

체험형 마케팅 및 고객관계 관리를 위한 메타버스 플랫폼 도입 효과 분석

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Adoption of Metaverse Platform for Experiential Marketing & Customer Relationship Management

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[요 약]

본 연구의 목적은 메타버스 적용에 대한 고객들의 전반적인 태도에 영향을 미치는 요인을 분석하는 것으로 브랜드 이미지, 인지된 가상 서비스, 인지된 감정, 경험, 맞춤형, 사회적 가치, 및 통합적 커뮤니케이션 요인들이 전반적인 태도에 유의한 영향을 미치는 지를 분석했다. 본 연구는 리서치 회사의 도움을 받아 온라인 설문조사를 실시하였다. 분석방법으로, 요인분석과 회귀분석을 적용하여 가설을 검증했고, 연구의 결과로, 브랜드 이미지, 인지된 가상 서비스, 인지된 감정, 경험, 맞춤형, 사회적 가치, 및 통합적 커뮤니케이션 요인들이 전반적인 태도에 유의한 영향을 미치며, 효과의 크기는 통합적 커뮤니케이션 요인, 브랜드 이미지, 인지된 가상 서비스 및 사회적 가치 순으로 나타났다. 본 연구는 고객이 가상세계에서 소비자 행동에 있어 메타버스와 같은 첨단 기술의 적용을 어떻게 인지하는 지에 대한 연구로, 경험적 마케팅과 고객관계 관리에 시사점을 제시하고, 메타버스의 적용 관련 어떤 측면을 촉진하고 규제해야 하는지에 대한 정책적 함의를 제공한다.

[Abstract]

This study investigated customers perceptions of factors that affect the overall attitude toward application of the metaverse. In particular, this study explored the following: i) how factors including brand image, perceived virtual service, perceived emotion, perceived experience, customization, social value, and interactive communication affect the overall attitude toward the metaverse application and ii) how attitude affects intention to use the metaverse and customer satisfaction. An online survey was conducted with the assistance of a well-known research firm. This study applied factor and regression analysis. The study found that the effects of perceived brand image, virtual service, emotional value, experience, customization, social value, and interactive communication on overall attitude toward application of the metaverse were significant. Effects of the overall attitude on intention to use and customer satisfaction were significant. The results outline the managerial and policy implications, implications on experiential marketing, and how customers perceive application of advanced technology, particularly metaverse, on their consumption behavior in the virtual world. Metaverse application allows customers to interact with brands and products by providing better information and interactive services. The results highlight the policy implications, that is, which aspects should be promoted and regulated by preparing better policies.

색인어 : 메타버스, 체험형 마케팅, 고객관계 관리**Keywords** : Metaverse, Experiential Marketing, Customer Relationship Management<http://dx.doi.org/10.9728/dcs.2023.24.7.1453>

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I. Introduction

Metaverse has been applied in various fields after being introduced by “Snow Crash” [1], the science fiction novel. Metaverse is a compound word of meta and the universe, which signifies virtuality and transcendence and is a more evolved term than VR [2]. According to [3], the metaverse, in today’s terms, is the realm of computer-generated, networked extended reality, or extended reality, an acronym that embraces all aspects of computer-altered reality including augmented reality, mixed reality, and virtual reality. [4] addressed that metaverse has been deemed as a hypothetical next-generation Internet and aims to create a shared virtual space that connects all virtual worlds via the Internet, where users are represented as digital avatars to communicate and collaborate as if they are in the physical world. A previous study [3] also addressed that early 2020s technological advances and societal transformations brought about by the COVID-19 pandemic have pushed the development of the metaverse to the forefront, promoting predictions that the metaverse is “the future of the Internet.” According to [5], the metaverse presupposes a very wide range of new technologies, is connected to the internet, is a social form and provides an immersive experience through augmented reality. A previous study [6] investigated that metaverse blends the physical and virtual worlds, revolutionizing how consumers and organizations facilitate the co-creation of transformational experiences and values.

