Application of AI in Marketing Strategy: Insights from Millennials and Generation Z

Yooncheong CHO [1]

Abstract

Purpose: The purpose of this study is to explore the perceptions of millennials and Generation Z regarding AI applications in marketing, an area that has been rarely explored in previous researches. This study formulated research questions how millennials and Generation Z perceive the impact of brand image, AI-assistant customer service, affective factor, immersive experience, cognitive factor social factor and competitiveness of products and brands on overall attitude through the lens of AI applications in marketing. Additionally, this study also explored the influence of overall attitudes on satisfaction, intention to use, and loyalty towards AI applications. **Research design, data and methodology:** To gather data, this study employed an online survey conducted in collaboration with a reputable research organization. This study utilized factor analysis, ANOVA, and regression analysis for data analysis. **Results:** The findings revealed that the impact of brand image, AI-assistant customer service, and competitiveness on attitude demonstrated significance in both millennials and generation Z cohorts. The study identified that cognitive and social factors significantly influenced attitudes among millennials, whereas affective and immersive experiences showed significance in influencing attitudes among Generation Z. **Conclusions:** The findings offer valuable managerial implications, shedding light on the application of AI in marketing with distinct perspectives between millennials and Generation Z.

Keywords: AI-assistant Application, Metaverse, Marketing Strategy, Millennials, Generation Z

JEL Classification Code: M30, M31, M20, M10

1. Introduction

The landscape of customer decision-making and behavior is undergoing a profound transformation due to the widespread adoption of advanced technologies. Specifically, the rapid integration of AI into marketing is re-shaping the way we purchase products and engage with services. The evolution of AI applications, alongside continuous technological advancements, is providing convenience and a myriad of experiences to customers, especially millennials and Generation Z, who are often referred to as the internet generations.

Haleem et al. (2022) stressed that AI has diverse potential in the marketing field, as a result, it will become an integral part of every commercial entity across the globe (p.119). According to Nalini et al. (2021), AI marketing leverages artificial intelligence technologies to make automated decisions by collecting and analyzing data that enable effective communication with customers and facilitates efficient serve delivery. Within the realm

of AI applications, the metaverse has found practical applications in product and branding strategies, encompassing immersive experiences and AI-assistant services, incorporating features such as avatar and voice services. Customers have embraced technology-enabled applications through the utilization of lifelogging services like Social Networking Services (SNSs), mirror worlds such as google earth, and virtual worlds like online games and platforms like Zepeto (Smart et al., 2007). In the most recent developments, the metaverse which seamlessly blends the physical and virtual realms, has revolutionized the way consumers and organizations collaboratively create transformational experiences and values (Buhalis, et al. 2022). Dwivedi et al. (2022) addressed the potential benefits of the metaverse for digital marketing and advertising, branding, services, value creation, and consumer well-being highlighting these areas as key considerations for future research agendas.

As technologies continue to evolve and businesses undergo digital transformation, AI, particularly within the metaverse in marketing, plays a pivotal role in enhancing applications, transforming business strategies, and influencing customer behavior. Barrera and Shah (2023) focused on marketing within the metaverse - a hyper-connected digital universe - with the potential to fundamentally alter the dynamics of transactions and interactions among consumers, brands, and firms within a virtual reality space. Ramadan (2023) explored the digital shift, specifically delving into the concept of the metaverse as a virtual parallel world that replicates people's lives and transposes them into the virtual realm. Lu and Mintz (2023) addressed how marketers can utilize the metaverse to distinguish firms by applying 4P strategies and summarized potential challenges that firms may encounter in the process of conducting metaverse marketing. Gursoy et al. (2023) conducted research on the adoption of the metaverse, highlighting significant implications and challenges to stakeholders. Golf-Papez et al. (2022) investigated the metaverse, recognizing it as the next frontier for strategic opportunities that necessitate managerial actions for competitive succeed.

