization are often discussed separately, they can also be combined. For instance, platforms like Facebook personalize the medium of advertisements based on user preferences and then tailor the actual products advertised through that medium. This demonstrates the use of both delivery and choice personalization techniques (Mills, 2022).

2.3.1 Different types of digital nudges

While digital nudging techniques have been used in various settings, such as healthcare, finance, and sustainability, there is no standard framework for categorizing the different types of digital nudges (Berger et al., 2022; Jesse et al., 2021; Meske et al., 2022; Zimmermann & Sobolev, 2020). To address this gap, Caraban et al (2019) conducted a comprehensive analysis of 23 nudging mechanisms and clustered them into six categories: facilitate, confront, deceive, social influence, fear, and reinforce. This section of the literature review will explore these different nudges within these categories and their underlying mechanisms, with a particular focus on their potential applications and effectiveness in a digital context.

Nudges **categorized as "facilitate"** aim to simplify decision-making processes for individuals by reducing physical or mental effort (Caraban et al., 2019). By utilizing the "status-quo bias," which is our natural tendency to resist change and follow the path of least resistance, these nudges encourage individuals to naturally follow a predetermined set of actions aligned with their best interests and goals (Thaler & Sunstein, 2008). These nudges were first used to simplify software installation and facilitate product sales, where preselected options were chosen by the manufacturer or software developer (Paunov et al., 2022; Shah & Kesan, 2006). In the current nudging paradigm, defaulting has proven to be the most effective technique in the influence toolbox, successfully guiding choices in various domains (Hummel & Maedche, 2019; Last et al., 2021). Default nudges have online use cases ranging from promoting sustainable purchases to inducing acceptance of behavior-tracking scripts, also known as "cookies" (Paunov et al., 2022). The default effect is a well-documented phenomenon in behavioral economics, where individuals tend to choose the default option presented to them, even if it requires some effort to change it (Thaler & Sunstein, 2008). One example of the default effect in action is in organ donation programs. Countries that have an "opt-in" system, where individuals have to actively choose to become an organ donor, typically have lower organ donation rates compared to countries with an "opt-out" system, where individuals are automatically enrolled as donors unless they choose to opt out (Johnson & Goldstein, 2003). This is because the default option in the opt-out system is to be an organ donor, making it easier for individuals to decide in favor of donation. Similarly, in the context of online purchases, a default option can be used to guide consumers toward choosing sustainable or eco-friendly products. For example, an online retailer can make the default option the eco-friendly version of a product, encouraging consumers to make a more sustainable choice with minimal effort (Guath et al., 2022).

Nudges within **the confront category** aim to disrupt unwanted actions by creating uncertainty and tapping into people's aversion to regret, which leads them to make more thoughtful decisions when they perceive potential risks (Caraban et al., 2019). These nudges aim to interrupt automatic behavior and

encourage individuals to make deliberate choices. In the context of combating mindless activity, a simple yet effective approach involves implementing a time buffer that allows for a reversal of the action. For instance, a study conducted by Wang et al., (2014) developed a Chrome browser plugin that delayed the publication of Facebook posts by 10 seconds, prompting users to reconsider the content before finalizing their posts. Although participants had the option to bypass the countdown, the findings indicated that many individuals took advantage of this pause to revise their posts or even opt against publishing them altogether (Wang et al., 2014).

The "deceive" category of nudges employs deceptive mechanisms to shape how alternatives are perceived or how activities are experienced, all with the purpose of promoting specific outcomes (Caraban et al., 2019). An instance of this is the decoy effect, which enhances the attractiveness of a desirable option by presenting it alongside an unattractive option that is unlikely to be chosen by anyone (Schneider et al., 2018). Since the decoy effect was first described by Huber et al. (1982), it has been extensively studied by researchers in behavioral economics, marketing, and psychology. This research consistently exposes weaknesses in normative decision theories, which contend that decision-makers have consistent preferences toward a given option (Schumpe et al., 2020; C. Wu & Cosguner, 2020; L. Wu et al., 2020). In the digital context, the decoy effect has been utilized to promote healthier choices in a variety of settings. For instance, Lee et al. (2011) used the decoy effect to advertise healthy options on a website where people could purchase snacks. The image of a large, shiny apple was placed next to a little, withering apple in an effort to boost the likelihood that people would choose fruit over cookies. The significance of the feature "shininess" is boosted by including an inferior apple in the selection, favoring the shining apple above all other options. The decoy effect has also been used in e-commerce settings to influence consumers' purchase decisions. According to Huber et al. (2014), the decoy effect could potentially be exploited in digital marketplaces. They argue that this is because all choice sets in these marketplaces contain two variables: a price and a reviewer's rating. This makes it easier for marketers to manipulate the consumer's decision-making process by introducing a decoy option that is strategically designed to steer them toward a certain product or service. Frederick et al. (2014) argue that the decoy effect is not as prevalent in ordinary purchase situations because these do not typically involve the same standardized choice sets found in digital marketplaces.

The category social influence capitalize on people's desire to conform and comply with what is seen to be required of them (Caraban et al., 2019). Festinger (1954) asserts that when we are unable to establish proper conduct, people prefer to pay attention to other people's behaviors and look for social proof. Social proof can encompass two types of norms: popularity norms that reflect the degree of acceptance within a social group, and moral norms that relate to standards of honesty and integrity (Schneider et al., 2018). Social proof has been used as a nudge in various digital contexts, such as e-commerce, social media, and online reviews. For example, e-commerce websites often use social proof to increase the likelihood of a purchase by displaying the number of people who have already bought a product or the number of positive reviews it has received. Social media platforms also use social proof to encourage users to engage with content by displaying the

number of likes, shares, or followers. Online reviews often include social proof in the form of star ratings and user feedback. These 'star rating' scales for instance on Amazon.com reflect the average customer review for a respective product. These reviews can be regarded as eWOM which is a form of social proof that regularly influences our decision-making process (Roks, 2015; Sherlin et al., 2020).

The category known as "fear" encourages users to engage in an activity by inducing feelings of fear, loss, and uncertainty (Caraban et al., 2019). Scarcity is an example of this category and describes our propensity to place a higher value on something because we think it will be harder to obtain in the future. For instance, publicizing a restricted number of seats for upcoming events improves the likelihood that people will make reservations for the event months in advance (Cialdini, 2021). In the context of digital nudging, scarcity can be a powerful motivator to influence user behavior. Schneider et al. (2018) demonstrated that limiting the availability of rewards can persuade customers to choose a certain reward in the context of crowdfunding. The study conducted by Johnson et al. (2012) also demonstrated that their system induced a feeling of urgency or scarcity, compelling users to act swiftly and possibly prioritize short-term rewards. Moreover, scarcity can be a persuasive tactic used in marketing and sales. The fundamental principles of nudging mechanisms typically involve a limited timeframe, constrained resources, and temptation, which align with the techniques used in scarcity-based nudges. For example, e-commerce websites often use scarcity to encourage users to make a purchase by displaying the limited availability of a product or the number of items left in stock. Similarly, online retailers often use countdown timers to create a sense of urgency and scarcity (Cialdini, 2021; Johnson et al., 2012).

Nudges in the **reinforce category** focus on strengthening desired behaviors by enhancing their salience in individuals' thoughts. Just-in-time prompts are employed to capture users' attention at opportune moments, particularly when their behavior deviates from the desired ideal. For example, applications like WalkMinder utilize buzzing notifications to alert users when they have been inactive for extended periods. Similarly, EcoMeal employs weight sensing technology to assess the amount of food on one's plate, inferring their eating pace, and providing gentle feedback to encourage slower eating (Hirano et al., 2013; J. Kim et al., 2016). By using these approaches, individuals are reminded of the target behaviors and are prompted to adjust their actions accordingly.

Due to time constraints and considering the limitations of this investigation, I have made the decision to focus solely on four specific categories and their corresponding nudges. Specifically, I will explore the default nudge within the facilitate category, the decoy nudge within the deceive category, the social proof nudge within the social influence category, and the scarcity nudge within the fear category. Consequently, the reinforce and confront categories will not be included in this study. This selection allows for a more manageable and focused examination of nudges within the chosen categories.

2.4 THE ETHICAL DIMENSIONS OF NUDGING

The use of behavioral insights to influence people's behavior in nudging interventions is a central concern of ethical criticism in both academic and public circles. Many argue that the effectiveness of nudges relies on their ability to subconsciously manipulate people's decisions, which goes against the principles of modern democracies. This viewpoint is widely held and considered fundamental to discussions about the ethics of nudging (Bogens, 2009; Felsen et al., 2013; Hansen, 2016; Hansen & Jespersen, 2013; Vallgårda, 2012). Critics of nudging often express concern about its intentional nature - if nudging is deliberately used to influence choices, it must serve a specific purpose and promote certain values. However, there is a potential risk that these values may not align with the individual's own values (Hansen & Jespersen, 2013). Despite these concerns, proponents of nudging, such as Thaler and Sunstein, argue that it can be used for the greater good, specifically in the context of libertarian paternalism (Thaler & Sunstein, 2008).

An article by Lembcke et al. (2019) delves into the ethical considerations surrounding digital nudging, including the level of effort required for people to maintain their freedom of choice, the degree of transparency required for a nudge to be considered ethical, and the alignment of choice architects' goals with those of the individuals being nudged. However, Meske and Amojo (2020) argue that despite these important factors, the field lacks clear ethical guidelines for researchers and practitioners and calls for more research in this area.

Thomas et al., (2019) created and validated a scale for measuring the perceived persuasiveness of digital behavior interventions. The scale acknowledges the role of ethos, logos, and pathos in persuasive messaging, which are ethical and persuasive appeals commonly used in communication. Ethical considerations are important in digital behavior interventions, and the scale's emphasis on measuring persuasiveness suggests an awareness of ethical communication practices. Ethical messaging involves considering the impact of persuasive techniques on individuals' autonomy, privacy, and well-being. The scale can be used to assess users' perception of the persuasive nature of the intervention, helping to ensure informed consent and voluntary engagement. By using the scale, researchers can evaluate the perceived effectiveness of interventions in changing attitudes or behavior, which can be considered a component of ethical effectiveness. Considering ethics in digital behavior interventions helps prevent manipulation or deceptive tactics and promotes user empowerment and respect for their rights. The scale for perceived persuasiveness can be a useful tool in assessing the ethical dimensions of digital behavior interventions and informing the development of ethically sound interventions.

2.5 THE TRANSPARENCY OF THE NUDGE

Hansen and Jespersen (2013) developed a classification system for nudges based on two key factors: the mode of thinking that is engaged and the transparency of the nudge. Nudges can be categorized based on their intentions and transparency. The first type is automatic-transparent nudges, which aim to influence behavior without hidden motives. For example, changing the default option to encourage a particular choice. The second type is reflective-transparent nudges, which aim to prompt reflective thinking and conscious decision-making.

An example of this is the "look right" signs painted on the streets of London to remind pedestrians to be cautious. The third type is reflective-non-transparent nudges, which intend to manipulate choices without explicitly disclosing their motives. This can be seen when irrelevant alternatives are added to the available choices to increase the perceived value of certain options. Lastly, there are automatic-non-transparent nudges, which seek to manipulate behavior while keeping their intentions hidden. An instance of this would be rearranging the cafeteria layout to emphasize healthier food items without explicitly stating the purpose (Hansen & Jespersen, 2013). Caraban et al. (2019) built upon this system and identified six clusters of nudges, which were then positioned on the transparency and reflective-automatic axes of Hansen and Jespersen's framework. Figure 1 illustrates how these various clusters of nudges can be categorized according to their degree of transparency and the type of thinking they employ. From the comprehensive analysis conducted by Caraban et al. (2019) on 23 different nudging mechanisms, four specific nudges were selected for this study: social proof, defaults, decoy options, and scarcity nudges. These four nudges were chosen based on prior research, their relevance to the study's focus and time constraints.

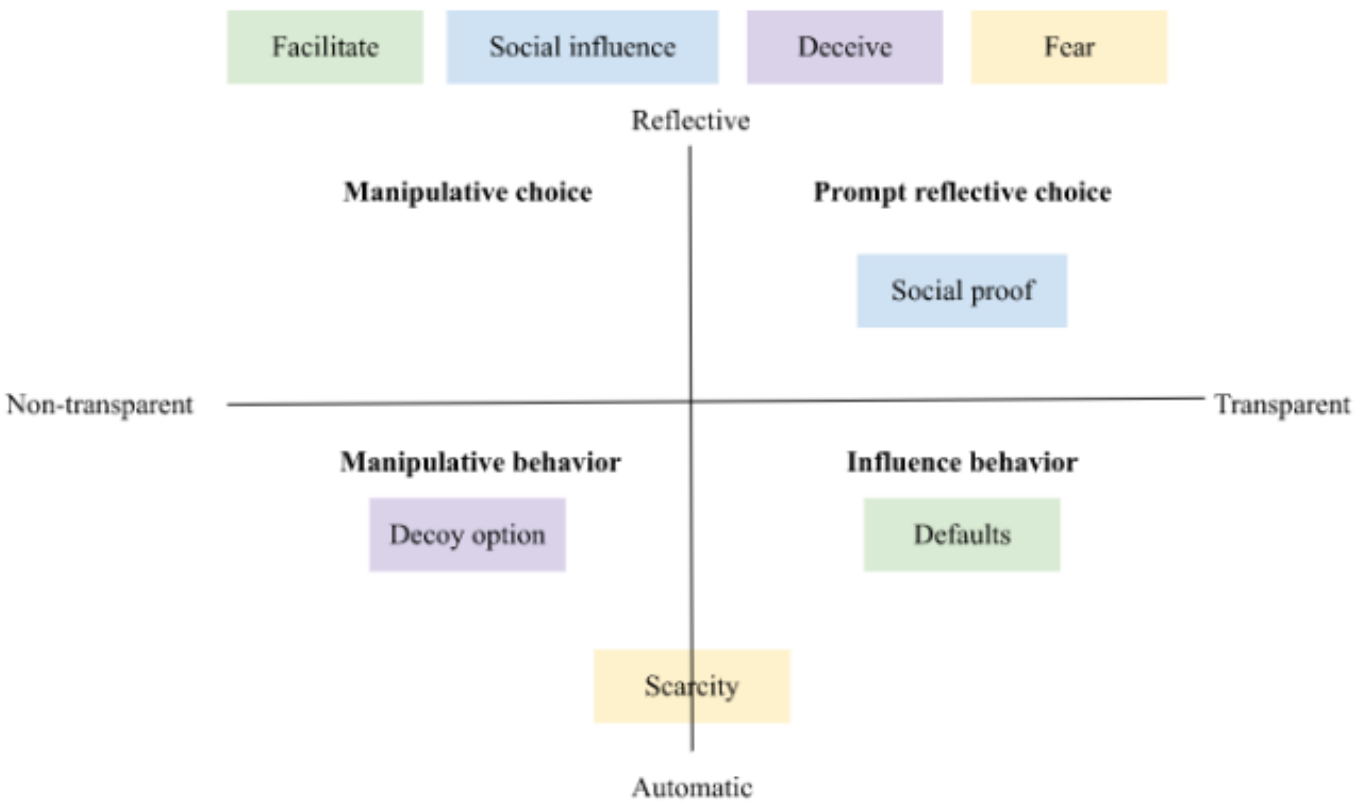

Figure 1: *The transparency and reflective-automatic axes.*

2.6 CONSUMER TRUST

Despite being a simple phrase, trust is important when choosing an online company and when deciding whether to make a purchase. The fundamental idea of marketing has evolved over the past ten years, shifting from traditional marketing to online marketing. With the success and discontent of many internet companies, trust has evolved into a crucial characteristic (Nazir et al., 2020; Urban et al., 2009). Chang et al. (2013) define

online trust as “a psychological state that allows a person to accept vulnerability based upon positive expectations of the intentions or behavior of others”.