Metaverse has been rapidly adopted in private and public sectors particularly, after COVID-19 pandemic. A study by [6] analyzed the early applications of metaverse in hospitality and tourism as well as promoted future solutions for hospitality and tourism management and marketing by addressing value co-creation and technology-enhanced experience. Different types of Metaverse are widely applied in the business field, such as Gucci’s fashion show, Hyundai’s test drive, University’s commencement, particularly during COVID19 pandemic. A study by [7] addressed that in today’s global economy, advanced technologies such as augmented reality and virtual reality plays an important role for the fashion retail industry and analyzed role of new drivers and consumer acceptance of technologies by applying The Technology

Acceptance Model [8].

Previous research rarely examined application and the adoption of the metaverse in experiential marketing that helps enhance better relationships with customers. The purpose of this paper is to explore how customers perceive advanced technology for factors that affect overall attitude toward application of metaverse. Therefore, customer behavior expects to be changed by adopting digitally driven technologies in the era of the 4th industrial revolution. In particular, this study examined how factors including perceived brand image, perceived virtual service, perceived emotion, perceived experience, customization, social value, and interactive marketing communication affect overall attitude toward application of metaverse and how overall attitude affects intention to use metaverse for products and services and customer satisfaction.

II. Literature Review

2-1 Development of Advanced Immersive Technology & Metaverse

A study by [9] addressed that advanced technology enables users to amalgamate information from various sources on their mobile devices, personalize their profile through applications and social networks, as well as interact dynamically with their context. A study by [10] stated that virtual worlds are persistent online computer-generated environments where multiple users in remote physical locations can interact in real time for the purposes of work or play and constitute a subset of virtual reality applications. According to [11], retailers started to use virtual reality and augmented reality applications at the end of 1990s and research into virtual reality during the 2000s looked at virtual worlds, which allowed navigation in virtual stores. A study by [12] investigated that virtual reality can track various responses, both at behavioral and neuro-physiological level and it is possible to measure the user’s behavior in real time during the virtual experience.

A study by [13] stated that metaverse was first defined as fictional about 20 years ago and refers to a virtual universe where people feel entirely mentally engaged with augmented virtual reality devices today.

A study by [14] summarized that historically, metaverse was inspired by technological development up to its inception in the early 1990s by addressing different views about features, characteristics, and definitions. According to [15], the metaverse as a nirvana that merges reality and virtuality, has become under the spotlight after the social media giant Facebook announced its rebranding ambition with its new name. A study by [16] stated that the metaverse as a complex concept, is the convergence of virtually-enhanced physical reality and physically persistent virtual space allowing users to experience it as either. A study by [10] addressed that an integrated network of 3D virtual worlds or metaverse constitutes a compelling alternative realm for human sociocultural interaction including features that are considered central components including realism (or immersive realism), ubiquity, interoperability, and scalability. A study by [17] examined that the development of the metaverse has been made possible by technologies such as artificial intelligence, Internet of things, augmented reality, virtual reality, 3D modeling, and space and edge computers and users' cognition, emotions, and behaviors can be influenced by key technologies that enable multiple metaverses. A study by [18] examined that the metaverse is a multi-user digital environment that uses augmented reality with virtual reality, a post-reality universe.

2-2 Application of Metaverse

A study by [4] examined that metaverse aims to create a shared virtual space that connects all virtual worlds via the Internet, where users, represented as digital avatars, can communicate and collaborate as if they are in the physical world. A study by [19] addressed that organizations such as firms and the government have launched a metaverse of the existing products or have created new services around this immersive experience. A previous study by [20] also examined that shopping in a virtual store with the metaverse can be more vivid than a website with experiences to create social value in various contexts and aims to take a big bite of the joint consumption market rather than 2D internet environment. A study by [21] addressed that the metaverse does matter since it becomes the gateway to most digital experiences, a key component of all physical ones, and

the next great labor platform and will require countless new technologies, protocols, companies, innovations, and discoveries to work. A study by [22] addressed that the metaverse is not a replacement of the aforementioned, but the extension of them to a ubiquitous, persistent, and immersive digital layer adding to our physical world. A study by [22] also stated that retail is already entering the metaverse. In practice, the metaverse applied in various occasions including fashion (e.g., Gucci), university commencement, concerts, public sector (e.g., Seoul city hall), industrial companies (e.g., Hyundai car), education [23], etc. a study by [24] stated that Tommy Hilfiger joined the Metaverse Fashion Week conversation with a pop-up virtual retail space and visited avatars in the real world that help enhance brands with diverse possible offers.