The purpose of this study is to investigate how millennials and generation Z perceive AI-assistant applications in marketing, addressing a gap in the existing literature. Specifically, this study devolved into how customers perceive AI-assistant applications within the metaverse concerning product and brand strategies. This study formulated the following research questions, examining the application of AI-assistance from the perspectives of millennials and generation Z: i) how does brand image affect overall attitudes, ii) how does AI-assistant customer service affect overall attitudes; iii) how does affective factor affect overall attitudes; iv) how does immersive experience affect overall attitudes; v)

how does cognitive factor affect overall attitudes; vi) how does social factor affect overall attitudes; vii) how does competitiveness affect overall attitudes, and viii) how does overall attitude affect satisfaction, intention to use, and loyalty.

2. Literature Review

2.1. AI in Marketing

Mariani et al. (2022) conducted an investigation revealing the exponential growth in the adoption of AI by marketing managers and consumers and identified clusters related to decision-making and cognitive processes, social media, technology acceptance, and other relevant areas. Nalbant and Aydin (2023) explored that the impact that AI-powered technologies have had on digital marketing and branding, consequently, the study suggests that firms should broaden their marketing awareness in virtual environments. Huang and Rust (2020) analyzed a strategic framework for AI in marketing categorizing it into mechanical AI for automating repetitive marketing functions and activities, thinking AI for processing data, and feeling AI for analyzing interactions and human emotions. Nalini et al. (2021) highlighted that AI is frequently employed in marketing endeavors and AI marketing, in particular, equips marketers with analytical tools to leverage data and customer profiles for optimal communication strategies.

Ledro et al. (2023) addressed the application of AI in customer relationship management, emphasizing the challenges and opportunities of successfully integrating AI into CRM for establishing and maintaining long-term relationships with customers. Esch (2021) explored how AI-enabled digital marketing is revolutionizing various aspects, including content creation, lead generation, and customer experience management, etc. Jabeen (2022) conducted research on the use of AI in marketing, highlighting that AI has become a crucial ally in marketing endeavors, leveraging available consumer data and data analysis. According to Simion and Popescu (2023), commonly employed AI applications in digital marketing encompass content personalization, marketing campaigns, customer experiences, and other related areas. As Mari and Algesheimer (2022) indicated, shopping behavior is facilitated by digital consumer technologies, with a particular emphasis on the role of AI in powering these advancements. Gao et al. (2023) conducted an investigation into the application of AI in advertising, particularly focusing on areas such as targeting, personalization, content creation, and advertising optimization. While acknowledging the positive aspects

of application AI in marketing, Gao et al. (2023) delved into the ethical concerns associated with the use of AI technologies, including issues like algorithmic bias, consumer privacy, and more.

Metaverse applications within the field of AI have not only gained considerable attention but have also witnessed rapid development. Nalbant and Aydin (2023) pointed out that the metaverse is expected to have a range of effects within the field of marketing. Efendioglu (2023) provided a definition of the metaverse as a virtual reality world wherein users can interact with each other and conduct transactions through the use of virtual reality and augmented reality technologies. Smart, Cascio, and Paffendorf (2007) investigated that metaverse consists of four areas including lifelogging services, virtual reality, mirror worlds, and augmented reality, while Efendioglu (2023) suggested four areas that consist the metaverse including technologies (i.e., virtual, augmented, and mixed reality), affordances (i.e., immersion, embodiment, presence, and identity construction), principles (i.e., interoperable, open, hardware agnostic, and network), and challenges (i.e., physical well-being, psychology, ethics, and privacy).

The application of the metavere in the field of marketing has gained attention in previous studies. The study by Gursoy et al. (2023) explores the metaverse as a tool to revolutionize service marketing and management and proposes a conceptual framework to elucidate the impacts of the metaverse on the creation and delivery of service experiences, as well as co-creation of the purchase experience process. Hennig-Thurau and Ognibeni (2022) have emphasized that the metaverse offers abundant opportunities for value creation.

