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Research Paper

Metaverse: A Model for Business Marketing

Khadija Ali [a], Tanzeel Ur Rehman[b]*

[a] Government Girls Degree College Bahawalpur, Bahawalpur, Pakistan. Email: khadijaaali37@gmail.com
[b] Zhongnan University of Economic and Law, Wuhan, China. Email: tanzeel6393@gmail.com
*Correspondence: tanzeel6393@gmail.com

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Abstract

The development of the metaverse has resulted in a noticeable advancement in the use of technology in commercial business marketing. Using the metaverse model, this study investigates how views on the use of technology and its acceptability affect the corporate business marketing. As a theoretical framework, this study investigates how favorable attitudes and acceptance of technology in Pakistan affect the adoption and efficacy of the metaverse-based marketing techniques, using the Technology adoption Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). The data was collected through questionnaire marketing experts in a range of business marketing. The results show that adopting metaverse marketing techniques improves consumer engagement and corporate performance in business marketing which is greatly facilitated by having a favorable attitude towards the technology in turn. The study focused on how important organizational support and user training are in creating a climate that is favorable to the technology adoption in business marketing. These findings of the study offer insightful information to companies looking to use the metaverse for marketing.

Introduction

As technology is developing at a rapid rate (de Sousa Jabbour et al., 2018; Niaz et al., 2020), it has fundamentally changed the today marketing tactics and strategies in the competitive marketplace. Businesses are facing extreme pressure to hold digital innovations to maintain their competitive edge and to effectively engage with their intended consumer base. The concept of the metaverse has become an innovator notion with important business marketing implications among the abundance of the technological advancements (Popescu, 2020). This realistic virtual environment provide many benefits which not only boosts user engagement but also offers opportunities for interactive and personalized marketing which are never-before-seen. The purpose of this study paper aims to explore the complex relationship between the attitudes towards technology use and the acceptability of metaverse technology in the business marketing. The goal of the research is to shedding light on the aspects that determine effective technology adoption (Salam, 2008).

The creation of the metaverse has become a virtual reality environment where users can communicate with the other users in a computer-generated environment. It is among one of the most captivating modern advancements. Science fiction helped to popularize the idea of the metaverse, which could one day come to pass and offer up the new opportunities for commerce, entertainment, and social interaction. Metaverse has become a new marketing boundary where businesses are looking progressively into because the captivating experiences there have the potential to engage customers in previously unheard-of ways (Owens et al., 2011). The incorporation of metaverse has the potential to completely transform the way businesses into the corporate strategic engage with their consumers by providing the interactive and specialized experiences. The study evaluates the various elements that influence organization enthusiasm and willingness to adopt metaverse technology. These elements are perceived usefulness, ease of use, and social impact. For instance, it has been shown that perceived utility and ease of use have a significant impact on user acceptability and usage behavior in a range of technological business marketing.

However, the variables will decide how well these marketing methods work such variables are users' attitudes towards the technology and their adoption of the new advancements in the field. To better understand how the people come to accept and use of technology, the model developed in literature has been used widely which is the Technology Acceptance Model (TAM) (Kim & Chang, 2007; To et al., 2019). It implies that users' views towards the technology are greatly influenced by its perceived utility and perceived ease of use, which in turn influences their intention to utilize it. Many companies hoping to use this technology for the marketing, knowing these elements in the context of the metaverse is essential.

Although metaverse has the potential to transform marketing approach (Mahdzan et al., 2017; Moorthy & Zhao, 2000; Sharpe & Hanson, 2017), but enterprises encounter considerable obstacles in efficiently integrating this technology. The differing levels of customer acceptance of technology are one of the main problems for the metaverse. Some consumers embrace new technology with the enthusiasm, while others may find it more

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attentive or resistant because of the worries about security, complexity, or perceived lack of benefit. The success of the marketing campaigns within metaverse can be greatly impacted by this difference in attitudes. To maximize the effect and reach of their marketing initiatives, organizations must recognize and respond to these mindsets (Anitsal et al., 2012; Olson et al., 2018). Furthermore, the metaverse is still in its early days, with differing degrees of user comfort and technological competence. This inconsistency in the metaverse technologies may result in a fragmented user experience, where only a small amount of the considered audience participates completely in the marketing campaigns. Businesses also need to overcome the technological obstacles involved in producing engaging content that blends in perfectly with the metaverse setting.