2-3 Classification of Metaverse

According to [16], metaverse is classified into four types including virtual world, mirror worlds, augmented reality, and life-logging. A study by [16] examined that i) a key component of the virtual worlds is one's avatar or character and the users' personification in the virtual world such as Second life, personal webpages; ii) mirror worlds are informationally-enhanced virtual models or reflections of the physical world such as Google earth; iii) in augmented reality, metaverse technologies enhance the external physical world for the individual; and iv) in lifelogging, augmentation technologies record and report the intimate states and life histories of objects and users. A study by [25] discussed that the Metaverse is the post reality universe, a perpetual and persistent multiuser environment merging physical reality with digital virtuality and is based on the convergence of technologies that enable multisensory interactions with virtual environments, digital objects and people such as virtual reality and augmented reality.

2-4 Experiential Marketing in Virtual World

A previous study by [26] contrasted traditional marketing with a new approach to marketing called experiential marketing and provided a strategic framework for experiential marketing. A previous study by [27] addressed that consumers

unquestionably desire experiences, and experiences have emerged as the next step in what we call the progression of economic value. According to [26], experiential marketers view consumers as rational and emotional human beings who are concerned with achieving pleasurable experiences, while traditional marketing views consumers as rational decision-makers who care about functional features and benefits. A previous study by [28] addressed that providing customers with unique and memorable experiences to establish a positive customer – brand relationship has become one of the key challenges for brand managers, therefore, approaches to experiential marketing that appeal to all senses have increasingly gained attention. A previous study by [29] conceptualized the experience concept in consumer and marketing research by classifying product experience, shopping and service experience, and consumption experience and it can occur directly and indirectly by exposure to advertising, marketing communications, including Web sites. A previous study by [30] addressed that the notion of experience marketing has been accelerated in the recent past since customers are increasingly focusing on emotions and experience more than the functional features of products and services and it has been driven by technological developments such as virtual reality. According to [10], virtual worlds are persistent online computer-mediated environments where multiple users in remote physical locations can interact in real time for purposes of work or play and constitute a subset of virtual reality applications. A previous study by [31] investigated how we experience immersive virtual environments by addressing the concept of presence and sense of being applied to a virtual reality. A previous study by [11] explored that marketing scholars and practitioners are showing increasing interest in extended reality technologies, such as virtual reality, augmented reality, and mixed reality as very promising technological tools for producing satisfactory consumer experiences that mirror those experienced in physical stores.

III. Hypotheses Development

This study proposed the following effects on overall attitude (Figure 1).

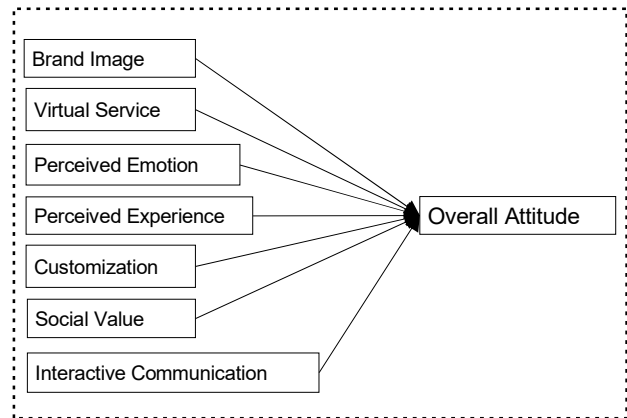


Fig. 1. Effects of proposed factors on overall attitude

3-1 Effects of Perceived Brand Image on Overall Attitude

A previous study by [32] addressed that the metaverse connects the physical and digital worlds to improve the consumer experience, while little is known how consumers respond to branded virtual worlds in real life, therefore, the study investigated the influence of metaverse experiential value on consumer’s brand perception and behavioral responses in the virtual and real world. A previous study by [33] investigated that various factors contribute to a hyper-connected digital universe, called metaverse, bearing the promise to evolve into a seamlessly interconnected space of virtual realities that will fundamentally change consumer behavior, brand choice, and firms’ transactions. This study posits that information and contents presented in the virtual worlds by metaverse helps increase brand image and quality of brand image might be increased if it is presented in the metaverse. Based on the consideration, this study hypothesized the effect of perceived city brand value on overall attitude.