According to Oliveira et al. (2017), online retailers should understand how customers view integrity, competence, and kindness in order to maximize the overall confidence of end users in their brand. Perceived integrity occurs when the customer concludes that the online retailer is morally upright, acts in good faith, avoids overcharging customers during transactions, fulfills his or her obligations, and is genuine. When the end user believes that the e-commerce website can handle sales transactions because they are experts in business procedures, they have achieved perceived competence. Perceived kindness occurs when a customer believes that an online store is acting in their best interests and would go above and beyond to help if necessary (Agag & El-Masry, 2017). The role of trust in economic transactions is crucial as it reduces perceived risk. This significance becomes even more pronounced in the online context where buyers and sellers are physically separated. Previous studies have indicated that individuals with low propensity to trust often exhibit negative attitudes when confronted with risky situations (Agag & El-Masry, 2017). To measure propensity to trust, a validated scale has been developed in research settings (Bianchi & Andrews, 2012; Cheung & Lee, 2001; Teo & Liu, 2007). Additionally, there exists a validated scale specifically designed to measure trust in e-commerce settings (Corbitt et al., 2003; Filieri et al., 2015; D. J. Kim et al., 2008; M.-J. Kim et al., 2011).

According to various research studies on trust in online shopping, two key parties play a crucial role in an online transaction: the e-seller who operates within the e-marketplace and the e-marketplace itself (Hong & Cho, 2011; M.-S. Kim & Ahn, 2007; Liu & Tang, 2018; Pavlou & Gefen, 2004). Trust in the e-seller is the customer's belief that the seller is honest and consistently provides high-quality products and services (Fang et al., 2014). This trust reduces the customer's perceived risk during online shopping and influences their decision to make a purchase or repeat purchases. On the other hand, trust in the e-marketplace is the customer's belief that the platform has established fair regulations and practices, is competent and reliable, and operates with integrity (Pavlou & Gefen, 2004). A trustworthy e-marketplace provides a secure and dependable environment for customers and eliminates unreliable e-sellers (Pavlou & Gefen, 2004). As a result, trust in the e-marketplace can convince customers that buying from an unfamiliar e-seller is free from risks itself (Hong & Cho, 2011; M.-S. Kim & Ahn, 2007; Liu & Tang, 2018; Pavlou & Gefen, 2004). In summary, customers' shopping behavior in an e-marketplace context is heavily influenced by their trust in the e-seller and e-marketplace (Hong & Cho, 2011; Liu & Tang, 2018).

2.8 THE RESEARCH GAP AND CONTRIBUTIONS

The majority of research on digital nudges is focused on those meant to encourage socially desirable behavior. Examples of such research is digital nudging conducted to promote environmentally sustainable behavior, reducing screentime consumption, decreasing aviation-related carbon emissions, and making better online food decisions (Berger et al., 2022; Jesse et al., 2021; Meske et al., 2022; Zimmermann & Sobolev, 2020).

Other studies have concentrated on the advantages of using digital tools, like smart devices or apps, to impose subtle pressures that encourage virtuous behaviors (Mele et al., 2021).

The libertarian paternalism approach, which prioritizes the well-being of the individual, is part of the original concept of nudging. This also holds true for digital nudging; however, research shows there is a disconnect between what is understood about digital nudging and how the corresponding requirements can really be implemented. Implementing digital nudging in a way that truly considers the welfare of individuals is challenging. Existing research does not consider the numerous digital nudges presented in digital environments that affect consumers' decisions when making purchases online (Meske et al., 2022). Digital nudges are impacting decision-making processes and behaviors; therefore, it is important to examine how they consider consumer welfare and analyze human and non-human actors that shape digital environments.

Further, less research has been done on the moral ramifications of adopting digital nudges and how they could reinforce pre-existing biases or inequality. The definitions demonstrate that at its foundation, digital nudging always involves influencing (or manipulating) human behavior, which creates certain ethical considerations. There is a need for articles to investigate whether the suggested nudge makes participants feel pressured or manipulated.

2.7 HYPOTHESIS OVERVIEW

The literature review suggests that default nudges, such as pre-selected options, can significantly impact consumer behavior. Default options often serve as a cognitive shortcut for decision-making, leading individuals to stick with the default choice. The existing research also indicates that default options can influence trust by creating a sense of convenience and reliability (Hummel & Maedche, 2019; Last et al., 2021; Paunov et al., 2022; Shah & Kesan, 2006). Therefore, it is hypothesized that default nudges implemented in the Netflix condition will positively influence consumer trust. The default option is positioned in the “influence behavior” section on the transparency and reflective-automatic axes of Hansen and Jespersen's framework (Caraban et al., 2019).

H1: Digital nudges that aim to influence behavior in the Netflix condition will have a positive effect on consumer trust.

Social proof nudges, which leverage the influence of others' choices, have been shown to impact decision-making and behavior. The literature review suggests that when individuals observe others making a particular choice, they are more likely to perceive it as a socially acceptable and a trustworthy option (Caraban et al., 2019; Festinger, 1954; Roks, 2015; Schneider et al., 2018; Sherlin et al., 2020). Therefore, it is hypothesized that social proof nudges implemented in the Zalando condition will positively influence consumer trust. The scarcity nudge is positioned in the “prompt reflective choice” section the transparency and reflective-automatic axes of Hansen and Jespersen's framework (Caraban et al., 2019).

H2: Digital nudges that aim to prompt reflective choice in the Zalando condition will have a positive effect on consumer trust.

The literature review indicates that decoy nudges, which introduce irrelevant options to manipulate decision-making, can have negative effects on consumer trust (Huber et al., 1982; Schneider et al., 2018). When individuals perceive that their choices are being manipulated or influenced by irrelevant options, it can lead to a decrease in trust towards the provider. Therefore, it is hypothesized that decoy nudges implemented in the Apple condition will have a negative effect on consumer trust. The decoy nudge is positioned in "manipulate behavior" section on the transparency and reflective-automatic axes of Hansen and Jespersen's framework (Caraban et al., 2019).

H3: Digital nudges that aim to manipulate behavior in the Apple condition will have a negative effect on consumer trust.

Scarcity nudges, such as limited availability or time-limited offers, have been shown to influence consumer behavior. However, the literature review suggests that when scarcity cues are perceived as manipulative or deceptive, it can result in a decrease in trust. It is hypothesized that scarcity nudges implemented in the Booking.com condition, with a careful balance between influencing behavior and manipulative tactics, may have a negative effect on consumer trust. Scarcity nudges are positioned between «manipulative behavior" and "influencing behavior" on the transparency and reflective-automatic axes of Hansen and Jespersen's framework (Cialdini, 2021; Johnson et al., 2012).

H4: Digital nudges that are between manipulative behavior and influencing behavior in the Booking.com condition may have a negative effect on consumer trust.

The literature review highlights the importance of ethical considerations in consumer trust formation. It suggests that when individuals perceive the digital nudges as ethically appropriate, it positively influences their trust towards the brand. Therefore, it is hypothesized that participants' perceptions of ethicality will mediate the relationship between the implemented digital nudge and consumer trust. Transparency is a key factor in building consumer trust. The literature review indicates that when individuals perceive the digital nudges as transparent, providing clear information about their purpose and impact, it enhances their trust towards the brand. Therefore, it is hypothesized that participants' perceptions of transparency will mediate the relationship between the implemented digital nudge and consumer trust. The following hypotheses has been developed based on the existing literature, the study aims to investigate the effects of different digital nudges on consumer trust and understand the underlying mechanisms through which these effects occur.

H5a: Participants' perceptions of ethicality will mediate the relationship between the digital nudge and consumer trust towards the brand.

H5b: Participants' perceptions of transparency will mediate the relationship between the digital nudge and consumer trust towards the brand.

2.8 CONCEPTUAL FRAMEWORK

The independent variable in this model is different types of digital nudges. Each respondent will experience one of the four chosen nudges: the default choice, the decoy effect, the scarcity impact, or the social proof nudge. The dependent variable in this model is consumer trust, which refers to participants' overall perception of the brand. The perceived degree of ethicality and transparency serves as the mediators in this framework.

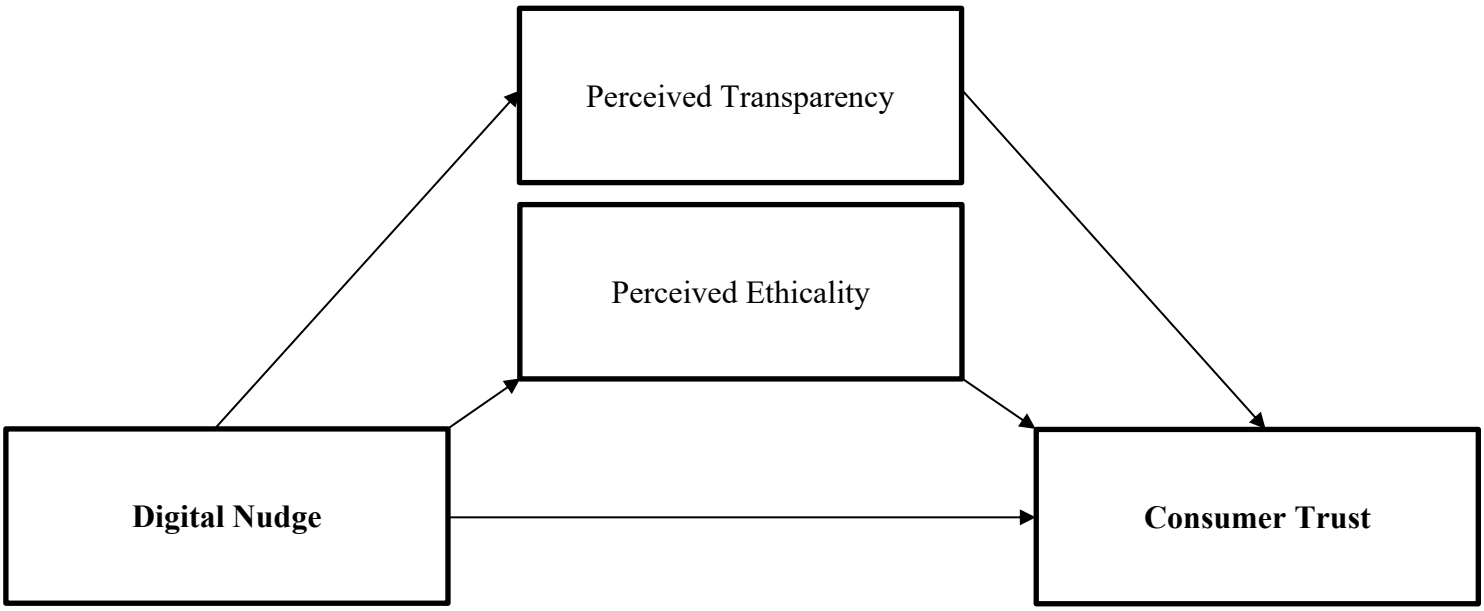

Figure 2*: Conceptual Framework*

CHAPTER 3 - RESEARCH METHODOLOGY

3.1 OBJECTIVE

The purpose of this study is to investigate how different types of digital nudges influence consumer trust. In recent years, digital nudges have become increasingly prevalent in online environments, and are used to influence consumer behavior in various ways. The aim of this study is to explore the impact of four types of digital nudges on consumer trust: default setting, decoy effect, scarcity effect, and social proof. In addition, this study aims to examine the mediating factors that may explain the effects of digital nudges on consumer trust. Specifically, the study will investigate how the level of transparency and perceived ethicality in the digital nudge may impact consumer trust. In the following section I will further elaborate on the chosen research design and describe the data collection process in more detail.

3.2 PARTICIPANTS SAMPLING

To gather a diverse sample of participants from across Europe who are familiar with online shopping, a quantitative approach utilizing an online survey was chosen. This method is both cost-effective and efficient, allowing for a large number of participants to be gathered in a relatively short period of time. Non-probability sampling was used to recruit participants through social media platforms such as Instagram, LinkedIn, and Facebook. Participants were also encouraged to share the study with their networks, creating a virtual snowball effect and enabling me to reach a broader range of individuals from different locations in Europe (Malhotra, 2010).

For this study, a convenience sampling technique was utilized to gather many respondents who regularly engage in online shopping. While this technique has advantages, such as the ease of collecting many responses and the trust participants have in the researchers when the study is shared through personal profiles on social media platforms, it also has disadvantages (Baltar & Brunet, 2012). The disadvantage of convenience sampling is that it has the potential to result in an unrepresentative sample in terms of demographic and characteristic factors such as gender, age, occupation, and income (Baltar & Brunet, 2012). It is important to note that theoretically, generalizing from this type of sample is not recommended (Baltar & Brunet, 2012). However, as the primary objective of this study is to examine the effects of digital nudges on consumer trust, convenience sampling was deemed an acceptable method for collecting data efficiently. Additionally, it complemented the exploratory nature of the research, whose goal was to produce insights for the selected issue (Malhotra, 2010).