It is practically necessary to investigate how attitudes towards the technology and the adoption of new technical models affect the efficacy of the marketing efforts within the metaverse. A significant amount of research has been conducted on the Technology Acceptance Model (TAM) (Khodadad Hoseiny et al., 2013; Venkatesh, 2000) and its application to different technologies despite the fact that, there is a noticeable lack of literature on TAM's applicability in the metaverse environment. Very little studies have examined how these fields cross in the metaverse, with the majority of the existing research concentrating on traditional digital marketing and virtual reality application. Furthermore, typically the focus of the most study is the user engagement and technical features and not the psychological and attitudinal issues that affect the technology acceptability in this particular setting. There is a scarcity of the empirical data regarding the perceptions and the acceptance of the metaverse technology for the commercial marketing across the various demographic groups. In order to create the customized marketing plans it is significant to comprehend these subtleties that appeal to a wide range of the consumer demographics. As a result, the detail of the study is required to close these gaps by investigating how successful corporate marketing is using the metaverse model and their attitudes towards technology and acceptance of the technology. Finally, the main goal of the current study is to investigate how the attitudes towards and acceptance of the technology use affect how well the businesses market works in the metaverse. The most specific goal is to examine the connection between these points of views as well as the general adoption of the metaverse technology.

Literature Review

Relationship Between Effect of Attitude Towards Technology Use and Metaverse Business Marketing

According to Technology Acceptance Model (TAM) main variables affecting technology adoption are ease of use and usefulness (Lou & Li, 2017). Businesses must be able to leverage these virtual environments as time and cost effectively in their marketing of a business metaverse. An updated study revealed that positive attitudes toward which people have towards the digital advancements (other words new technologies) are seen as acceptable when looking at emerging ones, such as metaverse above. The Unified Theory of Acceptance and Use of Technology (UTAUT) explains the factors of Technology Acceptance Model (TAM) by integrating variables such as social impact and enabling environments (San Martín & Herrero, 2012). Based on UTAUT and TAM, framework of the study showing the relationship between attitude towards technology use, acceptance of technology and metaverse business use is shown in Figure 1.

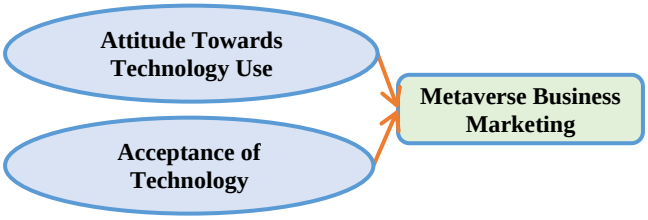

Figure 1: Framework of the Study Showing the Relationship Between Attitude Towards Technology Use, Acceptance of Technology and Metaverse Business Use.

These models helps to emphasize how technology is accepted by outside factors, such as organizational backing and squint adoption, shape. Some studies reveal that the adoption of metaverse technologies in the company marketing is highly influenced by the social proof and leadership support. By offering immersive, interactive experiences that go beyond conventional digital marketing, the metaverse presents special marketing potential in the business. Technology adoption research indicates that the favorable perspectives on technology are frequently influenced by past encounters, the technology's apparent advantages, and its perceived applicability to an individuals professional or personal life. These studies highlight the importance of exposure, education, and training in creating a positive attitude towards the technology in order to promote adoption. As an demonstration by researcher Agarwal and Prasad (1999). Companies are developing online stores where the customers may engage with merchandise in three-dimensional settings. For instance, customers can explore items and interact with the brand in a unique way via Nike's Roblox virtual showroom. Research has indicated that the immersive experiences of this unique setting have the potential to greatly improve the consumer involvement and perception of the product. The move to virtual events was promoted by the COVID-19 epidemic.