H1: Perceived brand image affects overall attitude.

3-2 Effects of Virtual Service on Attitude

A previous study by [34] addressed that metaverse represents an idea of a hypothetical parallel virtual world that incarnate ways of living and working in virtual cities and discussed the emerging products and services of the metaverse. According to [35], experiential marketing provides value to a product or service as a whole by touching the side of the consumer’s experience when consuming a product or

using a company's services. A study by [33] addressed that the potential of the metaverse is being accelerated by the increasing tendency of consumers engaging and transacting in virtual spaces. A study by [36] addressed that immersion occurs when the virtual environment perceptually envelopes an individual such that the individual perceives him- or herself to be interacting within that virtual environment rather than within his or her physical surroundings, is an important part of the process. This study posits that by using metaverse, customers can get better services and virtual worlds by metaverse helps businesses promote products and services to make better relationships with customers. Based on the consideration, this study hypothesized the effect of perceived city brand value on overall attitude.

H2: Perceived virtual service affects overall attitude.

3-3 Effects of Perceived Emotion on Attitude

According to [10], realism in the metaverse is sought in the service of a user's psychological and emotional engagement within the environment. A study by [36] investigated the effects of possible actions and self-location of virtual reality experiences on perceived enjoyments, affecting attitude changes and intentions. A study by [38] addressed that affective computing has emerged as an important field of study in the development of systems that can automatically recognize, model and express emotions. A study by [19] also investigated that metaverse could enable marketers to connect with consumers in many new ways including capturing emotions. A previous study by [39] analyzed the metaverse as a virtual reality system created by affective and aesthetic computing and its digital morphology. This study posits that use of virtual worlds provided by metaverse makes customers feel positive emotional feelings, gives pleasure and entertainment due to reality and use of avatar. Based on the consideration, this study hypothesized the effect of perceived emotional value on overall attitude.

H3: Perceived emotional value affects overall attitude.

3-4 Effects of Perceived Experience on Attitude

A study by [29] conceptualized brand experience as subjective, internal consumer responses including sensation, feelings, and cognitions, and behavioral responses evoked by brand-related stimuli that are part of a brand's design and identity, packaging, communications, and environments. A study by [26] classified different types of experiences that marketers can create for customers including sensory experiences, affective experiences, creative cognitive experiences, physical experiences, behaviors and lifestyle, and social identity experiences. A study by [40] stated that experience constitutes a renowned notion with multiple meanings inherent and the integration of information and communication technologies has particularly benefited the facilitation of experience. A study by [11] addressed that with the advent of more sophisticated technologies that enable high-fidelity reproduction of environments, objects, and persons, e-retailers see extended reality technologies as very promising technological tools, enabling them to produce satisfactory consumer experiences. A study by [41] explored that metaverse encompasses many aspects of our current future existence with the aim of enhancing our connectivity and the quality of shared experiences. Based on the consideration, this study hypothesized the effect of perceived experience on overall attitude.

H4: Perceived experience affects overall attitude.

3-5 Effects of Customization on Attitude

According to [10], a virtual environment is perceived as more realistic based on the degree to which it transports a user into that environment and on the transparency of the boundary between the user's physical actions and those of his or her avatar. [16] categorized characteristics of the metaverse and intimate technologies, as one of characteristics, are focused on the identity and actions of the individual or object in the metaverse context, either through the use of an avatar/digital profile or through direct appearance as an actor in the system. A study by [42] included people/avatars as one of features of collaboration metaverse by addressing characteristics such as representation, presence, and immersion. This

study posits that by using metaverse, customers can customize services based on preferences and use of avatars will help interact with people or objects with reality. According to [43], the common attributes of the metaverse appear to be the continuity of identity and objects, a shared environment, the use of avatars (or embodied self), etc. Based on the consideration, this study hypothesized the effect of perceived customized service on attitude.