3. Hypotheses Development

3.1. Effects of Brand Image on Overall Attitude

Haleem et al. (2022) researched that AI is changing the way brands and users interact and helps target customers by analyzing algorithm. Dwivedi et al. (2022) examined that marketers will find significant challenges and opportunities by applying metaverse such as the potential of consumer interaction with brands. Tan et al. (2023) investigated that brands actively adopt the virtual space for future business opportunities using the metaverse. Chrimes and Boardman (2023) addressed that brands have applied to establish a presence in the metaverse to create brand experiences. Metaverse is applied for brands as marketing and promotional tools by enhancing shopping experiences, leveraging vast audience reach, and managing customer interactions (Wolfe, 2023). Eyada (2023) researched that metaverse marketing and

real-life marketing is applied as virtual marketing strategies for many brands such as luxury fashion brands, carbonated beverages, digital products, etc. Dwivedi and Hughes (2023) addressed that the metaverse will empower brands by delivering offerings in the virtual world. According to Lee et al. (2023), brands can engage the rapidly expanding metaverse economy to build long-term customer relationships. This study hypothesized that application of metaverse will enhance perceived brand image. Building on these considerations, this study posits a hypothesis regarding the impact of brand image on overall attitude in both millennials and Generation Z contexts.

H1: The perceived brand image significantly influences overall attitude in both millennials and Generation Z cases.

3.2. Effects of AI-Assistant Customer Service on Attitude

Jones (2018) addressed that the Internet of Things promises to make relationships with technology rapidly and researched the role of voice-controlled virtual or artificial intelligence assistants such as providing information, utility and convenience to customers. Raval (2022) stated that an AI-assistant is a program and software agent that can interact with the user in natural language or with voice. Ramadan (2023) pointed out that a main attribute of virtual worlds, in particular metaverse, is the navigation of users through virtual hyper-realities by creating 3rd image called avatar. Grusoy et al. (2023) mentioned that avatar used in metaverse as the focal customer who are at the core of metaverse experiences with the service provider and other customers via participation helps enhance service experience and provides customized services through various channels. Kim et al. (2023) explored the role of avatars how to mediate users with the metaverse environment and addressed the term "avatar realism" based on the user-avatar relationship and the intention to use the avatar. This study proposes that customers within a metaverse environment engage with AI-assisted customer services, utilizing avatars and other chat services, to cultivate relationships with products and brands. Building on the premise, this study hypothesizes the impact of AI-assistant customer service on overall attitude in both millennials and Generation Z contexts.

H2: The perceived AI-assistant customer service significantly influences overall attitude in both millennials and Generation Z cases.

3.3. Effects of Affective Factor on Attitude

According to the conceptual model of metaverse proposed by Gursoy et al. (2023), one of experience offerings include hedonic benefits to customers when they engage with brands during the pre-consumption and consumption stage through the virtual world. Hennig-Thurau et al. (2023) investigated that emotion outcomes such as positive effect of interactants are critical for real-time multisensory social interactions in computer-mediated environments. Bhumika et al. (2023) researched the field of psychology with the help of emerging technologies and explored the relationship between metaverse and happiness that is the state of emotion characterized by various aspects. Dozio et al. (2022) addressed that virtual environments gain popularity in the era of metaverse by delivering emotional content. Menck et al. (2023) researched how emotions of metaverse users help create engagement and immersive experiences and found that the assessment of emotions in the metaverse has the potential to shape the development of metavers applications. This study postulates that customers engaging in the metaverse experience heightened positive emotional responses and derive enjoyment from products and brands. Building on the premise, this study hypothesizes the impact of an affective factor on overall attitude in both millennials and Generation Z contexts.

H3: The perceived affective factor significantly influences overall attitude in both millennials and Generation Z cases.

3.4. Effects of Immersive Experience on Attitude

One of the key factors provided by the metaverse application is the immersive experience in a virtual world, therefore, customers feel like the real world. Guadagno et al. (2007) addressed that individuals in an immersive virtual environment typically experience visual aspects of the virtual world. Ramadan (2023) addressed that "the experience" is an integral role of the metaverse's platforms. Bailenson et al. (2003) explored that behavioral scientists conducted digital immersive virtual environment technology by performing experiences. Grusoy et al. (2023) researched that the metaverse has significant impacts on creation and delivery of offerings to stakeholders. Chrimes and Boardman (2023) investigated that brands must rethink how to promote and market products in the era of digital revolution and offer more immersive experiences for customers. Eyada (2023) investigated that the metaverse allows brands to engage and experience with their consumers. Kim et al. (2023) addressed that using the avatar leads to a more captivating and immersive experience within virtual spaces. Golf-Papez et al. (2022) researched the meaning

of the metaverse and motivation to use synthetic customer experiences. Kim et al. (2023) explored that the presence of an avatar is a key component that distinguishes it from other digital platforms and enhances virtual experience in the metaverse. Building on the premise, this study hypothesizes the impact of immersive experience on overall attitude in both millennials and Generation Z contexts.