3.3 SURVEY DESIGN

Through the use of the Qualtrics Survey Software, I adopted a quantitative survey-based experiment methodology (Malhotra, 2010). The research design for this study will be a between-subjects experimental design. This design is well-suited for testing the effects of different types of digital nudges on consumer trust,

as it allows for the manipulation of the independent variable (digital nudge type) and the comparison of the effects on the dependent variable (consumer trust) across different groups. Participants will be randomly assigned to one of four conditions, each of which will be exposed to a different type of digital nudge: default, social proof, decoy option, or scarcity. The choice of these four types of nudges was informed by previous research on digital nudging and their potential impact on consumer trust.

In each condition of the study, participants are presented with a specific brand and a digital nudge, while the general structure of the experiment remains constant. Before being exposed to the nudge, participants are asked about their familiarity with the brand. In addition to measure their propensity to trust, a validated scale that has been developed in research settings by Bianchi & Andrews (2012), Cheung & Lee (2001), Teo & Liu (2007). And finally their trust toward the specific brand in question with a scale developed by Corbitt et al., (2003), Filieri et al. (2015), D. J. Kim et al. (2008), & M.-J. Kim et al. (2011). The nudge is presented to all participants without indicating that it is an attempt to influence consumer behavior.

After being exposed to the nudge, participants will answer a scale with certain items developed to measure perceived persuasiveness. Thomas et al., (2019) created and validated a scale for measuring the perceived persuasiveness of digital behavior interventions. All items on the scale are measured using a 7-point Likert Scale. Respondents are asked to rate their level of agreement with the items, where 7 represents a highly positive association and 1 represents a highly negative association. Participants are instructed to rate the items based on their personal preferences and how well they align with them.

After participants are presented with a specific brand and nudge, they are informed that the feature they just saw is a digital nudge and an attempt to influence their behavior. Participants are then asked to rate their level of awareness regarding the nudge, using a scale that ranges from "not aware at all" to "extremely aware". To assess the level of transparency respondents are asked to rate their level of agreeableness to several statements. Lastly respondents will be asked questions relating to consumer trust on a 7-point Likert Scale. The scale will range from 1 (low trust) to 7 (high trust), and participants will be asked to rate their trust in the company based on their overall impression of the digital nudge and the company's motives. This will be the exact same questions as the respondents received before the exposure to the nudge and developed by Corbitt et al., (2003), Filieri et al. (2015), D. J. Kim et al. (2008), & M.-J. Kim et al. (2011). This uniform design of the experiment will apply to all four conditions, enabling comparisons to be conducted across various brands and nudges while controlling for extraneous variables.

3.4 EXPERIMENT MANIPULATION

The chosen brands in the conditions are (1) Netflix, (2) Zalando, (3) Apple.com, and (4) Booking.com. These brands were chosen because they are well-known and have a strong market presence, which increases the likelihood that respondents will recognize them. In addition to them being international brands which ensures a diverse sample selection. This section will elaborate on the chosen nudge within each condition.

Condition 1: The Default Option (Appendix 1C)

The first condition involves the utilization of a streaming platform, specifically Netflix, where participants are exposed to a default nudge. In this particular case, the selected default nudge pertains to the autoplay function of Netflix. This feature prompts viewers to automatically proceed to the next episode without requiring any explicit action, thus encouraging continued engagement with the content. Participants are then requested to envision a scenario involving the autoplay feature and subsequently respond to a series of questions that seek to evaluate the impact of the nudge on their viewing behavior.

Condition 2: Social Proof (Appendix 1C)

The second condition demonstrates the utilization of reviews and rating systems within the online marketplace Zalando as a form of nudge. Specifically, this nudge is referred to as "social proof," whereby reviews and a rating system are prominently displayed to encourage customers to make a purchase. This subtle technique serves to influence the customer's decision-making process by demonstrating that others have had positive experiences with the product or service offered by Zalando. By employing social proof, Zalando is able to guide customers towards making a purchase without exerting overt pressure. In this scenario, participants are presented with a gender-neutral t-shirt accompanied by reviews and a fitting scenario to evaluate the effectiveness of this nudge on their purchasing behavior.

Condition 3: The Decoy Effect (Appendix 1C)

The third condition illustrates the decoy effect as applied to Apple´s website, specifically in relation to the promotion of the iPhone 14 models. The website typically presents three product options that are similarly priced, with the intention of nudging customers towards a particular choice. This technique is known as digital nudging, and specifically involves the use of the decoy effect. This strategy involves presenting a third, less attractive option that is designed to influence the customer's decision in favor of one of the other two alternatives. In this case, participants are instructed to review a scenario where they are considering which version of the iPhone 14 to purchase and the corresponding thought process. The objective is to evaluate the decoy effect on the customer's trust towards Apple.

Condition 4: Scarcity (Appendix 1C)

The fourth condition of the study utilizes "scarcity" nudging tactics, exemplified by Booking.com. Participants are presented with subtle prompts or cues that create a feeling of urgency or scarcity, such as displaying messages like "Only 5 rooms left" for a particular hotel. These messages are intended to encourage individuals to make a swift purchase decision before the product or service becomes unavailable.

3.6 PRE-TEST

Prior to conducting the survey-based experiment using Qualtrics Survey Software, several pre-tests were conducted to ensure the survey design was appropriate, valid, and reliable. The pre-tests included pilot testing, validity and reliability testing, and a randomization check. Pilot testing was conducted with a small sample of participants to identify any potential issues, such as unclear instructions or confusing questions. This pre-test helped to ensure that the survey measures what it is intended to measure and that the survey design is appropriate. Validity and reliability testing were also conducted to ensure that the survey questions accurately measured what they were intended to measure and that they were consistent. A randomization check was conducted to ensure that the randomization process was effective in assigning participants to the different conditions. This pre-test helped to ensure that there were no significant differences between the groups in terms of demographic or other relevant variables.

3.7 ETHICAL CONSIDERATION

To ensure compliance with current regulations, I followed the BI's "Checklist for use of personal information in a student assignment" regarding ethical considerations. I made participation in the study entirely voluntary and assured participants that their information would be kept confidential and anonymous. Moreover, I clearly communicated the purpose of the study to all potential participants and required their acceptance of participation before proceeding to the survey. Finally, to preserve the privacy of the participants, I deleted all survey data once my thesis was submitted.

3.8 DATA PREPARATION

Prior to running the analyses, the data set was prepared. After a three-week period of data collection, a total of 250 responses were obtained. However, eight responses were excluded due to incompleteness, and two participants were identified as having provided unreliable answers as they gave the same score for all items. As a result, the final sample size was reduced from n = 250 to n = 240.

3.8.1 Descriptive Statistics

The final sample consisted of 107 respondents from the male section and 133 from the female section. The age distribution of the respondents showed a preponderance of participants between the ages of 20-29 (42.5%) and over 50 years old (18.8%), which was anticipated due to the convenience sampling method used and the proximity of my own age to the sample population. In terms of employment status, the majority of respondents were recorded as employed, with 55.8% being fully employed and approximately 27.5% being students. The highest level of education among the respondents was a master´s degree (44.6%) followed by a bachelor´s degree (41.3%).

Furthermore, respondents were also questioned about their online purchasing habits. Approximately 40% of the participants answered, "a lot" and 30% answered "a great deal" when asked about the frequency

of their online purchasing decisions. When asked about their comfort level with making decisions online, approximately 43% of respondents answered, "somewhat comfortable" and approximately 43% answered "extremely comfortable". These findings indicate that a significant portion of the participants engage in frequent online shopping and are comfortable with making decisions online.

3.8.2 Factor Analysis

Conducting a factor analysis to validate measurement scales is crucial before proceeding with any further analysis. The primary aim of a factor analysis is to evaluate the validity of the measurement, which pertains to how effectively the variables being measured align with their intended constructs (Silkoset & Gripsrud, 2010). To ensure that there were no discrepancies in the validity of measurements between conditions, I conducted separate factor analyses within each condition.

In order to assess the convergent validity of the construct in each condition, I initially verified whether a factor analysis was suitable to conduct. This was determined by evaluating the Kaiser-Meyer-Olkin Measure (KMO) of sampling adequacy, which exceeded 0.50 in all conditions. Additionally, a significant Bartlett's test of sphericity was observed (p=0.001) in all conditions, further confirming the appropriateness of conducting a factor analysis.

Table 1: Barlett´s Test of Sphericity

	Bartlett's Test of Sphericity			
Brand	**Kaiser-Meyer-Olkin Measure of Sampling Adequacy**	**Approx. Chi-Square**	**df**	**Sig.**
Netflix	.528	1385.737	595	<.001
Zalando	.642	2541.889	561	<.001
Apple	.523	2069.573	561	<.001
Booking.com	.543	2226.683	561	<.001

Once it was determined that a factor analysis was appropriate, I went forward with a principal component analysis with a varimax procedure (Appendix 2A). This method would minimize the number of loadings on a factor, enhancing the interpretability of the factors (Malhotra, 2010). Upon analyzing the results, it became evident that each condition had six components, and that a single factor for these constructs was appropriate. The factors identified were familiarity, consumer disposition to trust, consumer trust towards the brand, ethicality scale, transparency, and trust after exposure. This conclusion was drawn based on the component matrix, which revealed that all factors loaded onto a single factor with high factor loadings close to 1. From the rotated component matrix, I could also see that all questions loaded on the correct factors, enabling me to conclude that it actually was six factors and proceed to other analyses (Appendix 2A, 2B, 2C).

Additionally, the appropriateness of retaining six factors was supported by the three factor retention criteria. The first criterion, Kaiser's rule, suggests that only factors with eigenvalues greater than 1 should be

retained, which was applicable for all four conditions (Malhotra, 2010). The second criterion was that the total variance explained by the six factors should account for at least 60% of the variance, which was surpassed in all conditions with 76.448%, 80.461%, 78.071%, and 74.047%, respectively (Appendix B).

3.8.3 Reliability Test

Further Cronbach's Alpha tests were conducted to evaluate the internal consistency reliability and determine if the items measured the same construct. The Cronbach's Alpha coefficient (α) ranges from 0 to 1, with a value of 0.7 or higher typically indicating acceptable internal consistency reliability (Malhotra, 2010). Based on the results presented below, all constructs with more than one item in the questionnaire demonstrated an acceptable level of reliability, providing additional support for the findings obtained from the factor analyses.

Table 2: Reliability Statistics

Reliability Statistics			
Brand	**Cronbach's Alpha**	**Cronbach's Alpha Based on Standardized Items**	**N of Items**
Netflix	.837	.854	35
Zalando	.862	.857	35
Apple	.770	.794	35
Booking.com	.887	.886	35

3.8.4 Indexing

The analysis was improved by combining variables that contained multiple items and had passed both the factor analyses and reliability tests (consumer trust towards the brand, ethicality scale, transparency, and trust after exposure) into index variables. This allowed for a more accurate and comprehensive measurement of the underlying concepts of interest. Consequently, five variables were obtained from each condition, namely "Trust Before Exposure", "Trust After Exposure", "Difference Trust", "Transparency", and "Ethicality". To simplify the analysis and enable comparisons across all conditions, the identical variables from each condition were aggregated into a single variable that represented all conditions. By doing so, the analysis was streamlined and made more comprehensive, as it used a uniform set of variables across all conditions.

CHAPTER 4 - RESULTS

4.1 THE MAIN EFFECT OF DIGITAL NUDGES ON CONSUMER TRUST

4.1.1 The univariate analysis - ANOVA

A univariate analysis was performed to investigate the relationship between the independent variable "All conditions" and the dependent variable "Difference in Trust". The variable "Difference in Trust" was obtained by subtracting "Trust Before Exposure" from "Trust After Exposure", thereby quantifying the change in trust experienced by participants following exposure to the manipulation. The univariate analysis conducted in this study yielded several important findings. Firstly, the test of between-subjects effects (Table 3) indicate that the conditions have a significant effect on "Difference in Trust," as the model as a whole is statistically significant. The Partial Eta Squared values suggest that the conditions explain a substantial portion of the variance in "Difference in Trust."

Table 3: Test of Between-Subjects Effects

Tests of Between-Subjects Effects						
Dependent Variable: Difference in Trust						
Source	**Type of sum squares**	**df**	**Mean square**	**F**	**Sig**	**Partial Eta squared**
Corrected Model	412.242	3	137.414	178.372	<.001	.694
Intercept	34.504	1	34.504	44.789	<.001	.160
All Conditions	412.242	3	137.414	178.372	<.001	.694
Error	181.809	236	.770			
Total	628.556	240				
Corrected Total	594.051	239				
a. R Squared = ,694 (Adjusted R Squared = ,690)						

Additionally, the Levene's test of equality of error variances and the F test for heteroskedasticity were both significant with p-values of 0.007 and 0.012, respectively. This indicates that there is heterogeneity of variance between groups, and that the variance of the errors depends on the values of the independent variables. Table 4 displays the descriptive statistics and mean scores of each condition. Notably, the negative values in the mean scores of the Apple and Booking.com conditions suggest that, on average, participants in these conditions reported lower levels of trust after exposure to the digital nudges compared to their initial levels of trust. Participants in the Netflix and Zalando conditions reported higher levels of trust after exposure to the digital nudges compared to their initial levels of trust. As such, these findings provide support for hypotheses 1, 2, 3 and 4. While these results align with the expected direction of the hypotheses, it is essential to conduct

statistical analyses to determine the significance of the differences in means and to provide more conclusive evidence in support of the hypotheses.

