METAVERSE IN MARKETING: ROLE OF PERFORMANCE EXPECTANCY AND SOCIAL INFLUENCE ON CONSUMER EXPECTATION TO ETHICAL CONDUCT

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ABSTRACT

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Title of thesis Metaverse in marketing: role of performance expectancy and social influence on consumer expectation to ethical conduct	
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This thesis investigates the impact of performance expectancy and social influence on consumer expectations to ethical conduct by metaverse operators. Grounded in the Unified Theory of Acceptance and Use of Technology (UTAUT), the study explores how these factors shape consumer expectations in emerging digital environments. The research employs a quantitative methodology, utilizing surveys to collect data from over 100 Metaverse users. The findings reveal that performance expectancy significantly influences consumer expectations, emphasizing the importance of efficiency and effectiveness in virtual environments. However, social influence is found to be insignificant, suggesting that consumers prioritize their ethical considerations over peer or societal norms.

From a practical perspective, the study offers valuable insights for Metaverse platform developers, marketers, and regulators. It highlights the need for developing highly efficient and effective technological solutions and emphasizes the importance of direct communication. Personalized marketing that demonstrates tangible benefits and ethical practices is likely to be more effective in the Metaverse.

The research contributes to the ongoing discourse on ethical standards in digital marketing and suggests areas for future research, such as the impact of cultural differences on ethical attitudes and consumer trust, the evolution of consumer behavior over time, and the effects of enhanced security and privacy features on user trust. By addressing these aspects, the thesis aims to guide the development of more ethical and effective Metaverse marketing strategies, fostering greater consumer engagement and satisfaction.

Keywords Metaverse, Consumer expectation, Performance Expectancy, Social Influence, UTAUT, Digital Marketing.

Location Jyväskylä University Library

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1   INTRODUCTION

1.1 Research Background

The Metaverse is an expansive virtual environment that facilitates communication, social interaction, and commercial activities (Bibri & Allam, 2022; Huggett, 2020). It has emerged as a significant technological advancement with the potential to fundamentally transform various aspects of business and society (Giang Barrera & Shah, 2023). Corporate social responsibility in these virtual worlds is critical as businesses use the metaverse for marketing and customer interaction (Jeong et al., 2022). In the metaverse, trust and the long-term viability of these digital ecosystems depend heavily on ethical behavior (Sebastian, 2022).

Nevertheless, critics of the Metaverse point to ethical concerns about societal discrimination, government involvement, and the determination of an uncertain future despite the Metaverse's potential. These ethical concerns, which are essential to customer acceptability, highlight the challenges in developing this revolutionary technology (Allam et al., 2022; Bibri, 2022, Venkatesh & Davis, 2000). The Metaverse is predicted to have a $800 billion market by 2024 and is predicted to fundamentally alter digital retailing. But when it comes to consumers, brands, and retailers, not much is known about the metaverse (Yoo et al, 2023). The rapid adoption of the metaverse presents significant moral challenges that necessitate immediate attention from management and the broader community (Yuvaraj, 2016). Maintaining ethical behavior in the metaverse is essential since it impacts customer confidence, adherence to the law, and the standing of companies that operate in this area (Wright et al, 2014). It is critical to address these ethical issues to preserve consumer expectations and stop the potential exploitation and abuse of these virtual worlds (Anshari et al, 2022).

Research has indicated that user adoption and satisfaction in virtual spaces are influenced by performance expectancy, which is defined as the technology's anticipated benefits and efficiency (Davis, 1989; Venkatesh et al, 2003). Furthermore,

it has been found that social influence, including the effects of other people's beliefs and actions on a person, plays an essential role in forming ethical beliefs and actions in online communities (Moussaïd et al, 2013). There haven't been many detailed studies done on how these variables affect what people expect from metaverse operators in terms of ethical behavior.

However, this thesis focuses on ethical issues of metaverse marketing from the perspective of consumer expectations. It is becoming increasingly evident how crucial ethical considerations are as we navigate the complexities of this new digital environment, particularly regarding the ethical conduct of metaverse operators. This thesis intends to investigate how performance expectancy and social influence shape consumer expectations of ethical behavior.

To enhance the rigor and depth of this research, artificial intelligence (AI) was employed in several key areas of the study, It has only used to refine the writing in literature review and discussion part of the thesis.

1.2   Research Problem

The metaverse has transformed digital encounters in a way that has brought up an epidemic of ethical issues, particularly in marketing The rapid development of the metaverse, a vast and immersive virtual environment, has transformed how consumers interact with digital content and marketing strategies.

Existing studies have primarily focused on the technical and experiential aspects of the metaverse, such as user engagement, technological adoption, and the potential economic impact (Mystakidis, 2022; Dwivedi et al., 2021). Research on ethical issues in digital environments has examined areas such as privacy concerns, data security, and transparency in social media and other online platforms (Siau & Wang, 2018; Taddeo & Floridi, 2016). However, these studies do not adequately address the specific ethical challenges posed by the metaverse, particularly from the perspective of consumer expectations and the roles of performance expectancy and social influence.

1.3   Research Question

RQ 1: How does performance expectancy shape consumer expectations of ethical behavior in Metaverse marketing?

RQ 2: How does social influence shape consumer expectations of ethical behavior in Metaverse marketing?

To critically analyze the interplay between performance expectancy, social influence, and ethical marketing practices in the Metaverse, this thesis aims to provide a primary analysis of how these factors collectively shape consumer expectations in Metaverse marketing. By examining these dynamics, the paper seeks to offer practical recommendations for Metaverse operators and marketers to build consumer expectations. The objective is to develop actionable insights based on the findings to improve ethical standards in Metaverse marketing, thereby fostering greater consumer engagement and satisfaction.

1.4 Research Structure

This thesis is structured into six chapters (Figure 1), each serving a specific purpose in my investigation. Chapter 1 introduces the study by explaining why the author is researching and what the aim is to achieve. Chapter 2 reviews existing literature on the metaverse and its impact on marketing, including discussions on the ethical issues related to emerging technologies in the metaverse. Chapter 3 provides a detailed explanation of the chosen research methodology, covering how the author collected and analyzed data. Chapter 4 presents the findings of the research and examines the hypotheses formulated in the given context. Finally, Chapter 5 discusses the theoretical conclusions drawn from the study, along with their practical implications and limitations. It also suggests areas for future research.

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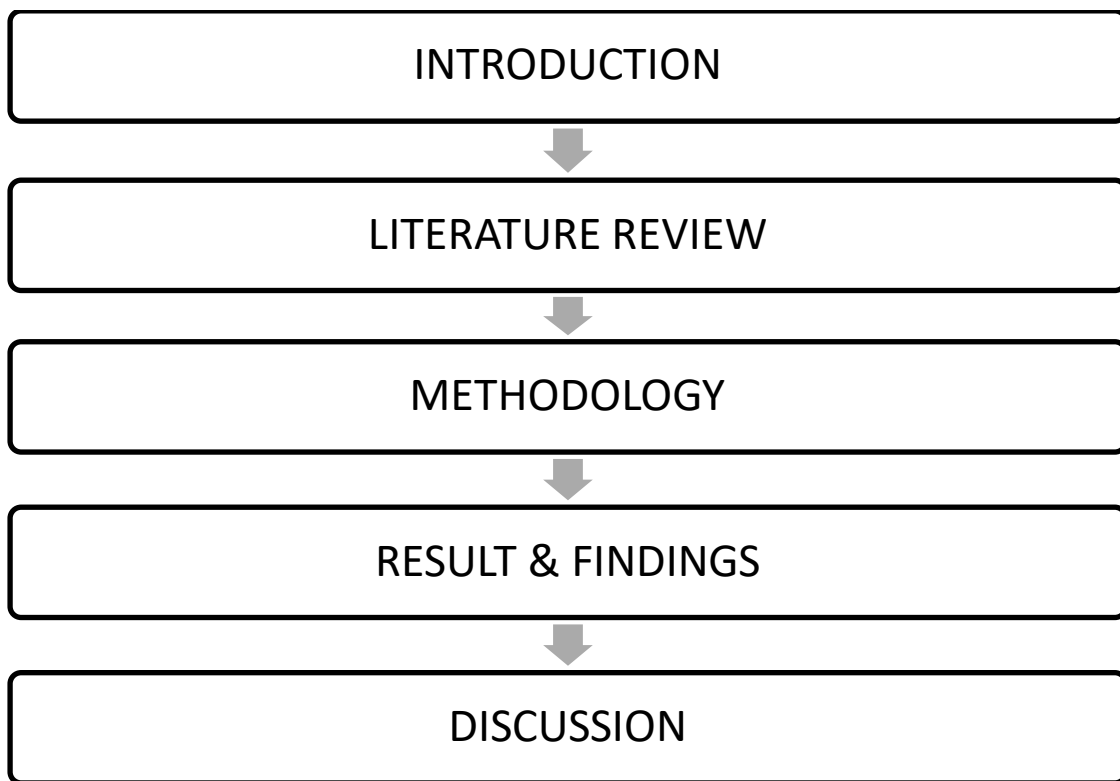
Figure 1 Structure of the Study

2   LITERATURE REVIEW

This chapter presents the major ideas that have been determined to be essential components of the research. To gain a thorough grasp of the subject, the definition of Metaverse, Metaverse in Marketing, and analytics is given first. Furthermore, it is related to clarify that they are applied in comparable research. Lastly, the study's theoretical framework is introduced.