H4: The perceived immersive experience significantly influences overall attitude in both millennials and Generation Z cases.

3.5. Effects of Cognitive Factor on Attitude

According to the conceptual model of metaverse proposed by Gursoy et al. (2023), one of experience offerings include functional benefits to fulfill needs such as trying products before purchasing, making reservations and seeking digital substitutes from a utilitarian perspective. Dwivedi et al. (2022) addressed that the use of the metaverse can better facilitate the interaction between users and the environment by simulating emotional and cognitive experiences. Ajzen (1989) defined that *the cognitive category consists of responses that reflect perceptions of, and information about the attitude object* (p.243). Customers using metaverse can receive useful information and contents related to products and brands. In particular, millennials and generation Z might p erceive such effects differently. Building on the premise, this study hypothesizes the impact of cognitive factors on overall attitude in both millennials and Generation Z contexts.

H5: The perceived cognitive factor significantly influences overall attitude in both millennials and Generation Z cases.

3.6. Effects of Social Factor on Attitude

Hennig-Thurau and Ognibeni (2022) addressed that the true value of the metaverse is social dimension. Hennig-Thurau et al. (2023) also investigated the social nature of the metaverse and its ability to host real-time multisensory social interactions that allow many people to interact at the same time with multiple senses. Dwivedi et al. (2022) explored that the emergence of the metaverse presents an opportunity for how we socialize and interact with each other. Smart et al. (2007) addressed that metaverse technologies are intensely social, therefore, the development of these tools help build social relationships and identity. Barrera and Shah (2023) investigated socialization, connecting people, and social presence as part of emerging concepts and themes from the practitioners' views of the metaverse. By using metaverse for product and brand strategy, customers

build social networks and relationships and enhance interaction. Early adopters might feel keeping up with social trends by using metaverse applications. Building on the premise, this study hypothesizes the impact of social factors on overall attitude in both millennials and Generation Z contexts.

H6: The perceived social factor significantly influences overall attitude in both millennials and Generation Z cases.

3.7. Effects of Competitiveness Factor on Attitude

Barrera and Shah (2023) addressed consumer behavior as a focal research area related to marketing in the metaverse and proposed research questions such as how consumers respond to metaverse marketing offers, promotions, sales, etc. According to Lu and Mintz (2023), the metaverse offers marketers the greatest potential to engage with customers and develop competitive advantages. Dwivedi et al. (2022) suggested companies adopt metaverse environments as highly competitive approaches to detect changes in consumer preference. Building on the premise, this study hypothesizes the impact of competitiveness factor on overall attitude in both millennials and Generation Z contexts.

H7: The perceived competitive factor significantly influences overall attitude in both millennials and Generation Z cases.

3.8. Effects of Attitude on Intention to Use and Customer Satisfaction, Intention, & Loyalty

Ajzen (1989) developed the concept of attitudes and relation to behavior and defined that *an attitude is an individual's disposition to respond favorably or unfavorably to an object, person, institution, or event, or to any other discriminable aspect of the individual's world* (p.241). Altmann (2008) explored the three characteristics related to attitudes from the literature: a mental state, a value, and a predisposition to behavior or action. Customer satisfaction has been studied by previous researchers. Yi (1990) addressed that consumer satisfaction is an outcome resulting from the consumption experience and the importance of it has led to a proliferation of research over the past decades. Picón et al. (2014) examined previous research on loyalty and stated two perspectives of loyalty as behavioral and attitudinal. Yildiz (2023) examined metaverse by finding factors such as technological innovativeness and perceived attitude, and perceived usefulness on intention of continuous usage. Building on the premise, this study hypothesizes the impact of overall attitude on satisfaction,

intention to use, and loyalty in both millennials and Generation Z contexts.