The metaverse has a lot to offer, but it can be expensive at first. Significant sums of money are being invested in platform development, content production, and VR/AR technologies. Businesses need to carefully assess the projected return on investment, taking into account both the tangible cash gains and the intangible advantages such as customer loyalty and brand value (Porter & Heppelmann, 2017). For the success of the metaverse marketing, consumers must be prepared for the change. Although many people are becoming familiar with the new technologies like VR and AR, there is still a difference between the early adopters and the general public. Studies

indicate that younger consumers Gen Z and generation Y in particular are more open towards the metaverse marketing, while older consumers might want further information and comfort to become open to the metaverse. The metaverse presents the factors such as fresh ethical and legal issues, such as managing digital rights, protecting data privacy, and closing the digital divide. The important foe of the business strategy is to keep the trust of customers and adhere to legal requirements, businesses must properly handle these challenges. In recent research the necessity of developing precise rules and moral principles for interactions in the metaverse has been emphasized. One example of a most successful and remarkable metaverse integration is Nike's Nikeland on Roblox. Users can browse items and play sponsored sports games in this virtual environment, fusing entertainment with business. Among younger audiences, Nikeland has greatly increased in the brand engagement. A campaign that enhanced brand visibility and drove sales of both virtual and physical products and the best example of this is Gucci's virtual garden on Roblox that demonstrated the potential for cross-platform marketing by allowing users to explore themed rooms inspired by Gucci designs in an interactive style (Alenius et al., 2015; Moorthy & Zhao, 2000; Sharpe & Hanson, 2017). The metaverse is still developing, and in the upcoming years many major advancements are anticipated. Important developments in the business marketing that will influence its future are included. As these fields continue to grow, metaverse experiences will become more attainable and lifelike. Wider usage is anticipated due to improved graphics, more reasonably priced hardware, and increased platform interoperability. In order to personalize experiences in the metaverse, AI and big data will be necessary.

This bidirectional and complex relationship between the metaverse in corporate marketing practices and attitudes towards technology use. If we look at the bright side and think about it more, we should admit that what tools metaverse-based business marketing provides is continuing with technological improvements. It will be important for businesses to appropriately consider technological readiness (Dash et al., 2019; Richey et al., 2007; Xing, 2019), consumer acceptance, costs and ethical principles when incorporating metaverse elements in their marketing strategy. Since the metaverse is immersive and engaging was popular with contemporary users, it has been altered to become equally intense marketing. These developments will deserve attention to continue investigating in follow up research and could provide insight into how organizations can effectively capitalize on the metaverse.

Hypothesis (H1): *There is a positive relationship between the effect of attitude towards technology use and metaverse business marketing.*

Relationship Between Acceptance of Technology and Metaverse Business Marketing

Marketing strategies for the businesses are changing as a result of the metaverse's occurrence as a new frontier in the digital connection (Bondar et al., 2017; Nizam et al., 2020). The immersive and distinct experiences provided by the metaverse, which includes virtual and augmented reality (VR and AR) places, beyond the capabilities of the conventional marketing channels. Effective use of these digital worlds will requires an understanding of the elements influencing the acceptance of the metaverse technologies in the company marketing. Consumers' attitudes towards the technology use are shaped by its perceived utility and simplicity of use, and these attitudes then affect users' behavioral intention to actually use the technology or reject it. It is a theoretical model that make clear the attitudes towards new technology and provides useful framework for them. The most important elements are influencing the adoption or rejection of a new technology are perceived usefulness and ease of use, while the other aspects also play a role.