Table 4: Descriptive Statistics

Descriptive Statistics			
Dependent Variable: Difference in Trust			
All conditions	Mean	Std. Deviation	N
Netflix	1.0222	.87628	60
Zalando	.8278	.55741	60
Apple	-1.8389	.99432	60
Booking.com	-1.5278	1.00712	60
Total	-.3792	1.57657	240

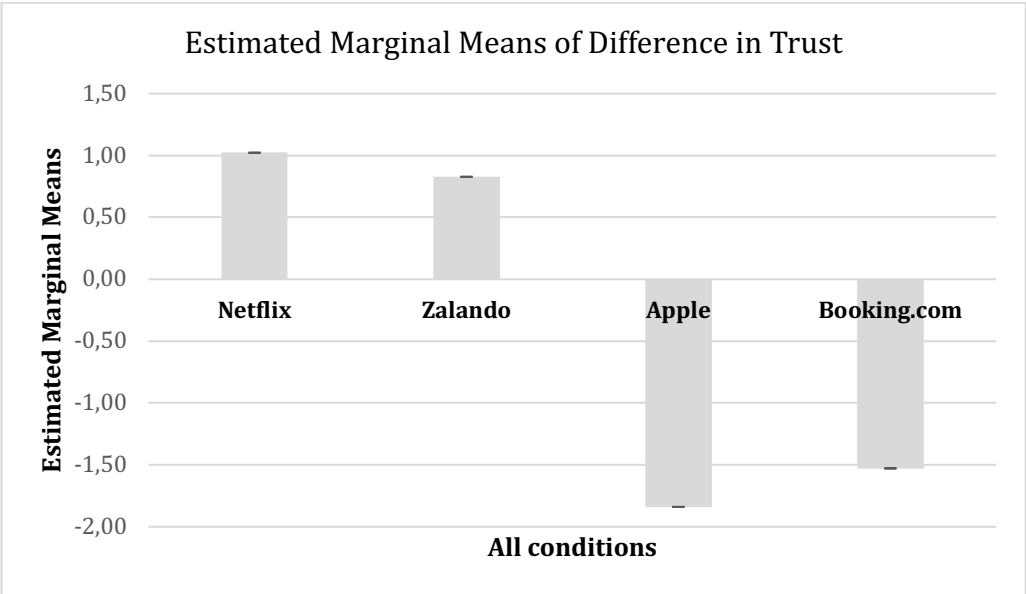

Figure 3: *Estimated Marginal Means of Difference in Trust*

Table 5 illustrate the results of multiple comparisons using the Bonferroni method for the dependent variable, "Difference in Trust." The mean differences between all conditions are presented, along with their standard error, significance level, and 95% confidence interval.

Table 5: Multiple Comparisons

Multiple Comparisons					
Dependent Variable: Difference in Trust					
Bonferroni					
					95% Confidence Interval

(I) All conditions	(J) All conditions	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Netflix	Zalando	.1944	.16025	1.000	-.2319	.6208
	Apple	2.8611*	.16025	<.001	2.4347	3.2875
	Booking.com	2.5500*	.16025	<.001	2.1236	2.9764
Zalando	Netflix	-.1944	.16025	1.000	-.6208	.2319
	Apple	2.6667*	.16025	<.001	2.2403	3.0930
	Booking.com	2.3556*	.16025	<.001	1.9292	2.7819
Apple	Netflix	-2.8611*	.16025	<.001	-3.2875	-2.4347
	Zalando	-2.6667*	.16025	<.001	-3.0930	-2.2403
	Booking.com	-.3111	.16025	.320	-.7375	.1153
Booking.com	Netflix	-2.5500*	.16025	<.001	-2.9764	-2.1236
	Zalando	-2.3556*	.16025	<.001	-2.7819	-1.9292
	Apple	.3111	.16025	.320	-.1153	.7375

Based on observed means.
The error term is Mean Square (Error) = ,770.
*. The mean difference is significant at the .05 level.

H1: Digital nudges that aim to influence behavior in the Netflix condition will have a positive effect on consumer trust.

The descriptive statistics show that the mean "Difference in Trust" for the Netflix condition is 1.0222, with a standard deviation of 0.87628 (Table 4). The Multiple Comparisons table indicates that there is no significant mean difference between the Netflix and Zalando conditions ($p = 1.000$), suggesting that the effect of nudges on trust is similar between these conditions. However, there is a significant mean difference between Netflix and both Apple ($p < .001$) and Booking.com ($p < .001$) conditions (Table 5). The confidence intervals also show that the mean difference for Netflix compared to Apple and Booking.com is positive. These findings support H1, suggesting that digital nudges aiming to influence behavior in the Netflix condition have a positive effect on consumer trust.

H2: Digital nudges that aim to prompt reflective choice in the Zalando condition will have a positive effect on consumer trust.

The descriptive statistics indicate that the mean Difference in Trust for the Zalando condition is 0.8278, with a standard deviation of 0.55741 (Table 4). The Multiple Comparisons table reveals that there is no significant mean difference between Zalando and Netflix conditions ($p = 1.000$), implying that the effect of nudges on trust is comparable between these conditions. Additionally, there are significant mean differences between Zalando and both Apple ($p < .001$) and Booking.com ($p < .001$) conditions, with positive mean differences (Table 5). These findings provide support for H2, suggesting that digital nudges prompting reflective choice in the Zalando condition have a positive effect on consumer trust.

H3: Digital nudges that aim to manipulate behavior in the Apple condition will have a negative effect on consumer trust.

The descriptive statistics show that the mean Difference in Trust for the Apple condition is -1.8389, with a standard deviation of 0.99432 (Table 4). The Multiple Comparisons table indicates significant mean differences between Apple and both Netflix ($p < .001$) and Zalando ($p < .001$) conditions. The confidence intervals reveal that the mean differences for Apple compared to Netflix and Zalando are negative (Table 5). These findings support H3, suggesting that digital nudges aiming to manipulate behavior in the Apple condition have a negative effect on consumer trust.

H4: Digital nudges that are between manipulative behavior and influencing behavior in the Booking.com condition may have a negative effect on consumer trust.

The descriptive statistics show that the mean Difference in Trust for the Booking.com condition is -1.5278, with a standard deviation of 1.00712 (Table 4). The Multiple Comparisons table indicates significant mean differences between Booking.com and both Netflix ($p < .001$) and Zalando ($p < .001$) conditions. However, there is no significant mean difference between Booking.com and Apple condition ($p = 0.320$) (Table 5). These findings suggest that digital nudges balancing between manipulative and influencing behavior in the Booking.com condition may have a negative effect on consumer trust.

I conclude from the univariate analysis there is efficient support for H1, H2, H3, and H4 indicating the expected effects of digital nudges on consumer trust in the respective conditions.

4.2. MEDIATION EFFECT OF PERCEIVED TRANSPARENCY AND ETHICALITY

To test the mediation effect, the regression analysis PROCESS (model 4) with a bootstrap sample of n = 5000 and a 95% confidence interval was used. The independent variable digital nudge is coded (1 = Netflix, 2 = Zalando, 3 = Apple and 4 = Booking.com) and called "All conditions". The regression analysis was conducted to capture the effect of perceived ethicality and transparency on the dependent variable (consumer trust).

H5a: Participants' perceptions of ethicality will mediate the relationship between the digital nudge and consumer trust towards the brand.

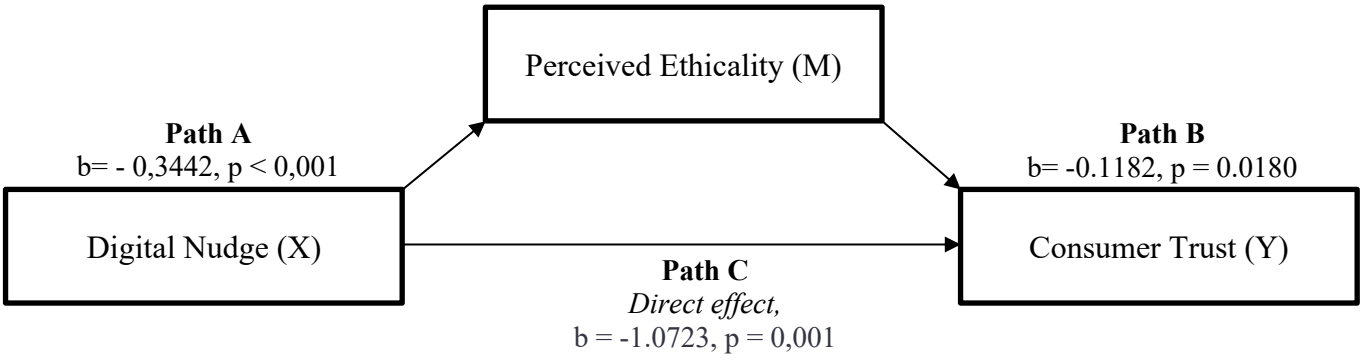

Figure 4: *Path diagram for the mediator ethicality*

The results of the analysis provide valuable insights into the relationship between the digital nudge condition, participants' perceptions of ethicality, and the difference in trust. The analysis showed a R^2 value of .3382 indicating that the model accounted for 33.82 % of the variance in Difference in Trust. For the purpose of this thesis, this is considered satisfactory. Firstly, the coefficient for path A was -0.3442, with a highly significant p-value of less than 0.001. This finding suggests that the digital nudge condition has a strong and statistically significant effect on shaping participants' perceptions of ethicality.

Secondly, the coefficient for path C was -1.0723, with a p-value of less than 0.001. This indicates a substantial and statistically significant impact of the digital nudge condition on the difference in trust among participants. The results suggest that the digital nudge has a significant influence on shaping consumer trust. Furthermore, the coefficient for path B was -0.1182, with a p-value of 0.0180. This coefficient signifies a statistically significant relationship, although it falls slightly short of the conventional significance level of 0.05. The findings suggest that participants' perceptions of ethicality may have a mediating effect on the relationship between the digital nudge and consumer trust towards the brand.

Connecting these results to hypothesis H5a, which proposes that participants' perceptions of ethicality mediate the relationship between the digital nudge and consumer trust towards the brand, the analysis provides support for the hypothesis. The study demonstrates that the digital nudge condition significantly influences both participants' perceptions of ethicality and the difference in trust. Based on this, I can accept H5a.

H5b: Participants' perceptions of transparency will mediate the relationship between the digital nudge and consumer trust towards the brand.

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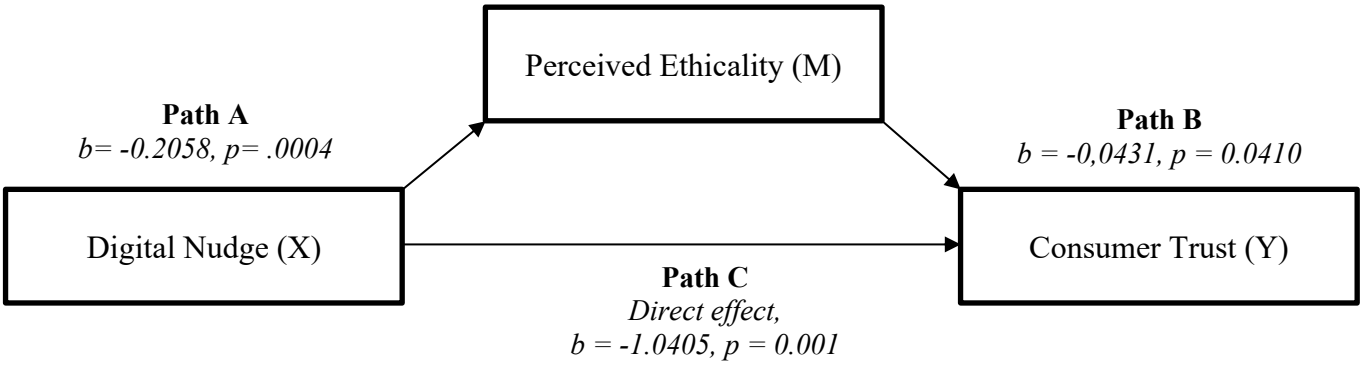

Figure 5: *Path diagram for the mediator transparency*

The analysis showed a R^2 value of .2272 indicating that the model accounted for 22.72 % of the variance in Difference in Trust. Path A examined the relationship between the digital nudge condition (ALL_COND) and participants' perceptions of transparency (Trans_p). The coefficient of -0.2058 indicates that the digital nudge condition has a negative effect on participants' perceptions of transparency. This means that when exposed to

the digital nudge, participants tend to perceive lower levels of transparency. The statistical significance of this effect is supported by a p-value of 0.0004, indicating that the observed relationship is highly unlikely to occur by chance.

Path C explored the direct relationship between the digital nudge condition (ALL_COND) and the difference in trust (Differen). The coefficient of -1.0405 suggests that the digital nudge condition negatively influences the difference in trust. Specifically, participants exposed to the digital nudge tend to exhibit lower levels of trust towards the brand. The statistical significance of this effect is further substantiated by a p-value of less than 0.001, indicating a highly significant relationship. Furthermore, path C examined the effect of participants' perceptions of transparency (Trans_p) on the difference in trust (Differen). The coefficient of -0.0431 indicates a negative relationship, suggesting that as participants' perceptions of transparency decrease, the difference in trust also decreases. In addition to the p value being 0.0410 which is below the threshold of 0.05. Based on these findings, I can accept H5b.

4.3 RESULTS OVERVIEW

Table 6: Results

Hypothesis	Results	Confidence Interval
H1	Supported with statistical evidence	95%
H2	Supported with statistical evidence	95%
H3	Supported with statistical evidence	95%
H4	Supported with statistical evidence	95%
H5a	Supported with statistical evidence	95%
H5b	Supported with statistical evidence	95%

CHAPTER 5 - CONCLUSION

5.1 DISCUSSION

This master thesis has explored the power of digital nudging and its effect on consumer trust. Drawing on earlier research, this study attempts to answer the following research question: *How do different types of digital nudges affect consumer trust in online environments, and what role do perceptions of ethicality and transparency play in this relationship?*

The analysis of this study posited that the implementation of digital nudges in the Netflix and Zalando conditions would yield a favorable impact on consumer trust. The Netflix condition featured a default nudge designed to simplify decision-making, while the Zalando condition included a social proof nudge intended to prompt reflective choice. The first hypothesis, H1, predicted that digital nudges in the Netflix condition would increase consumer trust. The literature review provided evidence that default nudges, such as the one used in the Netflix condition, can simplify decision-making processes for individuals, and that defaulting has been proven to be the most effective technique in the influence toolbox (Hummel & Maedche, 2019; Last et al., 2021). Moreover, trust in the e-marketplace is based on the customer's belief that the platform is secure and dependable, and that it eliminates unreliable e-sellers. Thus, a default nudge can be viewed as a feature built to ease the experience of the end-user (Pavlou & Gefen, 2004). The significant mean difference between Netflix and both the Apple ($p < .001$) and Booking.com ($p < .001$) conditions suggests that digital nudges aiming to influence behavior in the Netflix condition have a positive effect on consumer trust. These findings provide further support for the effectiveness of default nudges in increasing consumer trust in online shopping. The second hypothesis, H2, predicted that digital nudges in the Zalando condition would increase consumer trust. The literature review provided evidence that social proof nudges, which capitalize on people's desire to conform and comply with what is seen to be required of them, can reduce consumers' perceived risk during online shopping and increase trust in the e-seller (Caraban et al., 2019). The results from the multiple comparisons table indicate that there is no significant mean difference between the Zalando and Netflix conditions ($p = 1.000$), suggesting that the impact of nudges on trust is similar between these conditions. Moreover, there are significant mean differences between the Zalando condition and both the Apple ($p < .001$) and Booking.com ($p < .001$) conditions, with positive mean differences. These findings provide evidence in favor of Hypothesis 2, suggesting that digital nudges designed to prompt reflective choice in the Zalando condition have a positive effect on consumer trust. These findings provide further support for the effectiveness of social proof nudges in increasing consumer trust in online shopping.