H8: Overall attitude significantly influences customer satisfaction in both millennials and Generation Z cases.

H9: Overall attitude significantly influences intention to use in both millennials and Generation Z cases.

H10: Overall attitude significantly influences loyalty in both millennials and Generation Z cases.

4. Methodology

This study employed an online survey, conducted with the assistance of a reputable research agency. The survey initiated with warm-up questions, probing participants on their awareness and experiences with AI-assisted customer service, particularly, focusing on the application of metaverse in product or branding strategy. The survey was designed with key questions addressing perceptions of the proposed variables, along with demographic questions. The independent variables in this study encompass brand image, AI-assistant customer service, affective factor, immersive experience, cognitive factor, social factor, and competitiveness, while attitude serves as the dependent variable. Additionally, this study explores the effects of attitude, intention to use, and satisfaction on loyalty toward AI-assistant marketing strategy. The study applied 5-point Likert scales for major proposed items (1 – strongly disagree, 5 – strongly agree). A total of 534 responses were collected, comprising 330 responses from millennials and 204 from Generation Z. Murgai (2022) addressed that merits of metaverse marketing includes demographics particularly targeting Generation Z who are adults in their mid-20s as they are accustomed to virtual environments. Eyada (2023) investigated that generation Z and millennials are main target audiences as they spend more time in virtual worlds and participate in diverse types of metaverse such as games.

In the case of responses from millennials, 50.6% were male and 49.4% female. Educational backgrounds included 16.0% high-school graduates, 3.6% in college, 72.6% holding bachelor's degrees, and 7.8% holding graduate degrees. Regarding income distribution, 9.1% earned below 2,000,000 KRW, 30.8% earned between 2,000,000 – 5,000,000 KRW, 6.4% earned between 5,000,000 – 10,000,000 KRW, 1.2% earned between 10,000,000 – 20,000,000 KRW, 18.4% earned between 20,000,000 – 50,000,000 KRW, 23.3% earned between 50,000,000 – 100,000,000 KRW, 3.6% earned more than 100,000,000 KRW.

In the case of responses from Generation Z, the gender distribution was 50.5% male and 49.5% female. Educational backgrounds included 18.6% were high-

school graduates, 30.1% in college, 47.4% holding bachelor's degrees, and 3.4% holding graduate degrees. Regarding income distribution, 17.3% earned below 2,000,000 KRW, 24.5% earned between 2,000,000 – 5,000,000 KRW, 9.5% earned between 5,000,000 – 10,000,000 KRW, 3.7% earned between 10,000,000 – 20,000,000 KRW, 14.5% earned between 20,000,000 – 50,000,000 KRW, 5.9% earned income between 50,000,000 – 100,000,000 KRW, 1.5% earned more than 100,000,000 KRW.

In this study, age groups were initially categorized by generation to distinguish between millennials and Generation Z. Additionally, factors such as gender ratio, education level, and annual income were taken into account. The data collection was conducted in South Korea. Introduction of survey includes brief explanation of AI application in marketing, with a specific focus on how the metaverse to enhance product and brand awareness, familiarity, etc. It is important to note that the collected data is used solely for research purposes. This study applied factor analysis, ANOVA, and multiple regression analysis to test proposed hypotheses. This study tested reliability by checking Cronbach alpha. The results of Cronbach alphas in the case of millennials are summarized as follow: 0.859 for brand image, 0.843 for AI-assistant customer service, 0.857 for affective factor, 0.851 for immersive experience factor, 0.847 for cognitive factor, 0.855 for social, and 0.865 for competitiveness. Further, Cronbach alphas include 0.896 for attitude, 0.863 for satisfaction, 0.863 for intention to use, and 0.844 for loyalty in the case of millennials. The results of Cronbach alphas generation Z are summarized as follow: 0.863 for brand image, 0.862 for AI-assistant customer service, 0.855 for affective factor, 0.845 for immersive experience factor, 0.869 for cognitive factor, 0.868 for social, and 0.887 for competitiveness. Further, Cronbach alphas include 0.902 for attitude, 0.870 for satisfaction, 0.842 for intention to use, and 0.868 for loyalty in the case of Generation Z.