Many factors that are influencing marketers acceptance of new technologies have been uncovered by the empirical studies investigating technology adoption in the marketing environments. For instance, Ahmad et al. (2014) used UTAUT to examine how the marketers adopted social media and they discovered that the adoption intentions were highly predicted by the performance expectancy and social influence. Similarly, Venkatesh (2000) study supported that the significance of PU and PEOU in the adoption of the technology and in a variety of the fields. Some studies on the adoption of the virtual reality (VR) and the augmented reality (AR) provide appropriate perceptions, despite the need of the research focusing on the metaverse adoption in the marketing. Such significant elements as perceived usefulness and ease of use have an impact on consumers' decision to adopt AR-based buying applications. From these findings it can be inferred that the same factors may influence marketers' adoption of metaverse technologies. Later on, other models included more factors like social influence and enabling conditions such as Unified Theory of Acceptance and Use of Technology (UTAUT) and TAM2.

Although the metaverse marketing has a great promise, there are some issues which need to be resolved before it can be widely used effectively. The high technical requirements, one might struggle to reach promises potential time load specifically as a user needs experienced technology plus fast internet. The market to adopt all of the metaverse technologies, these obstacles must be removed from it. These are the biggest digital site concerns. Building confidence, and adoption in which secured privacy must not be compromise able. The metaverse constitutes a new regulatory-ethical problem, in particular with the confrontation of bad conduct and regulation on material Along those same lines, developing a more granular set of policies and guidelines to use as reference points by which the future can be compared will also be instrumental (Cascio & Montealegre, 2016).

Further research is warranted to examine the potential long-term impacts of metaverse interactions on consumer behavior, the potential contributions of AI to improve user experiences, and the influence of cultural disparities on the adoption of

technology and marketing strategies. The relationship between metaverse marketing and technical acceptance is complex and varies (Rathore, 2018), influenced by a number of elements including perceived enjoyment, ease of use, and social impact. Ease of use, perceived enjoyment, and social impact are a few of the factors that influence the complex and varied relationship between metaverse marketing and technological acceptance. As the metaverse expands, marketers must devise innovative methods of engaging with consumers while addressing emerging ethical, technological, and privacy concerns. By using the immersive qualities of the metaverse to create unique and memorable brand experiences, businesses may build stronger bonds with their target audiences.

Hypothesis (H2): *Acceptance of technology has positive effect on metaverse business marketing.*

Methodology

This study employed a cross-sectional research strategy, utilizing the Metaverse model as a framework, to provide a comprehensive knowledge of the impact of technology adoption and attitudes on business marketing. The study is intended for the marketers and the business professionals who have an interest in or expertise with leveraging the Metaverse for company marketing in Pakistan. Professionals from a range of industries that make up the population in order to guarantee a diverse representation of the views and degrees of the permissibility. To select participants, a stratified random sampling technique is used. A sample size of the 281 participants is found to be sufficient to achieve statistical power for the quantitative survey, allowing account the study's scope. To measure people's suggestions about the technology and their acceptance of it in company marketing in the Metaverse, a structured questionnaire has been designed. The following scales are included in the questionnaire. The Attitude Towards Technology Scale (ATTS), a 5-point Likert scale, was developed to examine overall attitudes towards technology. This methodology, which is based on the previous studies, estimates the technology acceptance and utility of the Metaverse technology in the company marketing. The Business Marketing Effectiveness Scale (BMES), which was created particularly for this study, estimates how well marketing strategy work in the setting of the Metaverse. A highly distinguished survey platform is used to deliver the quantitative survey online and offline. An email invitation is sent to the participants, and in an effort to increase the response rates, inquire about reminders are given. It should take you to about 15 to 20 minutes to complete the survey. PLS software is used to investigate quantitative data (Ringle et al., 2005). The examination consists of descriptive statistics to summarize the data, the mean, standard deviation, frequency, and percentage are computed and inferential statistics to determine how views towards and acceptance of the technology relate to marketing efficacy in the Metaverse, multiple regression analysis is employed. Testing hypotheses is done at the significance level. The internal consistency of the scales is determined using Cronbach's alpha. To give assurance construct validity, factor analysis was used.