2.1 Metaverse

The term "metaverse" was initially used in Stevenson's 1992 novel "Snow Crash," which talked about a virtual world that coexisted with the physical world. There is currently no fully developed mainstream metaverse, despite the idea being backed by active projects (Lee et al, 2021). The Metaverse, a virtual reality platform that facilitates communication between users and digital content, is rapidly gaining traction in various industries, including marketing (Yoo et al, 2023). The Metaverse has the power to drastically alter how people connect and use the internet because of its more immersive and engaging experiences. It might enhance medical processes and provide virtual travel opportunities for the travel, hotel, and healthcare industries (Garavand & Aslani, 2022). Companies that are engaged in metaverse development include Adobe, Meta, and Microsoft. Scholarly investigations examine its influence on society, possibilities for education, and multifaceted viewpoints that include law, governance, behavioral consequences, and further areas (Metaverse Standards Forum, 2023).

The idea of the Metaverse has been rapidly evolving since the pandemic hit in 2020 (Dwivedi et al, 2022, 2023). A network of three-dimensional virtual worlds with an emphasis on social interaction is called Metaverse (Caulfield, 2021). The metaverse, a popular term for a fictitious version of the internet that is a universal

virtual environment made possible by the implementation of augmented and virtual reality headsets, is frequently depicted in science-fiction novels and futuristic films (Bibri & Allam, 2022; Huggett, 2020). In certain metaverses, virtual economy and real-world integration are combined. Following the pandemic, many businesses have shifted to remote work, and customers are using the internet more frequently for shopping and socializing (Foxall, 2024). As a result, people are beginning to realize the many benefits of the digital realm and will eventually begin interacting with others online rather than in person (Parlar, 2023; Rathore, 2018).

2.1.1 Metaverse in Marketing

Since improving user experience is the main objective of almost all metaverse apps, it makes sense to look at metaverse marketing initiatives from the standpoint of "consumer experience" as opposed to only technology (Dwivedi et al, 2023; Khatri, 2022). This strategy expands the range of feasible business models and possible applications that help people and organizations innovate, market, and sell new goods and services (Tan et al, 2023; Vaia & Dinh, 2023.). Researchers explore how marketers might use environmental fidelity, sociability, and immersive Ness as essential components to create engaging consumer experiences in the metaverse (Tan et al, 2023). Several published studies in the marketing literature offer thorough overviews of the metaverse and concentrate mostly on the effects that the metaverse will have on consumers (Belk et al, 2022). The five fundamental components of the metaverse digitally mediated, spatial, immersive, shared, and real-time operational could influence this (Venkatesh et al, 2012).

Global marketers can benefit greatly from the Metaverse, which is defined by vast virtual landscapes and engaging interactions (Rijmenam, 2022). Organizations can go beyond traditional bounds of engagement and connection thanks to its dynamic and linked world. Several factors highlight the importance of marketing in the Metaverse (Table 1). The first column emphasizes the significance and applicability of marketing specifically within the context of the Metaverse. The second column suggests a dynamic and evolving relationship, indicating how marketing practices are integrating into the Metaverse.

Table 1 The importance of marketing in Metaverse

	Importance and Relevance of Marketing in the Metaverse	The intersection of Metaverse and Marketing
Immersion	The Metaverse's immersive potential allows brands to	The Metaverse enables immersive storytelling on unprece-

	surpass traditional methods by integrating experiential marketing with virtual reality, augmented reality, and digital elements for exceptional customer experiences (Pieters, 2022).	dented levels. Brands craft intricate narratives within virtual spaces, fostering user engagement and loyalty. This connection allows brands to effectively communicate their values (Dwivedi et al, 2022; Pieters, 2022).
Personalization	Enhanced personalization capabilities in the Metaverse enable marketers to craft customized experiences based on the tastes and behaviors of individual users, ultimately boosting user engagement and the efficacy of focused marketing campaigns (Rathore, 2017).	Marketers leverage data and machine learning to tailor experiences to individual preferences. Hyper-personalized experiences dynamically adapt in real-time, offering precise product suggestions or adjusting virtual environments to suit user tastes (Rathore, 2018).
Community engagement	To promote crowdsourced innovation, brand promotion, and community development, Metaverse actively promotes community participation by promoting connections between peers, brands, and consumers (Rathore, 2018).	Traditional advertising evolves into AR formats in the Metaverse. Brands integrate ads into users' personal spaces within virtual environments. This interactive approach enhances engagement and presents products in relevant contexts (Boyd et al, 2010).
Real-Time Adaptability	In the Metaverse, marketing tactics may be swiftly modified in response to real-time consumer feedback, guaranteeing that campaigns will always be relevant and appealing. (Rathore, 2018).	Avatars enable customer care agents to offer real-time assistance, hence enhancing the client experience. Teams working on research and development projects can cooperate more successfully no matter where they are physically located (Hassan et al, 2022).
Brand presence	Through the creation of dynamic virtual places for ongoing engagement, brands may create a lasting digital pres-	Establishing a strong brand presence in the Metaverse is crucial. Companies can create virtual environments reflecting

	ence in the Metaverse that improves accessibility, visibility, and customer connection (Cha et al, 2010).	their brand essence. Users can fully immerse themselves in these brand experiences, whether it's a flagship store or a unique themed space, driving engagement (Cha et al, 2010).
Gamification	By using gamification components in Metaverse marketing, brands may create more engaging and dynamic user experiences and increase user engagement (Kietzmann et al, 2011; Xiang & Gretzel, 2010).	Gamifying marketing efforts is a powerful strategy in Metaverse. Brands create unique experiences like branded games or challenges, driving engagement and forming stronger brand connections (Nevelsteen, 2018).

The Metaverse has replaced traditional online selling with marketing, providing marketers with new opportunities to maximize profits and generate money (Khatri, 2022; Rathore, 2018). The immersive experience of traditional physical stores has not yet been matched by online purchasing, despite consumers' initial embrace of online and e-marketing concepts (De Guzman et al., 2019). Online shopping is asynchronous (Xiang & Gretzel, 2010). With the help of Metaverse, e-commerce can give way to mobile commerce, which offers a more dynamic, immersive, and immediate shopping experience. As a result, Metaverse marketing offers flexible and creative answers to customer needs by substituting standard 3D e-commerce with an almost connected environment (Swilley,2015).

Academic studies on Metaverse marketing have also lately accelerated due to the Metaverse's expanding potential (Hennig-Thurau & Ognibeni, 2022). With accompanying case studies, Hennig-Thurau and Ognibeni (2022) investigated the possibilities of the Metaverse, including customer service, virtual shops and stores, and workplace collaboration. Sebastian (2022) investigated the variables that affect the intention and practical application of Metaverse in social media, marketing, e-commerce, and education. Sebastian (2022) confirmed that lower cyber security risks increase Metaverse user acceptance (Parlar, 2023; Sebastian, 2022).

There are several industries where the Metaverse is expected to have a big impact, including gaming, social media, fashion, technology, and urban. Metaverse marketing is being used by gaming platforms such as Roblox and Fortnite to get a competitive advantage. Social media behemoths like Facebook, which was renamed Meta, are incorporating Metaverse ideas to improve corporate growth and connec-

tivity (Kietzmann et al., 2011; Xiang & Gretzel, 2010). Virtual reality and digital worlds are being used by fashion businesses like Gucci and Prada to reimagine consumer experiences. Apple, a leader in technology, has made a significant investment in Metaverse. (Dawson, 2022). Technology firms are also creating smart cities with cutting-edge outdoor advertising and marketing tactics (Venkatesh et al., 2012).

Before releasing new products to the public, brands can test them out in the metaverse (Lee et al., 2021). Businesses can create a new product prototype in the metaverse and test it with users before releasing it to the public (Rijmenam, 2022). This can assist businesses in gathering client feedback before a product's release and making any necessary adjustments. Over time, this might help the brand save money and effort. Consequently, the ultimate product that is provided to the client is more appropriate to satisfy their needs than it would have been had the company depended on traditional methods of product development. In the initial five months of 2022, companies invested an estimated $120 billion in constructing metaverse infrastructure and technology (Mckinsey & Company, Ahn et al 2022), and Meta alone is said to have spent $36 billion on the metaverse during the previous four years (Mann, 2024.).