The analysis of this study posited that the implementation of digital nudges in the Booking.com and Apple conditions would yield a negative impact on consumer trust. The Booking.com condition featured a scarcity nudge designed urge consumers to make decisions, while the Apple condition included a decoy nudge intended to manipulate consumers into choosing a product. The results of the study provide evidence supporting the hypothesis that digital nudges can have a negative effect on consumer trust. The negative values

in the mean scores of these conditions suggest that participants reported lower levels of trust after exposure to the digital nudges compared to their initial levels of trust. These findings are consistent with the literature on digital nudges, which suggests that certain categories of nudges, such as the "deceive" and "fear" categories, can be particularly manipulative and potentially erode consumer trust (Caraban et al., 2019). The decoy effect is a deceptive mechanism that shapes how alternatives are perceived with the purpose of promoting specific outcomes. In the context of digital marketplaces, the decoy effect can be exploited to manipulate consumers' decision-making processes by introducing a decoy option that is strategically designed to steer them toward a certain product or service (Huber et al. 2014). This intentional nature of nudging may not align with consumers' own values and can therefore undermine their trust in the platform (Hansen & Jespersen, 2013). The results showcased that the mean difference is significant and negative, supporting the negative effect of the decoy effect in the Apple condition. The scarcity nudge used in the Booking.com condition induces feelings of fear, loss, and uncertainty, compelling users to act swiftly and possibly prioritize short-term rewards. When consumers reflect on their choices, they may regret prioritizing short-term rewards, leading to lower levels of trust in the e-marketplace. Trust in the e-marketplace is crucial for consumers, as it indicates that the platform has established fair regulations and practices, is competent and reliable, and operates with integrity. A trustworthy e-marketplace provides a secure and dependable environment for customers and eliminates unreliable e-sellers (Pavlou & Gefen, 2004). Thus, if customers recognize that the sense of urgency created by the scarcity nudge was false, this could affect their perception of the platform's reliability and integrity. For H4, there are significant mean differences between Booking.com and both Netflix and Zalando conditions, suggesting a potential negative effect. Moreover, the absence of a significant difference between the Booking.com condition and the Apple condition can be explained by considering the positioning of the scarcity nudge within the framework proposed by Hansen and Jespersen (Caraban et al., 2019). According to this framework, the scarcity nudge falls between manipulative behavior and influence behavior on the transparency and reflective-automatic axes. Consequently, it is logical to observe that the decoy nudge (representing manipulative behavior) and the scarcity nudge (occupying a position between manipulative behavior and influence behavior) are not significantly different from each other.

Existing literature suggests that digital nudging may raise ethical concerns, as it may promote certain values that do not align with the individual's own values. Hypothesis 5a investigated whether participants' perceptions of ethicality mediate the relationship between the digital nudge and consumer trust towards the brand. The findings indicated that this hypothesis was correct. The digital nudge had a significant negative effect on consumer trust towards the brand. However, if participants perceived the nudge as being aligned with their values, their trust towards the brand increased. Therefore, companies should be cautious when implementing digital nudges and ensure that they align with the values of their target audience. In conclusion, this study highlights the importance of considering ethical concerns when implementing digital nudges and provides evidence that participants' perceptions of ethicality mediate the relationship between the digital nudge and consumer trust towards the brand.

Hypothesis 5b aimed to investigate the mediating role of participants' perceptions of transparency in the relationship between the digital nudge and consumer trust towards the brand. The hypothesis was based on the assumption that transparency would enhance the perceived legitimacy of the nudge and, in turn, foster trust in the brand. This assumption is supported by previous scholarly discussions on the positive effects of transparency on trust (Bogens, 2009; Felsen et al., 2013; Hansen, 2016; Hansen & Jespersen, 2013; Vallgårda, 2012). The findings of this study provide compelling evidence in support of hypothesis 5b, as the mediating effect of participants' perceptions of transparency on the relationship between the digital nudge and consumer trust towards the brand was found to be statistically significant. The indirect effect of the digital nudge on consumer trust through the mediator of participants' perceptions of transparency was estimated to be significant, with the confidence interval not including zero. These results affirm the initial hypothesis and contribute to the body of knowledge by demonstrating the positive impact of transparent nudges on consumer trust in the brand.

5.2 ACADEMIC IMPLICATIONS

The academic implications of this study are multifaceted and contribute to the existing literature on digital nudging and its impact on consumer trust. The findings offer valuable insights and raise important considerations that can inform future research and guide practitioners in the field. Firstly, this study provides empirical evidence on the relationship between different types of digital nudges and consumer trust in online environments. The positive impact of default and social proof nudges on consumer trust suggests their effectiveness in influencing consumer behavior. These findings contribute to a deeper understanding of the mechanisms underlying trust formation and highlight the potential of nudging strategies to enhance consumer trust in online shopping contexts. This study emphasizes the significance of participants' perceptions of ethicality and transparency as mediating factors in the relationship between digital nudges and consumer trust. This insight provides researchers and practitioners with a framework for developing responsible nudging interventions that enhance trust and foster positive consumer experiences.

One notable academic implication of this study is that it fills a research gap within marketing journals regarding digital nudges. Previous academic papers on digital nudging have predominantly been published in information system journals. By exploring the impact of different types of digital nudges on consumer trust in online environments, this thesis contributes to the marketing literature by expanding the understanding of how digital nudging strategies can influence consumer behavior and trust formation.

5.3 MANAGERIAL IMPLICATIONS

The findings of this study have several important managerial implications for e-commerce platforms and businesses looking to utilize digital nudges in their online environments. By understanding the effects of different types of digital nudges on consumer trust, as well as the role of ethicality and transparency in shaping this relationship, managers can make informed decisions about implementing nudging strategies.

Firstly, e-commerce platforms should carefully choose the types of nudges they employ. The study highlights the effectiveness of default and social proof nudges in increasing consumer trust. By incorporating these types of nudges into their design, platforms can simplify decision-making processes and reduce perceived risk for consumers. Default nudges, such as the one used in the Netflix condition, can help streamline the decision-making process, while social proof nudges, like the one in the Zalando condition, can leverage people's desire to conform and comply with what is seen as required. However, caution should be exercised when considering scarcity or decoy nudges. These types of nudges, as observed in the Booking.com and Apple conditions, had a negative impact on consumer trust. Scarcity nudges can induce feelings of fear, loss, and uncertainty, which may lead to regret and lower trust in the e-marketplace. Decoy nudges, on the other hand, can be perceived as manipulative and deceptive, eroding consumer trust. Managers should carefully evaluate the ethical implications and alignment with brand values before implementing these types of nudges.

Secondly, ethicality and transparency plays a crucial role in the effectiveness of digital nudges. Consumers' perception of ethicality and transparency mediates the relationship between the digital nudge and consumer trust towards the brand. Companies should prioritize ethical considerations when designing and implementing digital nudges. It is essential to ensure that nudges provide transparent and helpful information rather than manipulate or deceive consumers. By aligning nudging strategies with ethical principles and consumer values, businesses can foster trust and maintain long-term relationships with their customers. In conclusion, this study provides valuable insights into the managerial implications of digital nudges on consumer trust in online environments. By considering appropriate nudges, prioritizing ethicality, and transparency, and continuously monitoring their effects, e-commerce platforms and businesses can leverage digital nudges to enhance consumer trust, drive purchase intentions, and foster long-term customer relationships.

5.4 LIMITATIONS AND DIRECTION FOR FUTURE RESEARCH

This thesis acknowledges several limitations, with the main one being the use of a convenience sample. As a consequence, the findings cannot be generalized to the entire population exposed to digital nudges. To address this limitation, future research could utilize alternative sampling techniques and include a larger and more diverse sample of participants. Despite this limitation, the results have provided valuable ideas, insights, and hypotheses for further exploration and study (Malhotra, 2010). Secondly, the study focused specifically on digital nudging in the context of online shopping and the effects of different types of nudges on consumer trust. While this context is relevant and widely applicable, it is important to acknowledge that the findings may not directly translate to other domains or contexts. Future research should explore the effects of digital nudges and trust in different industries or settings to provide a more comprehensive understanding.

Thirdly, the study utilized a single-session design, where participants were exposed to the digital nudges and completed the trust measurements immediately afterward. This design choice may not capture the long-term effects of digital nudges on consumer trust. Future studies could incorporate longitudinal designs to

assess the sustainability of the observed effects over time. Additionally, the study focused on specific digital nudges, such as default and social proof nudges, while other types of nudges were not explored. Future research could examine the effects of a broader range of nudges to gain a more comprehensive understanding of their impact on consumer trust.

This study briefly touched upon ethical concerns related to digital nudges. Future research could delve deeper into the ethical implications of nudging and explore how different ethical frameworks and perspectives shape consumers' responses to nudges. Understanding the ethical dimensions of nudging can inform guidelines and best practices for the responsible use of nudges in digital environments.

Lastly, the study relied on self-reported measures of trust, which are subjective and may be influenced by individual biases. Future research could consider incorporating objective measures or behavioral indicators to complement self-report data and provide a more robust assessment of consumer trust. This study primarily employed quantitative methods to examine the effects of digital nudges on consumer trust. Future research could adopt a mixed-methods approach that combines qualitative and quantitative techniques. Qualitative methods, such as interviews or focus groups, can provide rich insights into consumers' perceptions, attitudes, and experiences regarding digital nudges and trust.

Despite these limitations, this study contributes valuable insights into the relationship between digital nudges and consumer trust. By acknowledging these limitations, researchers and practitioners can further refine and expand upon the findings to advance our understanding of the role of digital nudging in shaping consumer behavior and trust.

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APPENDIX:

Appendix 1: Questionnaire

A. Demographic questions

LUISS

Lastly, I will ask some questions about your buying preferences and some general background information. You can be sure that all of your responses will be handled in the most confidential manner and that no research findings will be associated with you.

What is your age?

- ○ >20
- ○ 20-29
- ○ 30-39
- ○ 40-49
- ○ 50-59
- ○ 60+

What is your gender?

Male	Female	Non-binary / third gender	Prefer not to say
○	○	○	○

What is your highest level of education?

High school	Bachelors degree	Masters degree	Doctorate	Trade Certificate (yrkesfaglig/fagbrev)	None
○	○	○	○	○	○

What is your main current occupation?

Employed full time	Employed part time	Unemployed	Student	Retired
○	○	○	○	○

How frequently do you make decisions online?

Not at all	A little	A moderate amount	A lot	A great deal
○	○	○	○	○

How comfortable are you with making decisions online?

Extremely uncomfortable	Somewhat uncomfortable	Neither comfortable nor uncomfortable	Somewhat comfortable	Extremely comfortable
○	○	○	○	○

B. Questions to all conditions

LUISS

I am currently carrying out a research study to gain a better understanding of how consumers perceive online e-commerce environments.
The survey should take approximately 5 minutes to complete.
Please note that your responses will remain anonymous and confidential, and will only be used for research purposes.

Your sincere feedback is highly valued, and I would like to thank you for taking the time to participate in this study.

→

LUISS

Familiarity with "brand name"
Please consider the following statements

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I am familiar with Netflix	○	○	○	○	○	○	○
Netflix is well known	○	○	○	○	○	○	○
Netflix has a good reputation.	○	○	○	○	○	○	○
Netflix has a reputation for being honest	○	○	○	○	○	○	○
Netflix is my preferred streaming service	○	○	○	○	○	○	○

→

LUISS

Consumers disposition to trust:
Please consider the following statements

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I generally trust other people.	○	○	○	○	○	○	○
I generally have faith in humanity	○	○	○	○	○	○	○
I feel that people are generally reliable.	○	○	○	○	○	○	○
I generally trust other people unless they give me reasons not to.	○	○	○	○	○	○	○

→

LUISS

Consumer trust towards "brand name":
Please consider the following statements

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Netflix is trustworthy	○	○	○	○	○	○	○
Netflix gives the impression that it keeps promises and commitments.	○	○	○	○	○	○	○
I believe that Netflix has my best interests in mind.	○	○	○	○	○	○	○

→

LUISS

Consider "brand names" "nudge type", please rate your level of agreement with the following statement on a scale of 1 to 7, where 7 represents a highly pleasing association and 1 represents a highly unpleasing association. Your rating should reflect how well this feature aligns with your personal preferences.

This feature is ...

1 2 3 4 5 6 7

Influencing

Convincing

Personally relevant

Motivating

Appropriate

Encouraging

Inappropriate

Effective

Useful

Ineffective

Trustworthy

This feature

1 2 3 4 5 6 7

Makes me more aware of my behavior

Will cause changes in my behavior

Has a positive influence on my attitude

Has the potential to influence user behavior

→

LUISS

Transparancy:
Considering the following statements, please indicate your level of agreement on a scale from 1 (you disagree) to 7 (very agreeable)

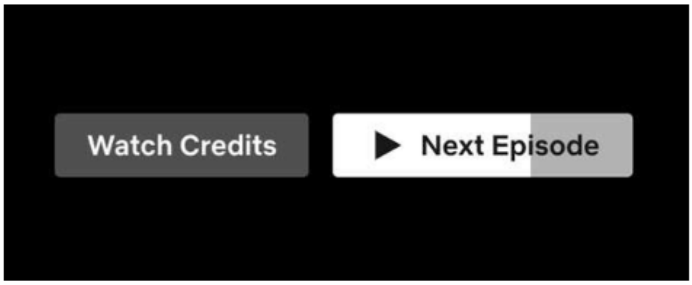
	1	2	3	4	5	6	7
I could fully understand the nudge when using Netflix	○	○	○	○	○	○	○
How transparent do you find the autoplay feature to be?	○	○	○	○	○	○	○
How would you describe the level of freedom you had in making your decision to continue watching?	○	○	○	○	○	○	○
Based on your experience with the autoplay feature, to what extent do you believe it was aligned with your personal values and principles.	○	○	○	○	○	○	○

C. The different conditions

Netflix:

LUISS

Imagine that you're enjoying a TV series on Netflix, and when one episode finishes, the "Autoplay" feature immediately queues up the next episode without you needing to lift a finger. You feel drawn into the story and find yourself tempted to continue watching, as the next episode starts playing seamlessly.