Findings

The descriptive statistics Table 1 gives an overview of the core tendencies and variability for these constructs. The items' mean values range from 3.638 to 3.799, with medians constantly at 4, suggesting that respondents' opinions of technology and its use in metaverse corporate marketing are generally positive. The standard deviations, ranging from 1.149 to 1.073, indicate a considerable degree of the response variability. The data distribution has a slight left skew, as indicated by the negative Skewness values, and the scores tend to be higher on the scale. Additionally negative, excess Kurtosis levels indicate the lighter tails than a normal distribution, indicating less extreme values in the answers.

Table 1: Data Information.

	No.	Missing	Mean	Median	Min	Max	Standard Deviation	Excess Kurtosis	Skewness
ATTU1	1	0	3.689	4	1	5	1.113	-0.495	-0.5
ATTU2	2	0	3.677	4	1	5	1.149	-0.558	-0.502
ATTU3	3	0	3.768	4	1	5	1.089	-0.557	-0.502
AT1	4	0	3.752	4	1	5	1.135	-0.485	-0.605
AT2	5	0	3.724	4	1	5	1.12	-0.498	-0.522
AT3	6	0	3.669	4	1	5	1.073	-0.178	-0.581
MBM1	7	0	3.799	4	1	5	1.117	-0.073	-0.774
MBM2	8	0	3.748	4	1	5	1.097	-0.471	-0.566
MBM3	9	0	3.72	4	1	5	1.121	-0.511	-0.511
MBM4	10	0	3.638	4	1	5	1.131	-0.406	-0.568

Note: ATTU = Attitude Towards Technology Use: AT = Acceptance of Technology: MBM = Metaverse Business Marketing

Strong correlations between each of item and its corresponding construct are shown by the factor loading for the items (Hair Jr et al., 2020; Kock, 2015; Streukens & Leroi-Werelds, 2016), which are shown in Table 2 and Figure 2. The factor loading for the "Acceptance of Technology," which are AT1: 0.826, AT2: 0.85, and AT3: 0.797, are all over the 0.7 criterion, indicating that these items are likely to be accurate indicators of the construct. Strong factor loading that are also seen in the items indicating "Metaverse Business Marketing" (MBM1: 0.767, MBM2: 0.811, MBM3: 0.77, MBM4: 0.766) and "Attitude towards Technology Use" (ATTU1: 0.829, ATTU2: 0.824, ATTU3: 0.843). These findings demonstrate that the items precisely measure the long for constructs, hence supporting measurement model's convergent validity.

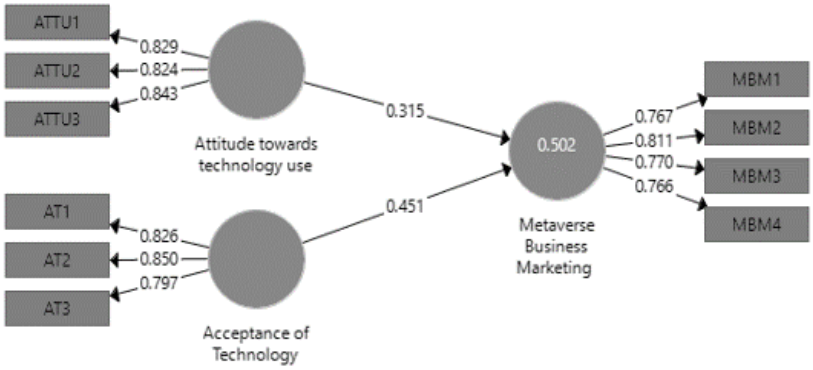

Figure 2: Measurement Model Assessment.
Note: ATTU = Attitude Towards Technology Use: AT = Acceptance of Technology: MBM = Metaverse Business Marketing

Table 2: Factor Loading.