2.2   Theoretical Framework

The purpose of this chapter is to justify the study's hypotheses, which are also supported by extant theory. The following figure provides an overview of the key constructs and the hypothesized relationships between them.
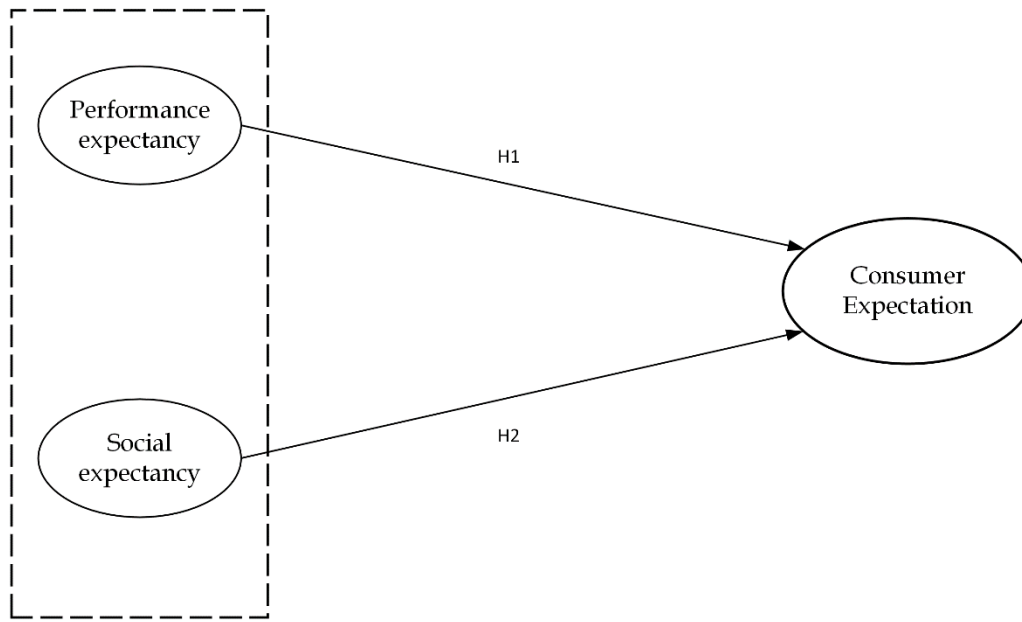
Figure 2 Theoretical Model

2.2.1 Factors That Influence the Use of Technology and the Expectations of Consumers that Use It

Assessing customer expectations in the metaverse in the marketing environment requires an understanding of the elements influencing the use of technology and the people who use it. Although current models like the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al, 2012), haven't been used specifically to gauge consumer expectations in the metaverse, their guiding ideas offer insightful information about the pertinent variables.

The theoretical model helps to clarify the processes by which social and performance expectations affect and what consumers expect in the Metaverse. This method is based on the UTAUT framework but is specifically designed to assess the consumer expectation of Metaverse marketing.

In the theoretical framework, Performance Expectancy is defined as the extent to which an individual perceives that using a specific system or technology will improve their activity performance (Venkatesh et al., 2012). Within the metaverse context, this construct may be interpreted as the expectation that participation in these virtual environments will enhance the effectiveness or outcomes of marketing communications. Privacy, data security, and transparency are just a few of the ethical considerations (Parlar, 2023), that go beyond practicality and use. It is anticipated by this alignment that moral marketing in the Metaverse will raise performance standards, which will then favorably impact consumer expectations.

In the theoretical framework, social influence is defined as the impact of social factors, including peer recommendations, social norms, and subjective standards, on

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the usage of technology (Venkatesh et al, 2003, 2012). Within the context of marketing in the metaverse, this construct captures the extent to which social influences shape consumer expectations about the platform. It focuses on how peer behaviors and societal standards affect the Metaverse, especially as they are influenced by ethical marketing techniques. This encapsulates how ethical norms are accepted by the community and how they affect the expectations of certain users.

Venkatesh et al. (2003) developed UTAUT, which combines eight theories/models to offer a cohesive framework (Venkatesh et al, 2012). According to UTAUT, users' behavioral intention is influenced by four independent variables: social impact, expected effort, performance expectation, and facilitating factors (Venkatesh et al, 2003, 2012). The UTAUT has been widely used in a variety of circumstances, it may be applied to studies of metaverse acceptance where exogenous and moderating variables are controlled to see how the four independent variables of the UTAUT are affected (Bhattacherjee, 2001; Venkatesh et al., 2003). Moreover, the concepts of media richness and information overload, respectively pertain to the primary motivation for media users to engage with a platform and the complexity and acceptance of the content (Lee & Kim, 2022). These constructs are fundamental in assessing how consumers accept and use new technologies. By applying this model, the thesis can systematically evaluate how these factors influence consumer behavior in the context of the Metaverse.

UTAUT has been proven adaptable to various technological environments, which makes it highly suitable for studying emerging technologies like the Metaverse (Lee & Kim, 2022). The model's flexibility allows for the incorporation of additional variables, specifically, consumer expectations which are crucial given the novel context of Metaverse marketing. Additionally, user demographics such as age, experience, gender, and voluntary use play moderating roles in these constructs. With an impressive explanatory power of up to 70%, the UTAUT model surpasses previous models in assessing technology adoption, which collectively explained only 17% to 42% of the variance in users' intention to adopt technology and related behaviors (Arpaci et al., 2022). Technical features, tasks, or processes affected by new technology are referred to as technical aspects.

In the realm of Metaverse marketing, ethical practices concerning data privacy, security, and transparency are not just peripheral concerns but central to user adoption and expectation. This thesis extends the UTAUT model to explicitly examine how performance expectancy and social influence affect consumer expectations to ethical conduct, thereby providing a deeper understanding of user behavior in technologically mediated environments.

In addition to virtual reality, the metaverse is a three-dimensional virtual environment that supports social, political, cultural, and economic activities (Mozumder

et al., 2022). It's frequently used to characterize a virtual world that is lifelike and permits the coexistence of reality and unreality. The metaverse is classified into four categories based on the type of knowledge and the environment in which it is used: augmented reality, virtual reality, realism, and mirror worlds (Choi & Kim, 2017). The four different metaverse forms exist separately, but as interaction grows stronger, they combine to produce a single form. The technique of verifying trust in novel technologies has been extensively researched in earlier Metaverse investigations (Siguaw et al., 1998). Metaverse is a revolutionary technology that requires confirmation of confidence before it can be used. Utilizing UTAUT also allows this study to benefit from the model's empirical robustness. UTAUT has been validated across diverse studies and settings, providing a reliable basis for examining the details of consumer behavior in the Metaverse. This empirical foundation supports the investigation of detailed issues like ethical perceptions and their impact on technology acceptance.

The incorporation of ethical considerations into the UTAUT model as a pivotal factor affecting consumer expectations represents a significant enhancement to the traditional framework. This revised model offers a primary understanding of how such standards impact consumer behaviors in digital environments. Furthermore, it explores the extensive implications of ethical practices on digital marketing, enriching the discourse in this evolving field.

2.2.2 The Ethics of Metaverse

The metaverse is defined as a self-sustaining, hyper-spatiotemporal, 3D immersive virtual shared place formed by the combination of consistent virtual environments and augmented physical realities. Avatars controlled by the user, digital items, virtual settings, and other computer-generated components make up this synthesized reality. Avatars are people who can interact, work together, and socialize with other people in the metaverse by using any kind of smart device to access their virtual identities.(Wang et al., 2023). This table summarizes the primary threats and countermeasures for authentication and access control in the metaverse, based on an academic analysis (Table 2).

Table 2 The primary threats and countermeasures for authentication and access control in the metaverse

Threats to Authentication in Metaverse		Examples
Identity Theft	Users in the metaverse are at risk of identity theft, which can damage personal information, avatars, and digital possessions. Hacking user accounts	Roblox and the Opensea NFT marketplace.

	using personal VR devices and phishing are two examples, as shown with Roblox and the Open Sea NFT marketplace (Nate Nelson, 2022).	
Impersonation Attack	These attacks involve unauthorized entities impersonating legitimate users to get access to services, which is frequently made possible by data breaches in devices. (Antonioli et al., 2020; Hu et al., 2015).	The Oculus helmet or Bluetooth vulnerabilities (Antonioli et al., 2020; Hu et al., 2015).
Avatar Authentication Issue	Authenticating avatars presents substantial issues due to the possibility of malevolent entities creating exact digital reproductions, increasing worries about the necessity for additional personal information to secure authentication (Falchuk et al., 2018).	Adversaries can develop many AI bots (i.e., digital humans) who appear, hear, and behave identically to the user's real avatar in the virtual world (e.g., Roblox), by replicating the user's appearance, voice, and habits (Falchuk et al., 2018).
Trusted and interoperable Authentication	Ensuring reliable authentication across several virtual platforms and domains is critical, necessitating fast cross-platform identity verification (Dionisio et al., 2013).	The secure and seamless transfer of assets and avatars between Roblox and Fortnite, along with the exchange across different administrative domains facilitates various services within Roblox (Dionisio et al., 2013).
Threats to Access Control in the metaverse		
Unauthorized Data Access	As metaverse services expand, they generate sensitive personal data that unscrupulous virtual service providers (VSPs) can unlawfully access, putting user privacy at risk through tactics like as buffer overflow and tampering with access control lists (Xu et al., 2022).	Malicious VSPs, for example, may illegally increase their rights to data access through attacks like buffer overflow and altering access control lists (Yu et al., 2018).
Misuse of User	Data relating to users or avatars can be exploited for profiling and advertising,	In the case of B2C2 Ltd v Quoine Pte Ltd, there

with concerns amplified by the non-interoperability of various metaverse subsystems, complicating data tracing (Wang et al., 2023).	was a conflict centered around algorithmic cryptocurrency trading, which exposed the significant financial losses that could befall an end-user if the trading software were to fail, particularly when real money was at stake in these transactions (Loke, 2020).