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LUISS

Did you know that the autoplay feature is a form of digital nudging, known as the default setting? Digital nudging is a strategy used to influence people's online behavior by presenting subtle cues or prompts that encourage them to make certain choices.

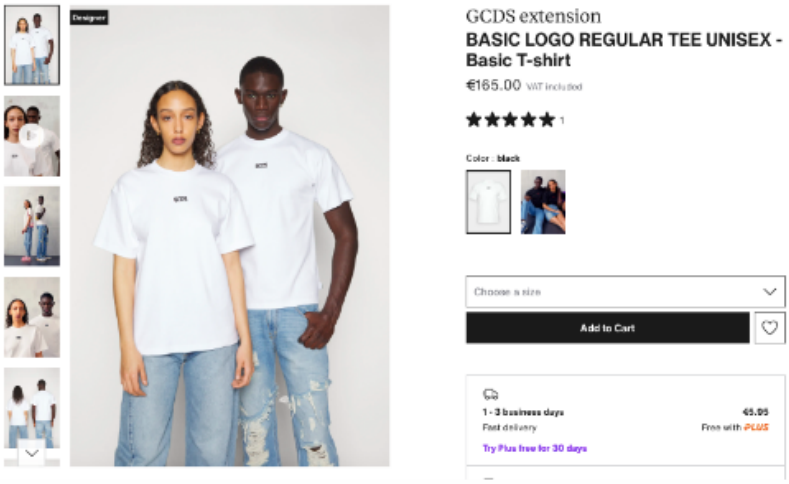
In the case of autoplay, the default setting prompts viewers to automatically start the next episode without any explicit action required, thus nudging them towards continuing to watch the series.

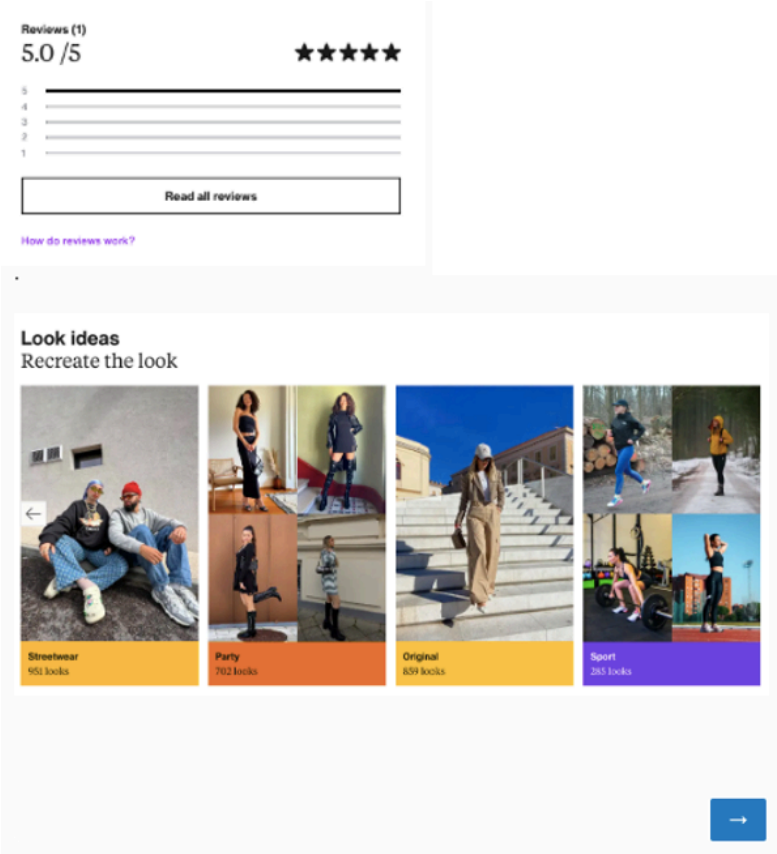
Please select the response that best represents your level of awareness regarding this issue.

Not aware at all	Slightly aware	Moderately aware	Very aware	Extremely aware
○	○	○	○	○

Zalando:

Imagine that you are looking for new clothes and come across a cool t-shirt on Zalando.com that catches your eye. As you're browsing through the product page, you notice that the t-shirt has a high star rating, with an average of 5.0 stars out of 5. You also see that there are several reviews from other customers who have purchased the shirt and are very satisfied with their purchase. In addition, you see real-life examples of people wearing this t-shirt and recreating looks.





LUISS

Digital nudging is a tactic used to influence people's behavior online by presenting them with subtle cues or prompts that encourage them to make certain choices.

One example of digital nudging that Zalando.com uses is social proof, where reviews and a rating system are displayed to encourage customers to make a purchase. This social proof serves as a subtle nudge to influence the customer's decision-making process by showing them that others have already had positive experiences with the product or service offered by Zalando. By doing so, Zalando is able to nudge the customer towards making a purchase without overtly pressuring them.

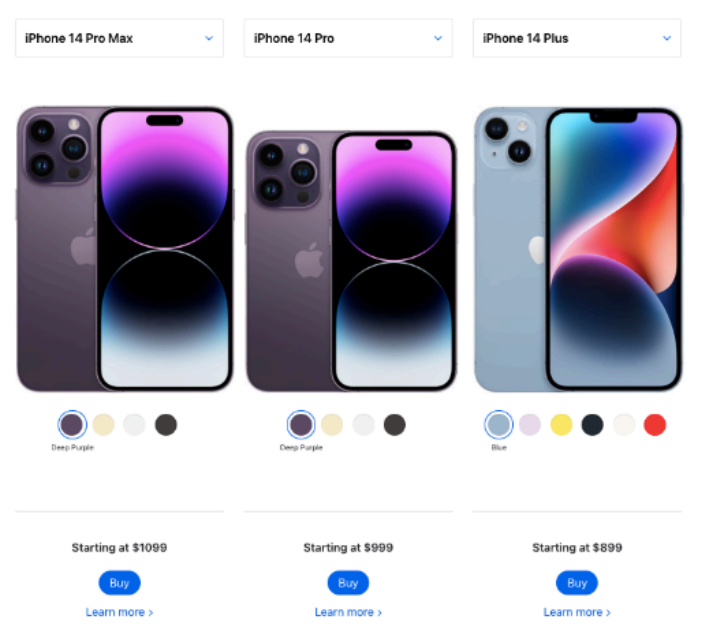
Please select the response that best represents your level of awareness regarding this nudge.

Not aware at all	Slightly aware	Moderately aware	Very aware	Extremely aware
○	○	○	○	○

Apple:

LUISS

Imagine being on Apple.com and considering buying an IPhone 14.



You are considering what iPhone you want and noticed that there were three models available with varying features and prices.

The most expensive model had additional features such as a larger screen and a better camera.
The second model was slightly cheaper but had fewer features.
The third model had even fewer features and was priced much lower.

You decided to go with the most expensive iPhone, feeling that the additional features were worth the extra cost. However, you wondered if your decision was influenced by the presence of the other models, especially the third model that seemed like a less attractive option in comparison to the other two.

→

LUISS

Apple's website often displays three product options with similar prices. This strategy is known as the decoy effect, a form of digital nudging where a third option that's less appealing is presented to influence your purchasing decision.

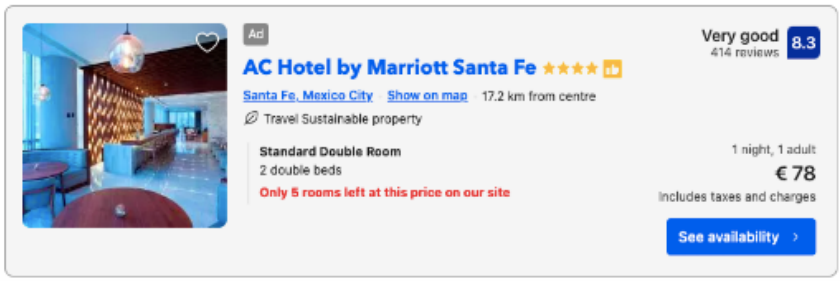
Please select the response that best represents your level of awareness regarding this nudge.

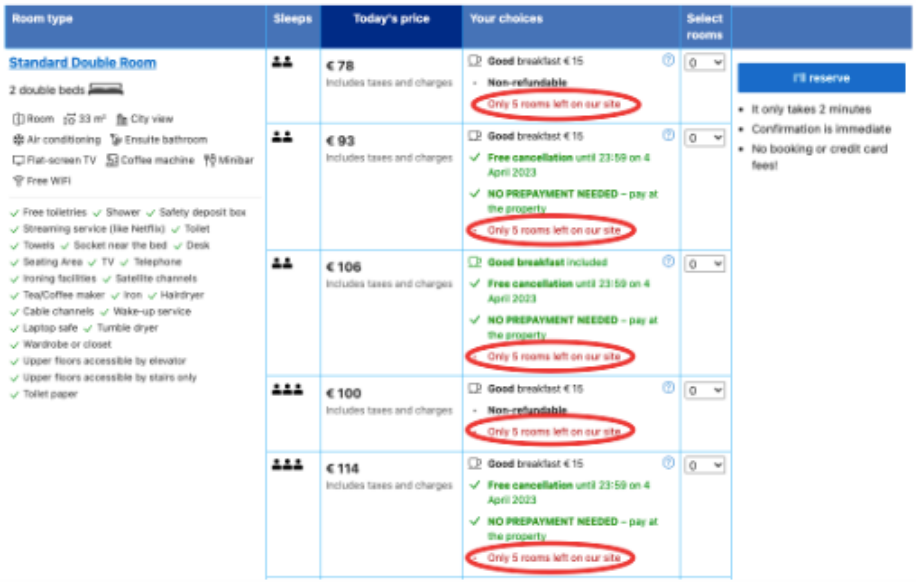
Not aware at all	Slightly aware	Moderately aware	Very aware	Extremely aware
○	○	○	○	○

Booking.com

LUISS

Imagine you are planning a trip to Mexico and looking for hotels on Booking.com.
After looking at several options, you find a hotel that you really like and decide to book it. However, as you're about to finalize your booking, you notice a message saying "Only 5 rooms left" displayed in bold red letters. This message creates a sense of urgency in you, as you worry that the hotel may sell out before you get a chance to book it. You quickly make your decision and book the hotel, feeling relieved that you were able to secure a room before it was too late.





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LUISS

Did you know that online environments sometimes use digital nudging to influence your purchasing decisions? One common form of digital nudging is the use of "scarcity" tactics, which involve presenting subtle cues or prompts that create a sense of urgency or scarcity around a particular product or service. For example, you may have seen messages like "Only 5 rooms left" when browsing hotel booking websites. These messages are designed to nudge you towards making a quick decision and purchasing the product or service before it's too late.

Please select the response that best represents your level of awareness regarding this issue.

Not aware at all	Slightly aware	Moderately aware	Very aware	Extremely aware
○	○	○	○	○

→

Appendix 2: Factor Analysis

A. Component Matrix

Variables for Netflix	FACTORS					
	1	2	3	4	5	6
Familiarity	.872					
Familiarity	.875					
Familiarity	.776					
Familiarity	.773					
Familiarity	.762					
Consumers disposition to trust		.895				
Consumers disposition to trust		.571				
Consumers disposition to trust		.808				
Consumers disposition to trust		.829				
Consumer trust towards Netflix					.635	
Consumer trust towards Netflix					.562	
Consumer trust towards Netflix					.352	
Influencing				.854		
Convincing				.691		
Personally relevant				.613		
Motivating				.486		
Appropriate				.745		
Encouraging				.722		
Inappropriate				.811		
Effective				.693		
Useful				.843		
Ineffective				.786		
Trustworthy				.601		
Makes me more aware of my behavior				.736		
Will cause changes in my behavior				.766		
Has a positive influence on my attitude				.861		
Has the potential to influence user behavior				.805		
Transparency			.683			
Transparency			.694			
Transparency			.780			
Transparency:			.694			
Trust after exposure						.523
Trust after exposure						.585
Trust after exposure						.620

Variables for Zalando	FACTORS					
	1	2	3	4	5	6
Familiarity			.592			
Familiarity			.780			
Familiarity			.640			
Familiarity			.810			
Familiarity			.651			
Consumers disposition to trust				.796		
Consumers disposition to trust				.812		
Consumers disposition to trust				.816		
Consumers disposition to trust				.746		
Consumer trust towards Zalando						.871
Consumer trust towards Zalando						.833
Consumer trust towards Zalando						.645
Influencing	.930					
Convincing	.949					
Personally relevant	.917					
Motivating	.922					
Appropriate	.900					
Encouraging	.896					
Inappropriate	.838					
Effective	.922					
Useful	.930					
Ineffective	.647					
Trustworthy	.921					
Makes me more aware of my behavior	.810					
Will cause changes in my behavior	.917					
Has a positive influence on my attitude	.915					
Has the potential to influence user behavior	.804					
Transparency					.767	
Transparency					.514	
Transparency					.677	
Transparency					.894	
Trust after exposure		.557				
Trust after exposure		.545				
Trust after exposure		.582				

Variables for Apple	FACTORS					
	1	2	3	4	5	6
Familiarity				.888		
Familiarity				.881		
Familiarity				.682		
Familiarity				.571		
Familiarity				.684		
Consumers disposition to trust:		.898				
Consumers disposition to trust:		.860				
Consumers disposition to trust:		.891				
Consumers disposition to trust:		.923				
Consumer trust towards Apple:						.749
Consumer trust towards Apple:						.822
Consumer trust towards Apple:						.457
Influencing	.771					
Convincing	.831					
Personally relevant	.624					
Motivating	.607					
Appropriate	.798					
Encouraging	.775					
Inappropriate	.618					
Effective	.267					
Useful	.812					
Ineffective	.418					
Trustworthy	.797					
Makes me more aware of my behavior	.518					
Will cause changes in my behavior	.734					
Has a positive influence on my attitude	617					
Has the potential to influence user behavior	.849					
Transparency:					.903	
Transparency:					.919	
Transparency:					.459	
Transparency:					.668	
Trust after exposure			.729			
Trust after exposure			.847			
Trust after exposure			.601			