H5: Perceived customized service affects overall attitude.

3-6 Effects of Perceived Social Value on Attitude

According to [19], an important question about the value of the metaverse is whether there is new value for society in the metaverse environment using social life such as Second life, VRChat, Zepeto, etc. and the metaverse can help solve discrimination and social inequalities. A study by [16] addressed that virtual worlds increasingly augment the economic and social life of physical world communities. A study by [19] investigated that the metaverse provides new value for society in the virtual environment using social life. A study by [36] investigated that high behavioral realism agent is more behavioral realistic and higher in social presence. This study posits that by using application of metaverse services, customers help build social networks and enhance relationships. Using virtual worlds by metaverse makes customers feel that they are person who follows recent trends. Based on the consideration, this study hypothesized the effect of perceived social value on attitude.

H7: Perceived social value affects overall attitude.

3-7 Effects of Interactive Marketing Communication on Attitude

According to [26], experiences or strategic experiential modules are implemented through so-called experience providers such as communication, visual and verbal identity, product presence, electronic media, etc. A study by [37] examined that technologies incorporating a variety of virtual reality tools may play critical roles in marketing communications. A study by [43] addressed that the

common attributes of the metaverse appear to be the continuity of identity and objects, a shared environment, interoperability, and a user experience that is interactive, immersive, and social. This study posits that metaverse provides interactive communication tools to interact with customers. This study also addressed that computer-mediated communication and application of advanced technologies such as virtual reality, augmented reality, metaverse, etc. help improve the degree of interactivity to enhance communication with customers, while there are concerns about privacy and security issues. A study by [44] also investigated that metaverse changes the way we consume and communicate which is crucial for businesses to understand how their consumers are engaging with their offerings. Based on the consideration, this study hypothesized the effect of perceived interactive marketing communication on attitude.

H8: Perceived interactive marketing communication affects overall attitude.

3-8 Effects of Attitude on Intention to Use and Customer Satisfaction

According to [45], a person's attitude toward any object is a function of his beliefs about the object and the implicit evaluative responses associated with those beliefs based on the theory. A study by [45] also defined intention as a person's location on a subjective probability dimension involving a relation between himself and some action, therefore, a behavioral intention refers to a person's subjective probability that he will perform some behavior. A previous study by [46] investigated that consumers' adoption intention toward augmented reality-enhanced virtual try-on technology by examining the effects of consumers' evaluations of technology attributes on their immersive experiences, perceived value, and adoption intention based on the stimulus-organism-response framework that are mentioned by previous studies [47],[48]. A study by [49] investigated that satisfaction can draw both on affective experience and cognitive comparison and is seen as a judgement that depends on cognitive frames of reference. Based on the consideration, this study hypothesized the effect of overall attitude on intention

to use metaverse for the product or service decision and customer satisfaction.

H9: Overall attitude affects intention to use metaverse.

H10: Overall attitude affects customer satisfaction.

IV. Methodology

This study conducted an online survey with the assistance of a well-known research firm. The questionnaire consists of warm up, major questions, and demographic questions. The survey begins with the description of metaverse and applications on products and services that customers are often exposed to in the real world environment. Major questions include questionnaire items based on proposed factors including brand image, virtual service, experience, emotion, customization, social value, interactive marketing communication, overall attitude, intention to use metaverse, and customer satisfaction. The study will apply 5-point Likert scales for major proposed items. This study applied stratified sampling by considering demographics such as gender, age group, education, etc. The survey was collected in S. Korea and distributed to customers by explaining application of metaverse with business examples. 900 respondents answered the survey. The survey was prepared in English and translated to Korean. Back translation was applied to match the reliability of different versions. The survey was collected anonymously, confidentially, and voluntarily with agreement. This study will apply factor analysis, ANOVA, and multiple regression analysis to test main hypotheses. This study also conducted Cronbach alpha to check reliability. The results of Cronbach alpha include the following: 0.860 for brand image, 0.843 for virtual service, 0.838 for perceived emotion, 0.837 for perceived experience, 0.797 for customization, 0.830 for social value, and 0.853 for interactive communication. Table 1 summarized demographics of respondents.