Table 1: Demographics of Respondents

		M (%)	Z (%)
Gender	Male	167 (50.6)	103 (50.5)
	Female	163 (49.4)	101 (49.5)
Age	20-24 years old	-	88 (43.1)
	25-29 years old	-	116 (56.9)
	30-34 years old	109 (33.0)	-
	35-39 years old	101 (30.6)	-
	40-44 years old	120 (36.4)	-
	Middle School	-	1
Education			(0.5)
	High School	53 (16.0)	38 (18.6)
	In College	12 (3.6)	61 (30.1)
	Bachelor's Degree	239 (72.6)	97 (47.4)
	Graduate Degree	26 (7.8)	7 (3.4)
	TOTAL	330	204

5. 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, questionnaire items applied in this study include how AI-based application helps enhance perceived quality of product, and brand value; ii) for IA-based customer service, questionnaire items applied in this study include how AI-assistants helps provide better services by enhancing communication and relationships with customers; iii) for affective factor, questionnaire items applied in this study include how AI-based application entertains customers, evoke friendly feeling, and provide joy and fun; iv) for immersive experience, questionnaire items applied in this study include how AI-based application provides memorable experience, feeling that experienced it in real world, and a sense of reality using avatars; v) for cognitive factor, questionnaire items applied in this study include how AI-based application provides useful product and brand related information or contents with better value, vi) for social factor, questionnaire items applied in this study include how AI-based application provides two-way communication with interactivity and reality to follow social trends and to build better relationships with customers; and vii) for competitiveness, questionnaire items applied in this study include how AI-based application helps improve the competitiveness of products and services and enhance integrated marketing communication.

Table 2: Component Matrix for Brand Image, AI-assistant Customer Service, Affective, Immersive Experience, Cognitive, Social, & Competitiveness (Millennial Case)

	Component						
	1	2	3	4	5	6	7
BI3	.89						
BI1	.86						

	Component						
BI2	.85						
AI2		.89					
AI1		.88					
AI3		.87					
AF2			.90				
AF3			.89				
AF1			.87				
IE3				.90			
IE2				.89			
IE1				.83			
CO1					.89		
CO2					.87		
CO3					.87		
SO3						.89	
SO1						.88	
SO2						.87	
CP2							.90
CP1							.88
CP3							.87

*BI: Brand Image; AI: AI-assistant Customer Service;
AF: Affective; IE: Immersive Experience;
CO: Cognitive; SO: Social; CP: Competitiveness

Table 3: Component Matrix for Brand Image, AI-assistant Customer Service, Affective, Immersive Experience, Cognitive, Social, & Competitiveness (Generation Z Case)

	Component						
	1	2	3	4	5	6	7
BI3	.91						
BI2	.89						
BI1	.88						
AI3		.90					
AI2		.86					
AI1		.85					
AF3			.86				
AF2			.85				
AF1			.85				
IE3				.89			
IE2				.88			
IE1				.80			
CO3					.87		
CO2					.87		
CO1					.86		
SO1						.89	
SO3						.85	
SO2						.81	
CP1							.88
CP2							.87
CP3							.85

*BI: Brand Image; AI: AI-assistant Customer Service;
AF: Affective; IE: Immersive Experience;
CO: Cognitive; SO: Social; CP: Competitiveness

This study conducted additional factor analyses for variables including attitude, intention to use, satisfaction, and loyalty for on AI-assistant service for products and brands. For attitude, questionnaire items applied in this study include how AI-assistant service helps form positive attitude toward products and brand image, and brand evaluation. For intention to use, questionnaire items applied in this study include intention to use AI-assistant service related to products and brands to get information and assistance for purchase decision making. For satisfaction, questionnaire items applied in this study include how AI-assistant service helps increase satisfaction level toward products and brands. For loyalty, questionnaire items applied in this study include how often customers are willing to purchase products and brands again and willing to recommend products and brands that are informed by AI-assistant service.