Variables for Booking.com	FACTORS					
	1	2	3	4	5	6
Familiarity		.552				
Familiarity		.415				
Familiarity		.812				
Familiarity		.776				
Familiarity		.723				
Consumers disposition to trust				.873		
Consumers disposition to trust				.716		
Consumers disposition to trust				.885		
Consumers disposition to trust				.916		
Consumer trust towards Booking.com			.790			
Consumer trust towards Booking.com			.741			
Consumer trust towards Booking.com			.751			
Influencing	.883					
Convincing	.657					
Personally relevant	.607					
Motivating	.702					
Appropriate	.881					
Encouraging	.867					
Inappropriate	.787					
Effective	.693					
Useful	.809					
Ineffective	.798					
Trustworthy	.837					
Makes me more aware of my behavior	.712					
Will cause changes in my behavior	.522					
Has a positive influence on my attitude	.865					
Has the potential to influence user behavior	.640					
Transparency						.891
Transparency						.542
Transparency						.472
Transparency						.856
Trust after exposure					.857	
Trust after exposure					.897	
Trust after exposure					.528	

B. Total variance

Total Variance Explained for The Different Conditions

Components for Netflix	**Initial Eigenvalues**			**Extractions sums of squared Loadings**			**Rotation sums of Squared Loading s**		
	Total	Variance	Cumulative	Total	Variance	Cumulative	Total	Variance	Cumulative
1	7.347	20.991	20.991	7.347	20.991	20.991	4.237	12.106	12.106
2	4.195	11.985	32.976	4.195	11.985	32.976	3.519	10.056	22.162
3	2.939	8.396	41.372	2.939	8.396	41.372	3.312	9.463	59.929
4	2.641	7.546	48.918	2.641	7.546	48.918	2.990	8.543	65.466
5	2.042	5.835	54.753	2.042	5.835	54.753	2.690	7.686	70.996
6	2.925	5.500	60.253	1.925	5.500	60.253	2.280	6.515	**76.448**
Components for Zalando	**Initial Eigenvalues**			**Extractions sums of squared Loadings**			**Rotation sums of Squared Loading s**		
	Total	Variance	Cumulative	Total	Variance	Cumulative	Total	Variance	Cumulative
1	11.049	32.498	32.498	11.049	32.498	19.743	10.576	31.105	31.105
2	5.569	16.380	48.878	5.569	16.380	38.861	4.036	11.871	42.976
3	4.009	11.792	60.670	4.009	11.792	50.811	3.804	11.189	54.165
4	2.772	8.152	68.822	2.772	8.152	59.133	3.302	9.713	63.877
5	1.521	4.474	73.296	1.521	4.474	65.733	2.521	7.414	71.291
6	1.400	4.118	77.414	1.400	4.118	70.557	1.785	5.249	**80.461**
Components for Apple	**Initial Eigenvalues**			**Extractions sums of squared Loadings**			**Rotation sums of Squared Loading s**		
	Total	Variance	Cumulative	Total	Variance	Cumulative	Total	Variance	Cumulative
1	6.713	19.743	19.743	6.713	19.743	19.743	4.802	14.123	26.222
2	6.500	19.118	38.861	6.500	19.118	38.861	4.113	12.098	36.854
3	4.063	11.949	50.811	4.063	11.949	50.811	3.615	10.632	56.031
4	2.830	8.323	59.133	2.830	8.323	59.133	3.419	10.055	63.668
5	2.244	6.600	65.733	2.244	6.600	65.733	3.102	9.122	71.003
6	1.640	4.824	70.557	1.640	4.824	70.557	2.596	7.637	**78.071**
Components for Booking	**Initial Eigenvalues**			**Extractions sums of squared Loadings**			**Rotation sums of Squared Loading s**		
	Total	Variance	Cumulative	Total	Variance	Cumulative	Total	Variance	Cumulative
1	10.534	30.981	30.981	10.534	30.981	30.981	8.745	25.721	25.721
2	5.944	17.483	48.464	5.944	17.483	48.464	4.500	13.235	38.956
3	2.966	8.725	57.189	2.966	8.725	57.189	3.592	10.565	49.521
4	2.712	7.977	65.166	2.712	7.977	65.166	3.585	10.545	60.067
5	1.821	5.356	70.521	1.821	5.356	70.521	3.088	9.082	69.149
6	1.436	4.223	74.744	1.436	4.223	74.744	1.665	4.898	**74.047**

SUMMARY

1.0 Introduction

The digital era has revolutionized the way businesses engage with consumers, with e-commerce playing a significant role in this transformation. Digital marketing strategies, including the use of digital nudges, have emerged as powerful tools to influence consumer behavior in a non-coercive manner. Digital nudges operate across various digital platforms and aim to guide consumer decision-making processes. However, concerns about their ethicality and transparency have grown, highlighting the need to understand their impact on consumer trust. This thesis examines how different types of digital nudges affect consumer trust in online environments and investigates the mediating role of ethicality and transparency. By studying four types of digital nudges in different digital environments, this research aims to provide insights into fostering consumer trust.

2.0 Literature review and hypothesis overview

Nudge theory

Nudge theory, introduced by Thaler & Sunstein (2008), is a concept that has gained attention for its potential to influence behavior without restricting individuals' freedom of choice. It involves making small alterations to the choice architecture to predictably alter behavior without eliminating options or significantly changing incentives. Nudges can be seen as a form of libertarian paternalism, which allows individuals to make their own choices while providing gentle guidance. The theory is based on the idea that individuals can be categorized into two primary modes of thinking: thoughtful and impulsive. Thoughtful individuals make reasoned decisions based on economic incentives, while impulsive individuals often choose a satisfactory option over a perfect one. Decision-making is influenced by heuristics, or mental shortcuts, which can lead to irrational choices. Nudges leverage these cognitive biases and heuristics to shape the choice architecture and guide individuals toward better choices.

Digital nudges

Digital nudging refers to the use of design elements within digital interfaces to influence people's behavior in digital choice environments. Digital environments provide greater flexibility for designers to create nudges compared to the physical world. Examples of digital nudging can be found in various contexts such as email, social media, e-commerce, and mobile apps. Designers have the freedom to create nudges that guide user behavior toward desired outcomes. Personalized nudges are suggested to cater to the heterogeneity of the population being nudged. Different individuals may respond differently to various nudges, and personalization aims to tailor nudges based on individual characteristics. Choice personalization uses data to determine the best way to influence decision-makers, while delivery personalization determines the most effective method of nudging based on specific characteristics.

Different categories of digital nudging

This section of the literature review explores different types of digital nudges and their applications and effectiveness. The authors categorize digital nudges into six categories: facilitate, confront, deceive, social influence, fear, and reinforce.

Nudges within the **facilitate category** simplify decision-making by reducing effort and leveraging defaults. One such nudge is the default option, based on the "status-quo bias". It is effective in guiding choices, such as promoting sustainable purchases or acceptance of cookies. Nudges within the **confront category** creates uncertainty and tap into aversion to regret to disrupt unwanted behaviors. For example, introducing a delay before publishing social media posts prompts users to reconsider their content. The **deceive category** use deception to shape perception and promote desired outcomes. One such nudge is the decoy effect, presenting an unattractive option alongside a desirable one, has been used to influence choices in various contexts, including promoting healthy snacks or manipulating consumer decisions in digital marketplaces. **Social influence category** capitalizes on people's desire to conform and comply. Within this category is the social proof nudge which includes displaying the number of purchases or positive reviews. It is commonly used in e-commerce and online reviews to encourage engagement. The **fear category** induces fear, loss, or uncertainty to motivate action. On such nudge is scarcity, limiting availability or using countdown timers, can influence user behavior in various contexts, including e-commerce and marketing. The **reinforce category** strengthen desired behaviors by capturing attention and providing feedback. Just-in-time prompts, and personalized notifications can remind individuals of target behaviors, such as physical activity or eating habits (Hirano et al., 2013; J. Kim et al., 2016). For this study, we will focus on four categories: facilitate (default nudge), deceive (decoy nudge), social influence (social proof nudge), and fear (scarcity nudge). This selection allows for a focused examination of nudges within these specific categories.

Transparency and ethicality

The ethical dimensions of nudging have been a subject of concern. Critics argue that nudges can manipulate people's decisions without their awareness or consent, raising questions about individual autonomy and the alignment of values. Proponents argue that nudging can be used for the greater good as long as it follows principles of libertarian paternalism. Hansen and Jespersen (2013) developed a classification system for nudges based on the mode of thinking and transparency involved. They categorized nudges into four types: automatic-transparent, reflective-transparent, reflective-non-transparent, and automatic-non-transparent (Figure 1). Caraban et al. (2019) built upon this system and identified six clusters of nudges, positioning them on the transparency and reflective-automatic axes. The first type, automatic-transparent nudges, aim to influence behavior without hidden motives and include techniques like changing default options. Reflective-transparent nudges prompt reflective thinking and conscious decision-making, such as using signs to remind pedestrians to be cautious. Reflective-non-transparent nudges manipulate choices without explicitly disclosing their motives, often by adding irrelevant alternatives to influence perceived value. Automatic-non-transparent

nudges seek to manipulate behavior while keeping their intentions hidden, like rearranging cafeteria layouts to emphasize healthier food options. Based on previous research, I selected four nudges from the 23 identified clusters: social proof, defaults, decoy options, and scarcity nudges. These nudges were positioned within the transparency and thinking type framework, demonstrating how they align with different categories.

Overall, this classification system helps categorize nudges based on their transparency and the type of thinking they engage, providing a framework to understand and analyze their effectiveness in influencing behavior.

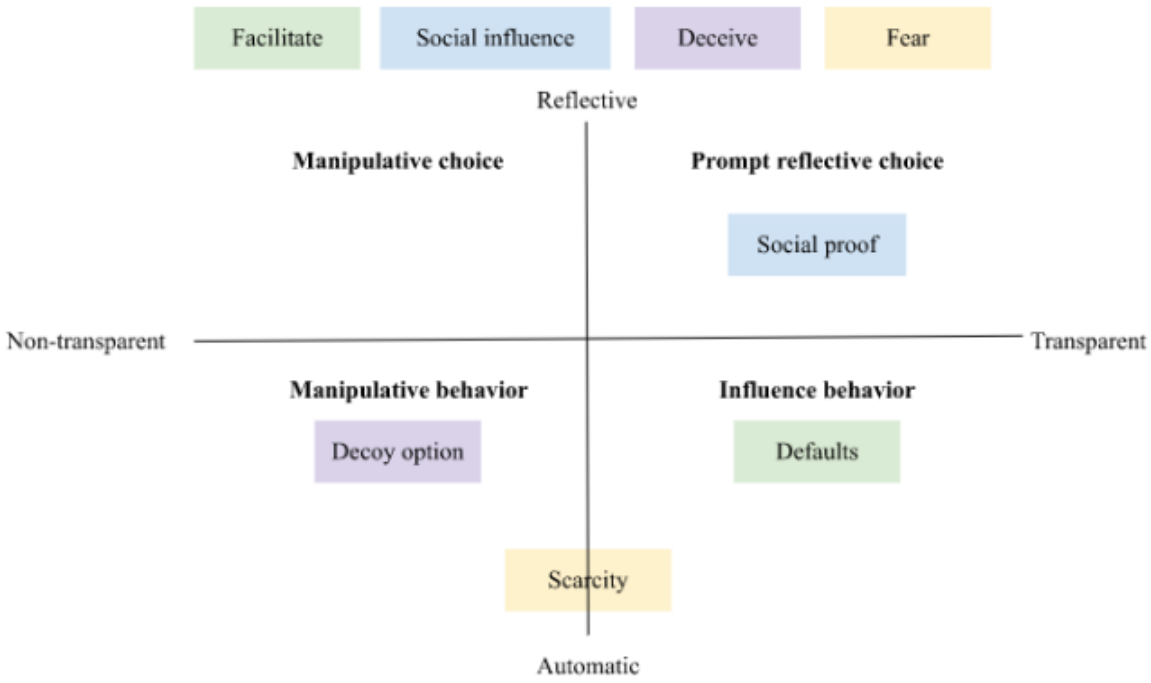

Figure 1: *The transparency and reflective-automatic axes.*

Hypothesis overview

The literature review suggests that default nudges, such as pre-selected options, can significantly impact consumer behavior. Default options often serve as a cognitive shortcut for decision-making, leading individuals to stick with the default choice. The existing research also indicates that default options can influence trust by creating a sense of convenience and reliability. Therefore, it is hypothesized that default nudges implemented in the Netflix condition will positively influence consumer trust. The default option is positioned in the "influence behavior" section on the transparency and reflective-automatic axes of Hansen and Jespersen's framework (Figure 1).

H1: Digital nudges that aim to influence behavior in the Netflix condition will have a positive effect on consumer trust.

Social proof nudges, which leverage the influence of others' choices, have been shown to impact decision-making and behavior. The literature review suggests that when individuals observe others making a particular

choice, they are more likely to perceive it as a socially acceptable and a trustworthy option. Therefore, it is hypothesized that social proof nudges implemented in the Zalando condition will positively influence consumer trust. The social proof nudge is positioned in the “prompt reflective choice” section the transparency and reflective-automatic axes of Hansen and Jespersen's framework (Figure 1).

H2: Digital nudges that aim to prompt reflective choice in the Zalando condition will have a positive effect on consumer trust.

The literature review indicates that decoy nudges, which introduce irrelevant options to manipulate decision-making, can have negative effects on consumer trust (Huber et al., 1982; Schneider et al., 2018). When individuals perceive that their choices are being manipulated or influenced by irrelevant options, it can lead to a decrease in trust towards the provider. Therefore, it is hypothesized that decoy nudges implemented in the Apple condition will have a negative effect on consumer trust. The decoy nudge is positioned in “manipulate behavior” section on the transparency and reflective-automatic axes of Hansen and Jespersen's framework (Figure 1).

H3: Digital nudges that aim to manipulate behavior in the Apple condition will have a negative effect on consumer trust.

Scarcity nudges, such as limited availability or time-limited offers, have been shown to influence consumer behavior. However, the literature review suggests that when scarcity cues are perceived as manipulative or deceptive, it can result in a decrease in trust. It is hypothesized that scarcity nudges implemented in the Booking.com condition, with a careful balance between influencing behavior and manipulative tactics, may have a negative effect on consumer trust. Scarcity nudges are positioned between «manipulative behavior” and “influencing behavior” on the transparency and reflective-automatic axes of Hansen and Jespersen's framework (Figure 1).

H4: Digital nudges that are between manipulative behavior and influencing behavior in the Booking.com condition may have a negative effect on consumer trust.