Table 1. Demographics of respondents

		#	%
Gender	Male	449	49.9
	Female	451	50.1
Age	20–29 years old	203	22.6
	30–39 years old	211	23.4
	40–49 years old	235	26.1
	50–59 years old	251	27.9
Education	High school	166	18.4
	In College	85	9.4
	Bachelor's Degree	573	63.8
	Graduate Degree	72	9.0
Annual Income	Below 2,000,000 won	103	11.4
	Between 2,000,000–10,000,000 won	301	33.5
	Between 10,000,000–50,000,000 won	171	19.0
	Between 50,000,000–200,000,000 won	227	25.2

V. Data Analysis

This study conducted factor analysis. Scale items were extracted by the constructs by applying factor analysis. Principal component analysis was applied as the method for extraction with maximum iterations for convergence and factors' eigenvalue was greater than 1 are extracted. VARIMAX with Kaiser Normalization was applied as the rotation method with maximum iterations for convergence. Table 2 summarized component matrix including factor loadings. Questionnaire items applied in this study as follows: i) for brand image, items include how customers perceive that information and contents presented in the virtual environment by metaverse helps increase brand image, quality of brand image might be increased as presented in the metavesre, and brand image by metaverse helps foster value; ii) for virtual service, items includes how customers perceive that application of metaverse allow customers to get better services, whether virtual environment by metaverse can provide opportunities to engage with customers and help promote products and services to make better relationships with customers; iii) for perceived emotion, items include how customers perceive that use of virtual worlds by metaverse makes customers feel fun and entertained, provides pleasure, and friendliness; iv) for perceived experience, items

include how customers perceive that use of virtual worlds by metaverse provides customers with memorable experiences, enhances experiences using feeling, hearing sight, and touching, and presents customers with reality; v) for customization, items include how customers perceive that use of virtual worlds by metaverse can customize my pages based on preferences and customized services by using avatars with personal preferences; vi) for social value, items include how customer perceive that use of virtual worlds by metaverse makes them feel a person who follows social trends and helps build social networks and enhance relationships; and vii) for interactive marketing communication, items include how customer perceive that use of virtual worlds by metaverse help build brands, products, and service competitiveness and promotion.

Table 2. Component matrix for brand image, virtual service, emotional value, experience, customization, social value, & cultural value

	Component						
	1	2	3	4	5	6	7
BI3	.90						
BI1	.89						
BI2	.87						
VS3		.88					
VS2		.87					
VS1		.86					
PE2			.88				
PE3			.87				
PE1			.86				
PX2				.89			
PX3				.89			
PS1				.82			
CS1					.91		
CS2					.90		
SV1						.88	
SV3						.87	
SV2						.84	
IC2							.89
IC1							.88
IC3							.87

*BI: Brand Image; VS: Virtual Service; PE: Perceived Emotion; PX: Perceived Experience; CS: Customization; SV: Social Value; IC: Interactive Communication

This study conducted multiple regression analysis to test hypotheses. Factor scores were applied for multiple regression analysis. This study applied brand image, virtual service, perceived emotion, perceived experience, customization, economic value, social value, and interactive communication as independent variables and overall attitude as a dependent variable. The results of ANOVA showed that the overall model

is significant with $F = 306.838$ at 0.01% and r -square = 0.775. As shown in Table 3, the results of this study found that the effects of brand image, virtual service, perceived emotion, experience, social value, and interactive communication showed significance at alpha 1%, while effects of customization on overall attitude showed significance at alpha 5%. Therefore, H1, 2, 3, 4, 5, 7, and 8 were accepted. Among the significant factors, the effect size was greater with interactive communication on overall attitude than other effects followed by brand image, virtual service, social value, experience, perceived emotion, and customization.