2.2.3   The Ethics of Metaverse in Marketing

The marketing industry has seen a major shift in communication strategies due to the emergence of the metaverse as a disruptive factor (Hennig-Thurau & Ognibeni, 2022). At the front of this new digital world, marketing communication is developing with Metaverse to present brands with unmatched chances to connect, communicate, and excite customers (Giang Barrera & Shah, 2023). According to reports, the Metaverse has a significant impact on several aspects of marketing communication, including media, marketing, advertising, and public relations. This means that brands and businesses can use the Metaverse to help them develop promotional strategies that maximize the effectiveness of their efforts in reaching their target audience (Giang Barrera & Shah, 2023; Papagiannidis et al, 2008).

In contrast, all interactions on today's social media platforms occur in a two-dimensional structure, unlike the Metaverse. One of the several advantages of the metaverse's platform advancement is a more captivating virtual world where every user is potrayed by a three-dimensional avatar (Narin, 2021). Big data analytics is widely used by organizations to evaluate the behavior of internet users. Shortly, behavioral profiling and mining will also utilize this technology more. Even before the Metaverse existed, several companies employed information profiling to psychologically persuade customers to purchase or use their products. The user's digital footprint is used to generate profile data (Anshari et al., 2019). Nevertheless, the Metaverse platform will create more digital traces as a result of its use, which will make user profiling easier and more accurate. It's a moral matter that needs to be thought through beforehand (Fernandez et al, 2022). Because of the development of the metaverse, there are a ton of options available to marketers these days to advertise their goods and services. By employing strategies such as digital billboards, which have been there since the early days of Second Life and other platforms,

brands can raise their profile in the metaverse (Chohan & Paschen, 2021). Furthermore, the acceptance of nonfungible tokens (NFT) sets by companies, as demonstrated by projects like Lamborghini artworks and Adidas virtual wearables, highlights the possibility for creative marketing approaches in this virtual environment (Gautam, V. 2022). With the metaverse becoming a venue for improved consumer insights, privacy problems and unethical usage of metaverse data are becoming more and more prominent in academic discourse. The increasing significance of privacy in technology research is demonstrated by studies conducted by (Rauschnabel et al. 2018, Hilken, Keeling, et al. 2022, and Dwivedi, Ismagilova, et al. 2021). The metaverse is expected to increase the length and detail of consumer data, which could lead to several privacy risks, such as business data sharing, government spying, and hacking. As a result, businesses will be under more pressure than ever to handle customer privacy issues in the metaverse, much more so than in more conventional online settings.

Though a great deal of study has been done on metaverse technology, very little has been done on security and privacy in the metaverse. Like social networking sites, security, and privacy become critical issues in the metaverse environment (Parlar, 2023). It can secretly watch and gather details about biometric signs to risk user privacy, (such as facial expressions and vocal modulations), and behavioral patterns (such as interpersonal interactions and transactional activities) of metaverse users in real-time (Wang et al., 2023). Thus, the cyber (or digital) context that is fundamental to the metaverse requires a thorough investigation of privacy and security concerns to provide users with the best services possible securely and efficiently (Far & Rad, 2022; Wang et al., 2023). These factors ought to cover a wide range of precautions, approaches, and fixes meant to protect users as well as systems from various dangers This part, as seen below (Table 3), conducts a thorough analysis of any security risks and obstacles (Tekinerdogan et al., 2022).

In the area of metaverse marketing, safe and effective identity management is critical for facilitating smooth interactions and service delivery between users and avatars. Digital identity management in the metaverse is often separated into three basic forms, each with unique consequences for marketing strategies:

Table 3 Security Measures for Authentication and Access Control in the Metaverse (Tekinerdogan et al., 2022)

Security Measures for Authentication and Access Control in the Metaverse	
Centralized identity	Centralized identities such as (Gmail accounts) are simple to manage but can lead to single points of failure (SPoF) and data leaking. In marketing, these vulnerabilities can have an impact on customer expecta-

	tions and brand reputation, necessitating strong security measures (Wang et al, 2023).
Federated identity	His identification system is managed by several institutions or federations, which reduces the administrative load connected with cross-platform and cross-domain activities. Federated identities help marketers provide a better customer experience by reducing the need for repetitive data entry across marketing channels. However, they still pose significant hazards due to centralized control, which may influence data privacy and security (Jensen & Jaatun, 2013).
Self-Sovereign Identity	Individual users have complete control over their digital identities because of SSIs, which allow individuals to exchange and manage personal information like passwords and educational backgrounds across domains on their own. This strategy promotes increased user liberty and interoperability, both of which are critical for tailored marketing in the metaverse. By giving people authority over their data, SSIs increase trust and engagement in marketing campaigns (Samir et al, 2022).

For immersive experiences, the Metaverse relies on real-world data, which presents possibilities and obstacles for marketers. Although virtual worlds allow organizations to construct more dynamic and engaging marketing campaigns, security and confidentiality of information concerns are raised. Effectively managing these concerns is crucial for marketers to maintain consumer confidence and comply with privacy laws, all the while capitalizing on the immersive qualities of the Metaverse to enhance consumer engagement and targeted advertising.

2.2.4 Ethical Concerns of Metaverse in Marketing and Consumer Expectation

The metaverse offers special possibilities as well as challenges for marketing. This environment's immersive quality allows advertisers to deliver substances that are specifically targeted and customized in ways never seen before (Bibri & Allam, 2022; Brey, 2012; Johnson, 1997). However, the possibility of personalization brings up serious ethical issues with privacy, autonomy, and tampering risks. To preserve and grow customer expectations, ethical frameworks must address these problems by placing a high priority on consumer protection, transparency, and honesty (Giang Barrera & Shah, 2023; Moor, 2005, 2017).

The rise of the metaverse in recent years has brought up important ethical issues, especially in the context of marketing and how it affects customer confidence (Venkatesh et al, 2012). The border between the actual world and the virtual one is blurred in the metaverse, a communal virtual shared place that provides immersive experiences that go beyond conventional online interactions. Businesses are using the metaverse more and more as an arena for advertising and promotional activities, raising concerns about the moral implications of these actions and how they affect customer confidence (Chohan & Paschen, 2021; Papagiannidis et al, 2008). The possibility of manipulation in the metaverse setting is one important concern. Marketers have never-before-seen possibilities to customize experiences and deliver messages and content to specific users because of this platform's extremely immersive qualities. This degree of customization, nevertheless, brings up issues with autonomy, privacy, and the possibility of undue influence (Johnson, 1997). For example, using virtual influencers and avatars gives advertisers control over the image and messaging of their brands, but it also runs the danger of misleading customers with content that mixes both content created by AI and human content. This calls into question established ideas about advertising's authenticity and openness, which are essential for establishing and preserving consumer expectations (Mouritzen et al, 2024).

Since the pandemic, many businesses have shifted to remote work, consumers have used the Internet more for shopping and socializing, people have realized the many benefits of the virtual world, and they have gradually shifted from in-person to online interactions (Elmasry et al, 2022, Wunderman Thompson, 2021).

For example, high-end labels such as Dolce & Gabbana have introduced NFT lines like Collezione Genesi, providing customers with both digital and tangible product versions (Alexander & Bellandi, 2022). This creative strategy blurs the boundaries between real-life and virtual luxurious experiences by enabling customers to personalize their avatars by utilizing identical avatars in the Metaverse and wearing genuine products in the real world. These kinds of projects represent a paradigm change in the dynamics of luxury marketing since luxury goods backed by NFT are seen as markers of distinction, authenticity, and exclusivity, which changes how much consumers think luxury goods are worth (Joy et al, 2022). In addition, the notion of "virtual luxury" has surfaced, indicating a new chapter in which luxury brands provide unique digital experiences outside tangible constraints (Loureiro et al, 2018). Transparency, accessibility, financial fairness, and environmental effects are factors that impact consumers' opinions about the morality of NFT-enabled luxury in the Metaverse (De Guzman et al., 2019). To establish customer expectations and maintain sustained involvement in virtual luxury marketplaces, brands need to carefully consider how to address these ethical challenges (De Guzman et al., 2019; Guzman et al., 2021; Loureiro et al., 2018).

2.2.4.1 Privacy Challenges at the Metaverse in Marketing

The incorporation of extended reality (XR) gadgets into the Metaverse presents privacy hazards associated with the acquisition of biometric and location data (Roesner & Kohno). To maintain customer confidence and prevent negative reactions, marketers who use XR technology for comprehensive brand experiences need to address these privacy concerns (De Guzman et al., 2019; Guzman et al., 2021). If this isn't done, there may be regulatory fines and reputational harm, which could negatively impact customer perception and brand loyalty (Anshari et al., 2019).