The literature review highlights the importance of ethical considerations in consumer trust formation. It suggests that when individuals perceive the digital nudges as ethically appropriate, it positively influences their trust towards the brand. Therefore, it is hypothesized that participants' perceptions of ethicality will mediate the relationship between the implemented digital nudge and consumer trust. Transparency is a key factor in building consumer trust. The literature review indicates that when individuals perceive the digital nudges as transparent, providing clear information about their purpose and impact, it enhances their trust towards the brand. Therefore, it is hypothesized that participants' perceptions of transparency will mediate the relationship between the implemented digital nudge and consumer trust.

H5a: Participants' perceptions of ethicality will mediate the relationship between the digital nudge and consumer trust towards the brand.
H5b: Participants' perceptions of transparency will mediate the relationship between the digital nudge and consumer trust towards the brand.

The independent variable in this model is different types of digital nudges. Each respondent will experience one of the four chosen nudges: the default choice, the decoy effect, the scarcity impact, or the social proof nudge. The dependent variable in this model is consumer trust, which refers to participants' overall perception of the brand. The perceived degree of ethicality and transparency serves as the mediators in this framework.

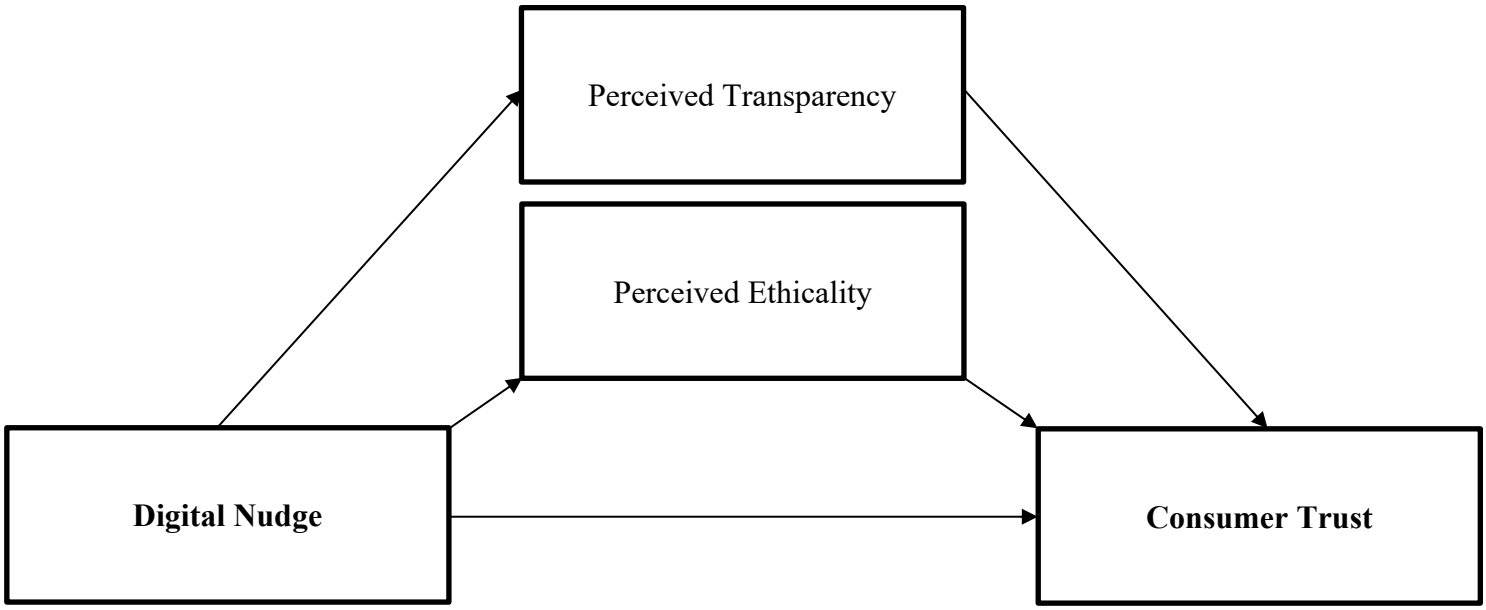

Figure 2*: Conceptual Framework*

3.0 Research methodology

In this chapter, the research methodology for investigating the impact of different types of digital nudges on consumer trust is outlined. The objective of the study is to explore the influence of four types of digital nudges (default setting, decoy effect, scarcity effect, and social proof) on consumer trust and examine the mediating factors of transparency and perceived ethicality.

To gather data, a quantitative approach using an online survey was chosen. Non-probability convenience sampling was employed to recruit participants through social media platforms, allowing for a diverse sample of individuals familiar with online shopping. The survey design utilized a between-subjects experimental design, randomly assigning participants to one of four conditions representing different types of digital nudges. The chosen brands for each condition were Netflix, Zalando, Apple.com, and Booking.com. Each condition presented participants with a specific brand and a corresponding digital nudge. Measures of familiarity with the brand, propensity to trust, and trust toward the specific brand were assessed using validated scales. Perceived persuasiveness of the nudge, awareness of the nudge, transparency, and consumer trust were

also measured using Likert scales. Pre-tests were conducted to ensure the survey design was appropriate, valid, and reliable. Pilot testing, validity and reliability testing, and randomization checks were performed to address any issues and ensure consistency across the survey. Ethical considerations were addressed by ensuring voluntary participation, maintaining confidentiality and anonymity, clearly communicating the purpose of the study, and obtaining participants' consent. All survey data were deleted once the thesis was submitted to protect participants' privacy. The initial data set consisted of 250 responses, but eight incomplete responses and two unreliable participants were excluded, resulting in a final sample size of 240. The sample consisted of 107 male and 133 female respondents, with a notable representation of participants aged 20-29 and over 50 years old. Descriptive statistics revealed that a majority of respondents were employed (55.8%) and held a master's degree (44.6%) or a bachelor's degree (41.3%). Additionally, a significant portion of the participants engaged in frequent online shopping and expressed comfort in making decisions online. Factor analysis was conducted to validate the measurement scales used in the study. Separate factor analyses were performed for each condition, and the suitability of factor analysis was confirmed by the Kaiser-Meyer-Olkin Measure and Bartlett's test of sphericity. A principal component analysis with a varimax procedure was then conducted, resulting in the identification of six factors: familiarity, consumer disposition to trust, consumer trust towards the brand, ethicality scale, transparency, and trust after exposure. The appropriateness of retaining six factors was supported by various retention criteria, and Cronbach's Alpha tests were employed to assess the internal consistency reliability of the constructs. All constructs with multiple items demonstrated acceptable reliability. To streamline the analysis and enable comparisons across conditions, variables that passed the factor analyses and reliability tests were combined into index variables. Five variables, namely "Trust Before Exposure," "Trust After Exposure," "Difference Trust," "Transparency," and "Ethicality," were aggregated across all conditions to create a uniform set of variables for analysis. In summary, this chapter presents the data preparation steps, including data cleaning, descriptive statistics, factor analysis, reliability tests, and the creation of index variables, which laid the foundation for subsequent analyses in the study.

4.0 Results

Chapter 4 presents the results of the study, which aimed to investigate the effects of digital nudges on consumer trust. The analysis began with a univariate analysis of variance (ANOVA) to examine the relationship between the different digital nudge conditions and the change in trust experienced by participants. The results indicated that the conditions had a significant effect on the difference in trust, with the conditions explaining a substantial portion of the variance. Further analysis using multiple comparisons revealed specific findings for each condition. The digital nudges in the Netflix condition were found to have a positive effect on consumer trust, supporting hypothesis 1. The Zalando condition, which aimed to prompt reflective choice, also had a positive effect on consumer trust, supporting hypothesis 2. On the other hand, the digital nudges in the Apple condition, which aimed to manipulate behavior, had a negative effect on consumer trust, supporting hypothesis 3. The Booking.com condition, which balanced between manipulative and influencing behavior, showed a negative

effect on consumer trust compared to Netflix and Zalando conditions, but no significant difference compared to the Apple condition, supporting hypothesis 4. The study then examined the mediating effects of perceived ethicality and transparency on the relationship between digital nudges and consumer trust. Regression analysis using the PROCESS model revealed that participants' perceptions of ethicality mediated the relationship between digital nudges and consumer trust, supporting hypothesis H5a. Additionally, participants' perceptions of transparency also mediated the relationship between digital nudges and consumer trust, supporting hypothesis H5b. In summary, the results of the study provided strong support for hypotheses H1, H2, H3, H4, H5a, and H5b, indicating the expected effects of digital nudges on consumer trust in the respective conditions. The findings demonstrated that digital nudges could influence consumer trust positively or negatively, depending on the specific design and intention behind the nudge. Furthermore, the study highlighted the mediating role of perceived ethicality and transparency in shaping consumer trust in response to digital nudges.

Hypothesis	Results	Confidence Interval
H1	Supported with statistical evidence	95%
H2	Supported with statistical evidence	95%
H3	Supported with statistical evidence	95%
H4	Supported with statistical evidence	95%
H5a	Supported with statistical evidence	95%
H5b	Supported with statistical evidence	95%

5.0 Conclusion

Discussion

This master thesis has explored the power of digital nudging and its effect on consumer trust. Drawing on earlier research, this study attempts to answer the following research question: *How do different types of digital nudges affect consumer trust in online environments, and what role do perceptions of ethicality and transparency play in this relationship?*

In the Netflix condition, a default nudge was employed to simplify decision-making. The literature review supported the hypothesis that default nudges can simplify the decision-making process and increase trust in the e-marketplace. The results indicated a significant mean difference between the Netflix condition and both the Apple and Booking.com conditions, suggesting that default nudges have a positive effect on consumer trust in online shopping. The Zalando condition utilized a social proof nudge, capitalizing on people's desire to conform and comply. The literature review indicated that social proof nudges can reduce perceived risk and increase trust in the e-seller. The findings showed no significant mean difference between the Zalando and Netflix conditions, suggesting a similar impact on consumer trust. However, significant mean differences were observed between the Zalando condition and both the Apple and Booking.com conditions,

supporting the hypothesis that social proof nudges positively influence consumer trust in online shopping. The Apple condition employed a decoy nudge, aiming to manipulate consumers into choosing a specific product. The literature review discussed the deceptive nature of the decoy effect, which can erode consumer trust. The results demonstrated a significant and negative mean difference in trust scores between the Apple condition and the other conditions, supporting the negative effect of the decoy nudge on consumer trust. The Booking.com condition used a scarcity nudge, inducing feelings of fear, loss, and uncertainty to prompt swift action. The literature review suggested that the scarcity nudge may lead to regret and lower levels of trust in the e-marketplace. The findings indicated significant mean differences between the Booking.com condition and both the Netflix and Zalando conditions, suggesting a potential negative effect on consumer trust. Ethical concerns regarding digital nudging were also explored. The study found that participants' perceptions of ethicality mediated the relationship between digital nudges and consumer trust. When participants perceived the nudge as aligned with their values, trust in the brand increased. Transparency was another mediating factor, with perceived transparency enhancing trust. These results highlight the importance of aligning nudges with consumer values and ensuring transparency in order to foster trust in online environments. In conclusion, this study provides insights into the effects of different types of digital nudges on consumer trust. Default and social proof nudges were found to positively impact trust, while decoy and scarcity nudges had a negative effect. Perceived ethicality and transparency played mediating roles in the relationship between nudges and trust. Companies should consider ethical concerns and strive for transparency when implementing digital nudges to enhance consumer trust in online shopping.

Academic implications

This study has several important academic implications that contribute to the existing literature on digital nudging and its influence on consumer trust. The findings offer valuable insights and raise considerations for future research and practitioners in the field. Firstly, the study provides empirical evidence on the relationship between different types of digital nudges and consumer trust in online environments. The positive impact of default and social proof nudges on consumer trust enhances our understanding of how these nudges can effectively influence consumer behavior. These findings contribute to the existing knowledge on trust formation and demonstrate the potential of nudging strategies to enhance trust in online shopping. Furthermore, this study highlights the significance of participants' perceptions of ethicality and transparency as mediating factors in the relationship between digital nudges and consumer trust. The results underscore the importance of aligning nudging strategies with consumers' values and promoting transparency in their implementation. This insight provides researchers and practitioners with a framework for developing responsible nudging interventions that foster trust and deliver positive consumer experiences. Additionally, one notable academic implication of this study is its contribution to marketing literature. While previous research on digital nudging has primarily been published in information system journals, this study fills a research gap within marketing journals. By exploring the impact of different types of digital nudges on

consumer trust in online environments, it expands our understanding of how digital nudging strategies can influence consumer behavior and trust formation, thereby enriching the marketing literature in this domain.

Managerial implications

The findings of this study have significant managerial implications for e-commerce platforms and businesses aiming to utilize digital nudges in their online environments. Understanding the effects of different types of nudges on consumer trust, as well as the role of ethicality and transparency, can guide managers in making informed decisions about implementing nudging strategies. Firstly, platforms should carefully select the types of nudges they employ. Default and social proof nudges have been shown to increase consumer trust by simplifying decision-making and leveraging social influence. However, caution is advised when considering scarcity or decoy nudges, as they can have a negative impact on trust. Scarcity nudges may induce negative emotions and regret, while decoy nudges can be perceived as manipulative. Managers should evaluate the ethical implications and alignment with brand values before using these types of nudges. Secondly, ethicality and transparency are crucial for the effectiveness of digital nudges. Consumers' perception of ethicality and transparency mediates the relationship between nudges and trust. It is important for companies to prioritize ethical considerations and ensure that nudges provide transparent and helpful information rather than manipulate or deceive consumers. By aligning nudging strategies with ethical principles and consumer values, businesses can foster trust and cultivate long-term relationships with customers.

Limitations and direction of future research

This thesis acknowledges several limitations that should be considered when interpreting the findings. Firstly, the use of a convenience sample restricts the generalizability of the results to the broader population. Future research should employ alternative sampling techniques and include a larger and more diverse sample to enhance generalizability. Secondly, the study's focus on online shopping and specific types of digital nudges may limit the direct applicability of the findings to other contexts. Further research should explore the effects of digital nudges and trust in different industries or settings. Thirdly, the single-session design used in this study may not capture the long-term effects of digital nudges on consumer trust. Future studies should consider employing longitudinal designs to assess sustainability. Ethical implications related to digital nudges were briefly addressed, but future research should delve deeper into ethical frameworks and perspectives. Objective measures and mixed-methods approaches could also enhance the understanding of consumer trust in relation to digital nudges. Despite these limitations, this study provides valuable insights into the interplay between digital nudges and consumer trust, which can guide further research and practice in understanding their effects on consumer behavior and trust.