Table 4: Component Matrix for Attitude, Intention, Satisfaction, & Loyalty (Millennial Case)

	Component			
	1	2	3	4
AT2	.91			
AT3	.89			
AT1	.88			
IT2		.90		
IT1		.86		
SA2			.86	
SA1			.85	
LO2				.89
LO1				.88

*AT: Attitude; IT: Intention to Use; SA: Satisfaction;
LO: Loyalty

Table 5: Component Matrix for Attitude, Intention, Satisfaction, & Loyalty (Generation Z Case)

	Component			
	1	2	3	4
AT3	.92			
AT1	.81			
AT2	.90			
IT2		.92		
IT1		.91		
SA2			.93	
SA1			.92	
LO2				.93
LO1				.93

*AT: Attitude; IT: Intention to Use; SA: Satisfaction;
LO: Loyalty

This study conducted multiple regression analysis to test hypotheses. Factor scores were applied for multiple regression analysis. This study applied brand image, AI-assistants customer service, affective factor, immersive experience, cognitive factor, social factor, and competitiveness factor as independent variables and overall attitude as a dependent variable. The results of ANOVA showed that the overall model is significant with $F = 139.925$ at 0.01% and r-square = 0.814 in the case of millennials, while $F = 70.166$ at 0.01% and r-square = 0.784 in the case of Generation Z. As shown in Table 3, the results of this study found that the effects of

brand image, cognitive factor, social, and competitiveness factor showed significance at alpha 1%, while effects of AI- assistant customer service on overall attitude showed significance at alpha 10% in the case of millennials. In the case of Generation Z, the results found that the effects of brand image, immersive experience, and competitiveness factor showed significance at alpha 1%, while the effects of AI-assistant customer service and affective factor showed significance at alpha 1%. Therefore, H1, 2, 5, 6, and 7 were accepted in the case of millennials H1, 2, 3, 4, and 7 were accepted in the case of Generation Z. Among the significant factors, the effect size was greater with competitiveness factor on overall attitude than other effects followed by brand image, social factor, cognitive factor, and AI-assistants customer service factor in the case of millennials, while, the effect size was greater with immersive experience factor on overall attitude than other effects followed by competitiveness factor, brand image, AI-assistants customer service, and affective factor in the cate of Generation Z.

Table 6: Effects of Proposed Factors on Overall Attitude

Independent Variables => Dependent variable	Standardized Coefficient (t-value/sig)	Standardized Coefficient (t-value/sig)
	Millennials	Generation Z
Brand Image => Overall Attitude	.181(3.855***)	.189(3.570***)
AI-assistant Customer Service => Overall Attitude	.094(1.716*)	.133(1.798*)
Affective Factor => Overall Attitude	.059(1.057)	.123(1.792*)
Immersive Experience => Overall Attitude	.083 (1.572)	.213 (3.522***)
Cognitive Factor => Overall Attitude	.110 (2.054***)	.066 (.891)
Social Factor => Overall Attitude	.148 (2.704***)	.040 (.474)
Competitiveness => Overall Attitude	.274 (5.079***)	.196 (2.634***)

*** Significant at alpha 0.01, ** Significant at alpha 0.05,
* Sig at alpha 0.1

This study also conducted regression analyses to test the effect of overall attitude on intention to use AI application, satisfaction, and loyalty. The results of ANOVA indicated that overall model is significant with $F = 938.254$ at 0.01% and an R-square = 0.741 for the effect on satisfaction, $F = 521.729$ at 0.01% with an R-square = 0.614 for the effect on intention to use, $F = 520.184$ at 0.01% with an R-square = 0.613 for the effect on loyalty in the case of millennials. The results of ANOVA indicated that overall model is significant with $F = 434.148$ at 0.01% and an R-square = 0.682 for the effect on satisfaction, $F = 241.991$ at 0.01% with an R-square = 0.545 for the effect on intention to use, $F =$

269.636 at 0.01% with an R-square = 0.572 for the effect on loyalty in the case of Generation Z. As shown in Table 7, the effect size of overall attitude on intention to use was greater followed by effect of loyalty and satisfaction in both millennials and Generation Z contexts. H8, 9, and 10 were accepted in both millennials and Generation Z contexts.