In addition, ethical conundrums relating to data protection and privacy arise from the monetization of virtual assets and user data (Guzman et al., 2021). The massive gathering of user data in the metaverse raises important questions regarding consent, data security, and the appropriate use of personal data (Anshari et al., 2019; J. Hair et al., 2010). Ignoring these issues not only erodes consumer confidence but also exposes businesses to regulatory scrutiny and advocacy groups' retaliation (Parlar, 2023). Marketing professionals need to take a proactive stance in the face of these moral dilemmas to make sure that their metaverse operations reflect both customer expectations and ethical standards (Vaia & Dinh), transparency, responsibility, and a dedication to protecting the rights and welfare of consumers are necessary for this. Businesses can build credibility and expectation in the metaverse by giving ethical issues a top priority in their marketing plans. This will help them establish long-lasting customer relationships in this rapidly changing digital environment (Loureiro et al., 2020).

2.2.4.2 Security Concerns at Metaverse in Marketing

Examining the ethical issues that emerge is crucial as the metaverse is incorporated more and more into marketing tactics. Security is one of the main worries since using the metaverse exposes users to a variety of dangers and threats (Far & Rad, 2022). These worries can include everything from hostile actions like scams and attempts at phishing to breaches of information and identity theft (Far & Rad, 2022; Hu et al., 2015). The evolving metaverse poses real cybersecurity threats that call for extensive study standards efforts, and the establishment of regulations. The ITU's focus group, SITE, serves as an example of this, emphasizing the necessity of practical design principles for ensuring user safety in fully immersive digital environments where perception and expectation are becoming more complex (Sebastian, 2022). These measures must address possible physical, emotional, and cyber risks (Renaud et al., 2002; Sebastian, 2022). The development of sophisticated information and surveillance technologies presents problems for the role of ethics in handling connected issues, necessitating the creation of new theoretical frameworks and practical methods (Wright et al., 2014). Due to the Metaverse's distinctiveness and lack of

existing laws, national and international educational communities are becoming interested in it. This is because of its decentralized structure and apparent cybersecurity weaknesses (Hubpage, 2024).

2.2.4.3 Algorithmic Transparency at Metaverse in Marketing

Urban society is presently experiencing unprecedented transformative changes due to recent advancements in science and technology, as well as significant changes in governance. These trends include digitalization, hyper-connectivity, datafication, algorithmizing, and phantomization (Bibri & Allam, 2022). Transparency takes many different forms in conceptualizations. Related terms like "interpretability," "understandability," "black box," "explainability" or "XAI," and so forth are sometimes used synonymously to clarify this idea. Transparency is essentially an application feature that indicates how much of a system's internal workings may be understood theoretically. It can also relate to the process of educating the public about algorithmic models and conclusions through approachable explanations, which helps to improve public perception and understanding of AI. A more comprehensive socio-technical and normative definition of "openness" offers an alternative viewpoint on transparency (Garfinkel et al., 2017).

Algorithmic transparency assumes that those who use, monitor, and are affected by the systems that employ these algorithms ought to be able to see the factors that influence those choices. Algorithms, which first appeared in digital media in 2016, evolved from credit computations in the 1970s and today influence everything from social connections to purchases. Their usage in important decisions such as loans and employment screening challenges ideas of freedom and opportunity and raises questions about justice and bias, despite their purported neutrality (Garfinkel, et. al. 2017).

These new ethical issues must be addressed to protect the integrity and transparency of advertising, which are essential elements in establishing and sustaining consumer expectations. Moreover, consent, data security, and the proper use of personal information must all be handled carefully due to the massive amount of data that is collected in the metaverse. Ignoring these issues could erode customer expectations and put businesses under regulatory inspection. To meet both high ethical standards and client expectations, metaverse enterprises must adopt proactive ethical policies (Kaddoura & Husseiny, 2023).

Additionally, privacy problems associated with location and biometric data collecting are introduced by the metaverse's expanding use of XR technology. To keep consumers' expectations and prevent unfavorable outcomes like fines from the authorities and harm to their reputation, marketers need to handle these issues (Rane et al., 2023).

2.2.5 Performance Expectancy of Metaverse and Expectation of the Consumers that Use It

Performance expectancy is defined as "the extent to which consumers believe that using a technology will help them to achieve job performance" (Venkatesh et al., 2003). This concept extends to how businesses perceive the benefits of a product or service in enhancing organizational performance (Ho & Shafiq, 2021; Lehmann et al., 2020). Collado & Evans (2019) also describe performance expectancy as the confidence that certain actions will yield specific results, significantly driving an organization's focus toward achieving those outcomes.

Previous studies underscore the pivotal role of performance expectancy in determining user intentions to adopt new technologies, illustrating a positive correlation between the ambition to use new technology and performance expectancy (Loureiro et al., 2018).

In the Metaverse, performance expectancy is enhanced by platforms that simulate real-world behavioral standards, facilitating natural communication and interaction, simplifying navigation, and increasing user satisfaction (Lee & Kim, 2022). The importance of network effects, due to user participation sustaining the Metaverse, has been a focus of several studies (Nevelsteen, 2018), emphasizing that the sustainability of the Metaverse is crucial (Papagiannidis et al., 2008). While it is known that technology performance expectancy has an indirect effect on expectations, the underlying processes of this relationship are still being explored (Loureiro et al., 2018).

For instance, Metaverse users place significant emphasis on ethical concerns such as privacy protection and data usage for targeted advertising (Wright et al, 2014). These concerns must be balanced against the platform's utility. When users perceive that the Metaverse not only meets performance expectations but also upholds high ethical standards, their expectations are more likely to be aligned with the platform's offerings. This underscores the importance of ethical integrity and performance efficacy in shaping customer expectations (Olson & Dover, 1979).

Metaverse platforms that provide immersive, virtual reality-enabled experiences allow users to engage in interactions that mimic face-to-face communications in terms of speed and accuracy. This enhanced communicative effectiveness fosters understanding and facilitates efficient task management (Lee & Kim, 2022).

Therefore, while Metaverse platforms that offer improved communicative accuracy and operation speed can lead to higher user satisfaction, the perceptions of ethical treatment concerning user data and privacy ultimately set the expectations for these platforms (Anshari et al., 2022). This highlights a complex interplay between performance expectations and consumer expectations, moderated by ethical considerations. Metaverse marketers must integrate strong ethical standards into

their platforms to both align and elevate user expectations. Consequently, the following hypothesis is formulated:

Hypothesis 1 "Performance expectancy has a positive effect on consumer expectations to ethical conduct by metaverse operators"

2.2.6 Social Influence of Metaverse and Expectations of the Consumers that Use It

The development of the metaverse raises significant ethical questions, particularly regarding customer privacy, buyer behavior, and legal frameworks (Moor, 2017). Corporate social responsibility (CSR) mandates require businesses to protect various stakeholders, including the environment, communities, workers, and users while promoting financial success (Foxall, 2024). The ethical aspects of the metaverse intersect with broader concerns of computer ethics, which are influenced by societal ideals shaped by information technology. These ethical issues are integral to the governance of the metaverse, necessitating strong governance protocols and extensive stakeholder participation (Johnson, 1997).

A socio-technical perspective helps understand the interaction between technology and social factors (Bostrom & Heinen, 1977). Human characteristics such as expectations, values, and attitudes are linked to social factors. It's crucial to differentiate between social acceptance and ethical approval (Adell et al., 2018). Although widespread acceptance might suggest alignment with prevailing moral norms, it does not necessarily confer ethical soundness (Van de Poel, 2016; Daniels, 1979). Public opinion coherence often leads to broader approval (Surowiecki, 2005).

In the metaverse, the effectiveness of marketing techniques is primarily determined by their ethical alignment, not just social acceptance (Cheah & Shimul, 2023). The rise of the metaverse introduces vital ethical issues, particularly concerning user privacy, purchasing patterns, and legal frameworks. CSR demands actions to protect various stakeholders, promoting financial success while addressing ethical complexities (Giang Barrera & Shah, 2023). The ethical dimensions of the metaverse relate to broader technological issues and highlight concerns about privacy and transparency, essential for metaverse activities such as virtual lifestyles and economic production. Strong governance practices and extensive stakeholder participation are required due to the ethical challenges and the absence of specific regulatory frameworks for business operations in the metaverse (Belk et al., 2022).

Consumers are likely to align their expectations with companies that match their marketing tactics with ethical guidelines. This emphasis shows the importance of integrating ethical issues into metaverse initiatives to enhance consumer satisfaction and ensure adherence to CSR regulations. International standards specific to

digital environments are crucial as they guide moral behavior and ensure user safety in the metaverse (Arpaci et al., 2022).

This thesis explores how social influence affects consumer expectations of ethical conduct. Understanding these ethical evaluations is crucial because they directly impact how users perceive and engage with marketing techniques. This thesis aims to analyze the primary research on the positive impact of social influence on consumer expectations in metaverse marketing.

- **Hypothesis 2** "Social influence has a positive effect on consumer expectations to ethical conduct by metaverse operators"

3   METHODOLOGY

The most relevant methodological decisions for the investigation are presented in this chapter. The quantitative research approach is presented first. The data collecting is examined in the second place. The data analysis procedure is covered last.

3.1 Quantitative Research

This thesis utilizes a quantitative approach to explore the relationship between performance expectancy, social expectancy of the metaverse in marketing, and consumer expectations. Grounded in the Unified theory of acceptance and Use of technology (UTAUT) (Venkatesh et al, 2012), the thesis examines the role of expectancy constructs on the expectations of consumers in the context of the metaverse.