Table 3. Effects of proposed factors on overall attitude

Independent Variables => Dependent Variables	Standardized Coefficient (t-value/sig)
Brand Image => Overall Attitude	.155 (5.463***)
Virtual Service => Overall Attitude	.138 (4.040***)
Perceived Emotion => Overall Attitude	.088 (2.713***)
Perceived Experience => Overall Attitude	.100 (3.183***)
Customization => Overall Attitude	.078 (2.427**)
Social Value => Overall Attitude	.119 (3.424***)
Interactive Marketing Communication => Overall Attitude	.241 (7.314***)

*** p < 0.01, ** p < 0.05 denotes statistical significance

This study also conducted simple regression analyses to test the effect of overall attitude on intention to use metaverse application for public sector and citizen satisfaction. The results of ANOVA showed that overall model is significant with $F = 1156.479$ at 0.01% and r -square = 0.563 for the effect of overall attitude on intention to use of metaverse application, while the results of ANOVA showed that overall model is significant with $F = 1966.971$ at 0.01% and r -square = 0.687 for the effect of overall attitude on customer satisfaction. As shown in Table 4, the effect size of overall attitude on intention to use was 0.750, while the effect size of overall attitude on customer satisfaction was 0.829. Hypotheses 9 and 10 were accepted.

Table 4. Effects on intention & customer satisfaction

Independent Variables => Dependent Variables	Standardized Coefficient (t-value/sig)
Overall Attitude => Intention to Use	.750 (34.007***)
Overall Attitude => Customer Satisfaction	.829 (44.351***)

*** p < 0.01 denotes statistical significance

VI. Conclusion

The purpose of this paper is to investigate how customers perceive factors that affect overall attitude toward application of metaverse. This study proposed effects of factors including perceived brand image, perceived virtual service, perceived emotion, perceived experience, customization, social value, and interactive communication on overall attitude toward application of metaverse. This study also examined effects of overall attitude on intention to use metaverse for product and service decision making and customer satisfaction. The results of this study found that effects of perceived brand image, virtual service, emotional value, experience, customization, social value, and interactive communication on overall attitude toward application of metaverse showed significance. The results of this study also found that the effect size on overall attitudes showed greater effect with interactive communication, brand image, virtual service, and social value than other effects on overall attitude. The results of this study found that application of metaverse as an interactive marketing communication tool significantly affects overall attitude with higher effect size. Therefore, the results indicated that use of metaverse helps enhance communication and interact with customers for product promotion, competitive advantage, etc. The results support a previous study by [44] stating that metaverse changes the way we consume and communicate and how consumers are engaging with business offerings. The findings of this study also implied that application of metaverse helps build brand image and provides opportunities to engage with customers in virtual worlds by making better relationships. By using metaverse, customers also perceive that they could get better services. Further, customers perceived that application of virtual worlds by metaverse makes a person who follows recent trends and helps build social networks and values. This study also found that customers perceive application of virtual worlds by metaverse with memorable experiences using feeling, hearing, sight, and touching brands and products with reality. The results of this study increased attitude on products and services positively affect intention to use metaverse for purchase decision and customer satisfaction.

This study provides managerial implications. The

results provide managerial implication on experiential marketing how customers perceive application of advanced technology, particularly metaverse in their consumer behavior in virtual worlds. Therefore, application of metaverse plays an important role to engage with customers in a virtual environment by providing reality and helps build better relationships with customers. The use of metaverse also allows customers to interact with brands and products by providing better information and interactive services, while there are concerns on security and privacy issues. The results of this study provides implications which aspects should be more focused to enhance better customer experiences in virtual worlds by adopting metaverse. A study by [50] also addressed that interactivity in advanced technology such as virtual reality is not merely the ability to navigate the virtual world, while it is the power of the user to modify the environment. The results of this study also provide policy implications which aspects should be promoted and regulated by preparing better policy.

This study has limitations and provides implications on future research. Sample size could be increased in future research. Applications of metaverse in different product and service categories could be researched. Future research might consider the application of metaverse in cross-cultural research. Future research might also consider different effects based on demographics. Concerns related to adoption of metaverse should be also discussed.

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