Table 7: Effects on Satisfaction, Intention & Loyalty

Independent Variables => Dependent variable	Standardized Coefficient (t-value/sig)	Standardized Coefficient (t-value/sig)
	Millennials	Generation Z
Overall Attitude => Satisfaction	.236 (3.962***)	.200 (2.829***)
Overall Attitude => Intention to Use	.351 (6.558***)	.494 (8.595***)
Overall Attitude => Loyalty	.316 (4.833***)	.231 (3.367***)

*** Significant at alpha 0.01, ** Significant at alpha 0.05,
* Sig at alpha 0.1

6. Conclusion

This study delves into the application of AI-assistants in marketing strategies, examining the perspectives of millennials and generation Z. Specifically, it investigates how millennials and Generation Z perceive the utilization of metaverse technology in marketing, aiming to enhance product and brand image among a range of AI-assistant applications. Specifically, this study hypothesized the impact of brand image, AI-assistant customer service, affective, immersive experience, cognitive, social, and competitiveness factors on overall attitude of millennials and generation Z towards the application of AI-assistance in building product and brand image. Furthermore, this study explored the influence of overall attitude on the satisfaction, intention to use, and loyalty of millennials and generation Z towards the metaverse application, aiming to build product and brand image. The results of this study indicated that the effects of brand image, AI-assistant customer service, cognitive factor, social factor, and competitiveness factor on overall attitude were significance for millennials, while for Generation Z, the effects of brand image, AI-assistant customer service, affective, immersive experience, and competitive factor on overall attitude were found to be significant. Among the identified significant factors, the study observed that in the case of millennials, the competitiveness factor had the highest impact on overall attitude followed by brand image, social factor, cognitive factor, and AI-assistant customer service, Meanwhile, for Generation Z, the immersive factor demonstrated the highest impact on overall attitude followed by competitiveness, brand image, AI-assistant customer service, and affective factor. This study revealed that the impact of brand image, AI-

assistant customer service, and competitiveness factor on overall attitude was significant for both millennials and Generation Z. Additionally, cognitive and social factors demonstrated significance in shaping overall attitude among millennials, whereas affective and immersive experience factors showed significance in influencing on overall attitude among Generation Z. Moreover, the results also indicated that overall attitude significantly influences satisfaction, intention to use, and loyalty toward AI-assistant applications in both millennials and Generation Z.

Hence, the findings of this study suggest that both millennials and Generation Z develop a positive attitude towards AI-assistant applications in products and brands, attributed to positive brand image, perceived AI-assistant customer service, and enhanced competitiveness of products and brands. Millennials cultivate a positive attitude toward AI-assistant applications as they find product and brand information and content to be useful and valuable. Additionally, millennials develop a positive attitude toward AI-assistant applications due to the social nature to interacting with customers, facilitating communication between customers and brands. In contrast, Generation Z embraces a positive attitude toward AI-assistant applications because they derive pleasure and perceive them as friendly. Furthermore, Generation Z forms a positive attitude toward AI-assistant applications due to the immersive experience resembling real-life interactions.

This study offers managerial and policy implications. As AI applications continue to proliferate across various domains, customers' attitude toward AI-assistant applications tend to be positive. However, it's noteworthy that the factors influencing overall attitude and their respective effect size differ between millennials and Generation Z. Hence, when implementing AI-assistant applications in marketing, it is essential to consider the distinct perceptions of different generations. As revealed in this study, the utilization of AI-assistant applications should be increased in marketing strategies, encompassing brand image enhancement, improved customer service, and bolstering the competitiveness of products and brands for both millennials and Generation Z. The results also suggest that for millennials, managers should focus on improving affective factors and enhancing the immersive experience when incorporating AI-assistant applications in products and brands strategies. For Generation Z, managers should consider enhancing cognitive factors and improving social value when incorporating AI-assistant applications into products and brands strategies. Dwivedi and Hughes (2023) also emphasized that the excitement and new opportunities by the metaverse will pose challenges to individuals and society, along with the emergence of new risks.

While this study contributes valuable insights, it is not without limitations, suggesting directions for future research. Subsequent studies could enhance robustness by increasing the sample size. Furthermore, comparing AI perceptions across different generations beyond millennials and Generation Z could offer a more comprehensive understanding. Additionally, future research may delve into diverse applications of AI, further expanding the knowledge base in this field.

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