Convenience sampling was utilized to choose over 100 current Metaverse users for the Webropol survey that was used to gather the primary data. Although effective, this approach can affect how broadly the results can be applied, a factor considered in the study's limitations. Through the use of Smart-PLS for path analysis and SPSS for statistical testing, the data was analyzed to help identify the connections between social impact, performance expectancy on customer expectation."

Numerous techniques, including direct measurement, historical records, and surveys, can be used to collect data for quantitative research (Burton & Steane, 2004). Primary and secondary data are the two main categories of data. Researchers should ascertain whether their goals may be met with easily accessible secondary data before directly collecting primary data (Hair et al, 2017; Pearlson et al., 2024). The information gathered for this study will be primary data since there isn't any necessary, usable secondary data about Metaverse that might address the goals of the research. In today's social sciences, quantitative research might be considered the major survey strategy. Essential elements of quantitative research involve making conclusions

from earlier studies, identifying concepts, generating hypotheses, and obtaining data in a manner that can be handled statistically. Drawing inferences from statistical analysis is also essential (Berman, 2006).

3.2   Data Collection & Survey

In this study, participants were recruited using the platform Webropol survey portal. For very inexpensive research that incorporates a big sample of people in a short amount of time, an Internet survey is a good choice. This approach requires the target audience's technological knowledge and Internet accessibility. When data is collected through surveys, the questionnaire is standardized for each participant, which lowers the possibility of interviewer bias (Appendix 1). The use of these techniques is shaped by the methodological choices and theoretical implications of researchers rather than being essentially associated with any one standard or approach. In terms of data collection, researchers may employ instruments for comprehensive qualitative description, validation purposes, guiding purposeful sampling, or as aids in interview settings. Similarly, in data analysis, techniques range from interpretively quantitative datasets to the nuanced processes of quantifying information. This paper explores the integration of quantitative sampling, data collection, and data analysis. (Saunders et al, 2019).

Consequently, it is possible to standardize, analyze, and apply the collected data as a generalization. Since this paper aimed to study the role of performance expectancy and social influence on consumer expectations to ethical conduct in metaverse marketing, the author recruited 100 participants among which 50% were users of technology in terms of using marketing platforms. A cross-sectional survey design is used in this study to collect primary data from people who have recently or are currently using Metaverse platforms. The survey is designed to gather data on participant demographics, how they use metaverse platforms, whether they think marketing in the Metaverse raises ethical questions, and what they expect from such efforts.

Moreover, an online questionnaire was designed with a series of Likert-scale questions to measure the central constructs derived from the UTAUT model: performance expectancy, ethical perception, and consumer expectation in metaverse marketing. Additional demographic information was also collected, including age, gender, income, and experience with metaverse marketing tools.

The questionnaire's first section is devoted to asking respondents about their demographics. Information about participants' gender, age, yearly income, occupation, degree of education now, and experience using Metaverse marketing tools is requested. Using demographic profiling has multiple benefits.

The researcher can examine how various demographic groups engage with and see Metaverse marketing by knowing the demographics of the sample. For example, looking into variations based on income or age offers insights into the preferences and habits of users (Sandelowski, 2000).

By mentioning Metaverse platforms and the respondent's experience using them, researchers can determine how familiar and involved a person is with these new marketing environments. Are the users beginners or seasoned pros? How do experiences affect the way they perceive things (Lee et al., 2021)?

The survey consists of Likert-scale questions designed to measure participants' perspectives on ethical practices in metaverse marketing at various phases. These questions are intended to assess six latent variables indicated in the research framework (Appendix 1),

Researchers learn about prevalent ethical standards and practices in digital settings by evaluating respondents' ethical assessments. Do users care about privacy issues? What role do they think data security and transparency play in Metaverse marketing? The ethical terrain is clarified by these rankings (Moor, 2017).

Researchers can compare ethical attitudes among various demographic groupings. Do younger users, for example, have different ethical sensitivity than senior participants? Are the income brackets different from one another? These studies aid in the development of a sophisticated comprehension of ethical issues (Figueroa-Armijos et al, 2023).

The questionnaire's following parts center on three important themes:

Consumer Expectation: CE1, CE2, CE3, CE4, and CE5 inquire about respondents' degrees of confidence in services and goods connected to the Metaverse are made. Customer expectations are shaped by various information sources before, during, and after a purchase. Olson & Dover (1979) define these expectations as pre-trial beliefs about a product or service that remain vague in the absence of specific information. However, customers typically access multiple sources that shape their expectations about future service interactions.

Performance Expectancy: In PE1, PE2, and PE3 Participants assess what they anticipate from Metaverse marketing products in terms of performance. To what extent do they expect these tools to be user-friendly, efficient, and effective (Arpaci et al., 2022; Lee & Kim, 2022)?

Social Influence: In SI1, SI2, and SI3 The impact of social variables, such as peer pressure and social norms, on Metaverse usage is examined in this section. To what extent do societal forces affect users' choices about using Metaverse platforms (Arpaci et al., 2022; Figueroa-Armijos et al., 2023; Lee & Kim, 2022)?

Table 4 Measures

Consumer Expectation CE	Olson & Dover, 1979
Performance Expectancy PE	Venkatesh et al., 2003
Social Influence SI	Venkatesh et al., 2003

3.3   Sampling Method

Convenience sampling can be utilized in both qualitative and quantitative studies. However, it is more commonly used in quantitative studies than purposeful sampling in qualitative investigations (Explorable.com, 2009.).

In this study, a non-probability sampling technique, specifically convenience sampling, was used to collect primary data from a specified sample of participants. Convenience sampling prioritizes generalizability, ensuring that the results are representative of the sampled community (Etikan, 2016).

This strategy was chosen for its cost-effectiveness and efficiency in reaching out to potential respondents who are easily accessible and eager to engage (Sandelowski, 2000). To address the matter of legitimate results from studies for a target community, researchers frequently employ one of a variety of population sampling methodologies or conduct database analysis that is assumed or believed to be an accurate representation of the research's target population (Stratton, 2023). The survey was administered via the Webropol survey portal, resulting in a streamlined approach for gathering responses from 100 participants who were either recent or current Metaverse platform users. This sample size was deemed suitable to investigate consumers' ethical judgments and confidence in Metaverse marketing, with an emphasis on their interactions and experiences in these digital spaces. While convenience sampling aided in the data collection portion of this study, it is crucial to highlight that the findings may not apply to all Metaverse platform users due to potential biases associated with this sampling strategy.

Table 5 Nonprobability sample design (Henry, 1990, p.18)

Type of Sampling	Selection Strategy
Convenience	Select cases based on their availability for the study
Purposive	Select cases that judged to represent similar characteristics
Snowball	Group members identify additional members to be included in the sample

Quota	Interviewers select a sample that yields the same proportions as the population proportions on easily identified variables

3.4 Data Analysis

The partial least square structural equation was used to develop a measurement model based on the hypotheses and evaluate its validity and reliability (PLS-SEM). Lastly, the Smart-PLS 4.0 bootstrapping process was used to test the hypotheses.

4   RESULTS

This chapter explains how the data was processed and analyzed, including strategies for testing hypotheses, validity, and dependability. The findings of the data analysis are presented. More precisely, this chapter discusses the data's demographics and background as well as measurement and structural modeling. However, 11 data were eliminated since those data were not relevant to this study. Apart from these exclusions, there were no missing response patterns or missing data in the remaining dataset.

The thesis used a quantitative research methodology (Blaikie, 2003), with primary data collected through a survey. Participants were recruited via the Webropol survey portal, allowing for an easy and cost-effective survey administration to a large cohort. The study sought information from those who had recently engaged with or were active users of Metaverse platforms. It focused on obtaining information about their demographic backgrounds, Metaverse platform usage patterns, ethical perceptions of Metaverse marketing tactics, and trust in these marketing initiatives. This approach enabled a thorough knowledge of user interactions and experiences in the Metaverse environment, which was crucial to the study's objectives.

4.1 Demographic and background information

Within the framework of this thesis, demographic analysis functions as a fundamental instrument for discerning and defining discrete audience categories, hence facilitating a customized strategy to fulfill certain media consumption requirements associated with smartphone use (Learning, 2024.; Murdock et al, 2015). Determining whether the main clientele is private persons or corporations is crucial before starting any demographic study, as this distinction affects the variables chosen and the data-gathering technique (Learning, 2024.). Gender representation in the survey

population was virtually balanced, with 52% males and 48% females. According to a thorough breakdown by age group, the majority of respondents were between the ages of 25 and 30, accounting for 52.3% of the population, followed by the 18-24 age group, which represented 24.3%. People aged 31 to 40 made up 21.6% of the population, while older age groups (41-50, 51-60, and over 61) made up only 1.8%. Respondents' income levels were generally low, with 83.7% earning between 0 and 30,000 euros per year. Those earning between 31,000€ and 60,000€ accounted for 12.7%, while only 2.7% reported incomes between 61,000€ and 90,000€. Higher-income categories (91,000€ to 120,000€ and more than 120,000€) were underrepresented or not represented at all, accounting for only 0.9%.

In terms of professional backgrounds, students comprised the largest category, accounting for 63.6% of respondents. This was followed by employed professionals or employees at 31.8% and entrepreneurs at 4.6%, respectively. No retirees were included in the survey. In terms of education, a large proportion of respondents (52.3%) had a bachelor's degree. Those with only primary school or a diploma were in the minority, accounting for 4.6% and 5.5%, respectively. Ph.D. holders were similarly in short supply, accounting for only 0.9%.

The majority of respondents (66.1%) have less than one year of experience using the Metaverse platform. Those with 1 to 4 years of experience made up 32.1% of the sample, divided into 14.7% with 1-2 years and 17.4% with 1-4 years, while those with 2-3 years of experience accounted for only 1.8%.

Facebook was the most popular platform, being used by 93.6% of those questioned, according to usage patterns for technology and platforms. The utilization of other platforms was noticeably lower: 1.9% for Apple Vision Pro, 1.8% for Robolox, a gaming platform, and 0.9% for Decentraland, a virtual real estate platform. There were no users of the virtual reality social network VR Chat among the respondents.

When the customer is made up of private persons, personal demographics like gender, age, and income are prioritized during the data collection process (Jimit Mehta, 2023). For instance, the distribution of participants in our study was about equal between males (52%) and females (48%).

Table 6 Demographic and Background Information

GENDER	
%	
MALE	52%
FEMALE	48%
AGE	
18- 24	24.30%

25-30	52.30%
31-40	21.60%
41-50	0.90%
51-60	0.90%
>61	0.00%
INCOME	
0- 30,000€	83.70%
31,000€ - 60,000€	12.70%
61,000€ - 90,000€	2.70%
91,000€ - 120,000€	0.00%
120,000€ +	0.90%
PROFESSION	
STUDENT	63.60%
EMPLOYEE/ PROFESSIONAL	31.80%
ENTREPRENEUR	4.60%
RETIRED	0.00%
EDUCATION	
PRIMARY	4.60%
DIPLOMA	5.50%
BACHELOR DEGREE	52.30%
MASTER DEGREE	36.70%
PH.D DEGREE	0.90%
EXPERIENCE	
LESS THAN 1 YEAR	66.10%
1 - 2 YEARS	14.70%
2 - 3 YEARS	1.80%
3 - 4 YEARS	17.40%
PREFERRED PLATFORMS	
FACEBOOK	93.60%
APPLE VISION PRO	1.90%
ROBOLOX (GAMING PLATFORM)	1.80%
DECENTRALAND (VIRTUAL REAL ESTATE)	0.90%
VR CHAT (VIRTUAL REALITY SOCIAL PLATFORM)	0.00%

4.2   The Measurement Model

Factor analysis uses a variety of statistical methods to make complex data sets easier to understand. In the social sciences, this is usually achieved by looking at correlations between variables (Kline, 1994).

With the help of the Smart PLS 4.0 tool (Hair et al, 2017), a confirmatory factor analysis was carried out to examine the measurement model's validity and dependability. The relationships between constructs and the indicator variables that correspond to them are represented by the measurement model, also referred to as the outer model (Hair et al., 2017). The unidirectional predictive associations between each latent concept and the corresponding observable indicators are included in the measurement models (Hair, 2014). Since it is not allowed to have multiple relations, indicator variables are linked to a single latent construct (Hair et al, 2017; Hair, 2014; Hair et al, 2021).

The validity and reliability of reflective measurement models need to be assessed, with a particular emphasis on composite reliability. This seems particularly appropriate for PLS-SEM, which ranks indicators according to their overall reliability during model estimation, as it doesn't presume equal indicator reliability as Cronbach's alpha does (Hair et al., 2011). Composite reliability (rho_A) and average variance extracted (AVE) are all given in the table as findings of the measurement model analysis. The three constructs are Social Influence, Performance Expectancy, and Consumer expectation. The loadings for five items (CE1 through CE5) with loadings ranging from 0.799 to 0.878. This construct demonstrated high reliability with a Cronbach's Alpha of 0.898, Composite Reliability (CR) of 0.922, and Average Variance Extracted (AVE) of 0.703.

In more advanced stages of research, reliability coefficient values between 0.70 and 0.90 are considered satisfactory (Nunnally & Bernstein, 1994). The three items (PE1 through PE3) that evaluate performance expectancy have been involved (PE1 to PE3), where item loadings were robust for PE1 and PE2 but slightly lower for PE3 at 0.637. Nonetheless, the reliability scores remained acceptable with Alpha at 0.833, CR at 0.877, and AVE at 0.709. The three items that make up Social Influence are SI1, SI2, and SI3, and consistent loadings above 0.881. This construct also showed high reliability with an Alpha of 0.880, CR of 0.923, and AVE of 0.799.

Table 8 demonstrates that the model's validity and reliability are satisfied (AVE >0.5; Composite Reliability (ρC) >0.6; Reliability (ρA) >0.6; Cronbach's α > 0.7).

Table 7 Validity and reliability of measurement model

CONSTRUCTS	ITEMS	LOADING	ALPHA	ROH_A	CR	AVE
CONSUMER EXPECTATION	CE1	0.833	0.898	0.941	0.922	0.703
	CE2	0.878				
	CE3	0.863				
	CE4	0.799				
	CE5	0.816				
PERFORMANCE EXPECTANCY	PE1	0.950	0.833	0.985	0.877	0.709
	PE2	0.904				
	PE3	0.637				
SOCIAL INFLU-ENCE	SI1	0.918	0.880	0.973	0.923	0.799
	SI2	0.881				
	SI3	0.882				

Discriminant validity ensures a construct is distinct and unique, preventing multi-collinearity and misleading model interpretations (Henseler et al., 2015). Historically, the Fornell and Larcker criterion was used to assess discriminant validity by comparing the square root of the average variance extracted (AVE) with the correlations between constructs (Hamid et al., 2017).

Utilizing the average variance extracted (AVE), as recommended by Fornell and Larcker (1981), is a popular method for evaluating convergent validity. The variance that a construct captures about the variance resulting from measurement error is quantified by AVE. A value of AVE less than 0.5 indicates that measurement error is greater than the variance that the construct accounts for, which calls into question the convergent validity of the model (Fornell & Larcker, 1981).

Table 8 Discriminant validity

	CE	PE	SI
CE	0.838		
PE	0.284	0.842	
SI	0.111	0.682	0.894

4.3 Structural Model

The process and relationships between the constructs, which are essential for expressing the hypothesis and merging it with the theoretical framework, are high-

lighted in the structural model's description of the interactions between the latent variables (Hair et al., 2017). This model highlights the interactions between performance expectancy, social influence, and consumer expectations regarding ethical behavior in Metaverse marketing.

4.3.1 Hypothesis Testing

The assessment of the structural model involves testing hypotheses (Hair et al., 2021). The significance and relevance of the paths were evaluated using the bootstrapping procedure with 5,000 resamples (Figure 3). Path estimates, t-statistics, and confidence intervals were calculated to analyze the hypothesized relationships (Rahi et al., 2019). PLS employs a nonparametric bootstrapping technique, which entails repeatedly drawing random samples with replacements from the initial dataset to generate bootstrap samples. This approach enables the estimation of standard errors necessary for hypothesis testing (Hair, 2014).
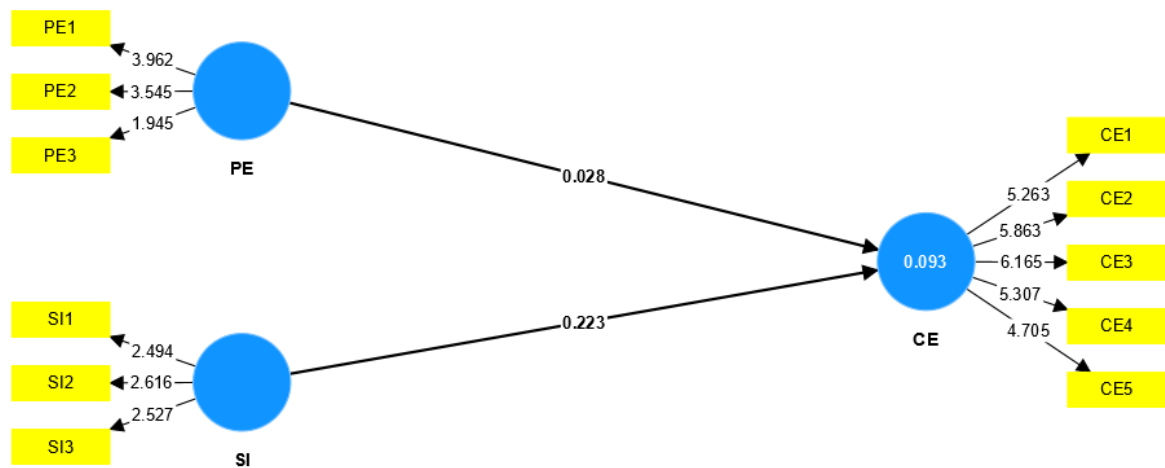

Figure 3 Structural Model Bootstrapping Calculation

The structural model results revealed that (Table 9) the path coefficient PE -> CE is 0.390, with a t-statistic of 2.196 and a p-value of 0.028, as the p-value is less than 0.05, the relationship is statistically significant, indicating that performance expectancy has a significant effect on consumer expectations, which indicates that H1 is supported. The path coefficient SI -> CE is -0.155, with a t-statistic of 1.218 and a p-value of 0.223. As the p-value is greater than 0.05, the relationship is not significant, indicating that social influence does not have a significant effect on consumer expectations, which indicates that H2 is not supported.

Table 9 Hypothesis Testing

Hypothesis	Items	Path Coefficient	P Values	Result
H1	PE -> CE	0.390	0.028	Supported
H2	SI -> CE	-0.155	0.223	Not Supported

5 DISCUSSION

In metaverse marketing, the impact of social influence and performance expectations on consumers' expectations of ethical conduct is a dynamic and complex field. This thesis, grounded in the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2012), provides a primary exploration into how these two factors, performance expectancy, and social influence shape consumer expectations. This thesis aimed to study the role of performance expectancy and social influence on customer expectations to ethical conduct by metaverse operators in marketing. The analysis confirmed that performance expectancy significantly influences consumer expectations. This finding aligns with existing literature, reinforcing the idea that consumers value the efficiency and effectiveness of technologies in virtual environments (Piccoli et al., 2001). On the other hand, this thesis found that social influence has an insignificant effect on consumer expectations in the metaverse. This suggests that consumers in these digital spaces may rely more on their personal evaluations and ethical considerations rather than peer pressure or societal norms.

5.1 Theoretical and practical implications

The integration of ethical considerations into the UTAUT model (Venkatesh et al., 2012), represents a significant theoretical advancement. Traditional UTAUT (Venkatesh et al., 2012), focuses on performance expectancy, effort expectancy, social influence, and facilitating conditions as determinants of technology acceptance (Venkatesh et al., 2003, 2012). However, this thesis extends the model by incorporating ethical concerns as a critical component, thereby enriching our understanding of consumer behavior in digital environments. It draws attention to the necessity of conducting further study in the future to understand the complex relationships that

shape consumer expectations in developing digital environments between performance expectations, and social influence to ethical conduct (Arpaci et al., 2022).

The findings indicate that performance expectancy significantly influences consumer expectations. This aligns with existing literature which posits that users value the efficiency and effectiveness of technology (Grimshaw et al., 2004), particularly in immersive environments like the metaverse (Mozumder et al., 2022). Consumers expect that their engagement in the metaverse will be beneficial and enhance their experiences, thereby reinforcing their expectations for high performance.

On the other hand, the study shows that social influence on customer expectations in the metaverse is insignificant. This finding is particularly intriguing as it challenges conventional marketing theories that emphasize the importance of social norms and peer influence in shaping consumer behavior. It suggests that in the metaverse, consumers rely more on their personal evaluations and ethical considerations rather than on the opinions and behaviors of their peers.

From a practical standpoint, the results provide useful information for platform developers, marketers, and regulators in the Metaverse (Wright et al., 2014). The significant impact of performance expectancy on consumer expectations underscores the importance of developing highly efficient and effective technological solutions. Metaverse platforms need to prioritize user experience, ensuring that their services are not only immersive but also intuitive and reliable.

Moreover, the emphasis on ethical considerations highlights the need for companies to integrate strong ethical principles into their marketing strategies. Transparency, data security, and user privacy are paramount. Businesses must actively communicate their commitment to these ethical standards to build and maintain consumer trust (Anshari et al., 2022). This approach not only aligns with consumer expectations but also enhances brand reputation and long-term engagement. The negligible impact of social influence suggests that marketers should focus more on direct communication of ethical standards and performance benefits rather than relying heavily on peer recommendations or social endorsements. Personalized marketing strategies that emphasize ethical practices and demonstrate tangible benefits to the user are likely to be more effective in the metaverse (Falchuk et al., 2018).

5.2 Limitations and Future Research

There are several limitations to this study that need to be considered. Because convenience sampling may not include all of the Metaverse's diverse user population (Stratton, 2023), the results cannot be broadly applied to all users of the Metaverse. Furthermore, natural biases in self-reported data may affect how accu-

rate the responses are when it comes to user expectations. Future studies should employ stratified sampling techniques to capture a more diverse demographic, providing a broader understanding of consumer expectations across different segments. Additionally, the rapid evolution of the metaverse means that consumer behaviors and expectations are likely to change over time. More comprehensive studies would be beneficial in tracking these changes and providing deeper insights into how performance expectancy and social influence evolve with technological advancements and societal shifts.

According to technologists, the internet will develop into the metaverse, which may become the next big technological platform and possibly even more revolutionary than cell phones (Shi et al., 2023; Hubpage 2024; Venkatesh et al., 2003). Because the metaverse replicates a fully digital experience, it may become more difficult to distinguish between online and offline experiences. Virtual reality (XR), which encompasses mixed, virtual, and augmented reality, is predicted by many experts to be very important (George et al, 2021; Rauschnabel et al, 2022). Future real-time virtual 3D environments have the potential to completely change social and professional relationships, demanding widespread use of XR technologies. At the moment, XR is primarily utilized in corporate applications and video games, but as games get more socially involved, their features might spread to other domains (Caulfield, 2021; Hassan et al., 2022).

Several studies have demonstrated that the UTAUT model excels over other models; however, the total number of research based on UTAUT models is rather small, particularly when compared with the significant amount of research based on TAM/TPB models. This is the reason why further research is required to validate and enhance the UTAUT model in various technological contexts (Venkatesh et al, 2012).

Table 10 Future Studies

Future Studies	Reference
Further study initiatives may investigate the impact of cultural differences on ethical attitudes and consumer confidence within the Metaverse. Considering the significant differences in norms of society and code of conduct, a deeper knowledge of these variations may lead to more effective worldwide marketing tactics for virtual worlds.	(Dwivedi et al, 2022, 2023; Rane et al., 2023)
Long-term investigations could shed light on how consumers' trust and ethical judgments change over time as users get habituated to Metaverse platforms and their	(Dwivedi et al, 2023; Giang Barrera & Shah, 2023, 2023; Rane et al.,

marketing strategies. In addition, as regulatory frameworks and metaverse ethics become more established, it may become easier to track changes in behavior among users.	2023b)
It would be beneficial to investigate how improved security and privacy features in Metaverse platforms affect trust and ethical choices. To track changes in user responses and acceptance rates, may require developing experimental designs that may differ these factors.	(Anshari et al., 2022; George et al, 2021; Shi et al., 2023; Wang et al., 2023)
Policymakers and marketers both may benefit greatly from investigating how newly passed laws affect ethical marketing practices in the Metaverse and how customers respond to them. This would also contribute to our understanding of how ethical norms and user trust are shaped by legal frameworks in emerging digital worlds.	(Anshari et al, 2019, 2022; Loke, 2020; Moor, 2005; Parlar, 2023; Wright et al, 2014)

5.3 Conclusion

The research conducted in this thesis provides significant insights into the role of performance expectancy and social influence on consumer expectations of ethical conduct in Metaverse marketing. The findings highlight the importance of performance expectancy, which significantly shapes consumer expectations. Consumers value the efficiency and effectiveness of technologies in virtual environments, reinforcing the need for Metaverse platforms to prioritize high-performance and user experiences.

However, the study reveals that social influence does not significantly impact consumer expectations in the Metaverse. This finding challenges conventional marketing theories that emphasize the role of peer pressure and societal norms in shaping consumer behavior. In the Metaverse, consumers appear to rely more on their personal evaluations and ethical considerations rather than the opinions and behaviors of their peers.

This thesis primarily analyzes the interplay between performance expectancy, social influence, and ethical marketing practices in the Metaverse. It offers actionable insights that can guide future research and practical applications, ultimately contributing to developing more ethical and effective Metaverse marketing strategies. The findings emphasize the need for ongoing research to explore the complex rela-

tionships that shape consumer expectations and the continuous evolution of ethical standards in emerging digital worlds.

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APPENDICES

APPENDIX 1

Consumer Expectations (Olson & Dover, 1979)

CE1	The brands must ensure ethical conduct in the metaverse and follow the regulatory policies regarding conduct as the area develops.
CE2	Transparency plays a crucial role in alleviating worries about data privacy.
CE3	Users should also be provided with transparent guarantees that their data will not be sold to third parties.
CE4	Businesses must provide users with control over their personal data, such as by offering an opt-out option for data collection.
CE5	There must be a balance between the utilization of user data and the restriction of data privacy concerns.

Performance Expectancy (venkatesh et al., 2003 and Im et al., 2011)

PE1	I would find the Metaverse Platform useful in my daily life
PE2	Using Metaverse platforms helps me to accomplish more quickly

PE3	Using the Metaverse platform increases my Productivity

Social Influence (Venkatesh et al., 2003 and Im et al., 2011, Lee & Kim, H.2022)

SI1	People who influence my behavior think that I should use the Metaverse platform
SI2	People who are important to me think that I should use the Metaverse platform
SI3	People whose opinions I value prefer that I use the Metaverse platform