Items	Acceptance of Technology	Attitude towards technology use	Metaverse Business Marketing
AT1	0.826		
AT2	0.85		
AT3	0.797		
ATTU1		0.829	
ATTU2		0.824	
ATTU3		0.843	
MBM1			0.767
MBM2			0.811
MBM3			0.77
MBM4			0.766

Note: ATTU = Attitude Towards Technology Use: AT = Acceptance of Technology: MBM = Metaverse Business Marketing

Additional proof of the validity and reliability of the constructs as shown in Table 3. Good internal consistency that is indicated by Cronbach's alpha values that are all above 0.7 for the "Metaverse Business Marketing" (0.784), "Acceptance of Technology" (0.764), and "Attitude towards Technology Use" (0.778). The constructs' responsibility is further confirmed by the high composite reliability (CR) values (Acceptance of Technology: 0.864, Attitude towards Technology Use: 0.871, Metaverse Business Marketing: 0.86). For every construct, the average variance extracted (AVE) values are way greater than 0.6, indicating strong confluent validity since the latent construct accounts for over the half of the variation in the items.

Table 3: Alpha, CR and AVE.

Variables	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Acceptance of Technology	0.764	0.765	0.864	0.68
Attitude towards technology use	0.778	0.778	0.871	0.692
Metaverse Business Marketing	0.784	0.786	0.86	0.606

The assessment of the discriminant validity verifies that the constructs are different from one another is shown in Table 4 (Alarcón et al., 2015; Henseler et al., 2015). The correlations between the constructs (Acceptance of Technology and Attitude towards Technology Use: 0.697, Acceptance of Technology and Metaverse Business Marketing: 0.671, Attitude towards Technology Use and Metaverse Business Marketing: 0.63) are less than the square roots of the AVE values (Acceptance of Technology: 0.825, Attitude towards Technology Use: 0.832, Metaverse Business Marketing: 0.779). The model's discriminant validity is supported by the fact that each construct shares more variance with its own items than with items of the other constructs.

Table 4: Discriminant Validity.

	Acceptance of Technology	Attitude Towards Technology use	Metaverse Business Marketing
Acceptance of Technology	0.825		
Attitude towards technology use	0.697	0.832	
Metaverse Business Marketing	0.671	0.63	0.779

The proposed links between the constructs are assessed by the structural model assessment (Hair Jr et al., 2020; Matthews, 2017; Streukens & Leroi-Werelds, 2016), which is presented in Table 5 and Figure 3. With a t-value of 6.108 and a p-value of 0, the path coefficient from the "Acceptance of Technology" to "Metaverse Business Marketing" is 0.451, suggesting a statistically significant positive impact. This implies that more successful corporate marketing in the metaverse is linked to increased technology use. Comparably, there is a substantial positive effect from the "Attitude towards Technology Use" to "Metaverse Business Marketing" as indicated by the path coefficient of 0.315, t-value of 4.034, and p-value of 0. These

findings support the notion that the company marketing initiatives in the metaverse are strengthened by a favorable outlook on the technology use. Figure 4 and Figure 5 also shows the histogram of hypotheses.

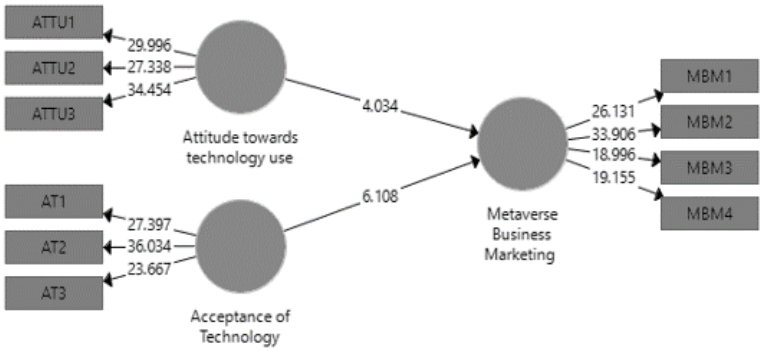

Figure 3: Structural Model Assessment.
Note: ATTU = Attitude Towards Technology Use: AT = Acceptance of Technology: MBM = Metaverse Business Marketing

Table 5: Results.

	Beta	Mean	SD	T Statistics	P Values
Acceptance of Technology -> Metaverse Business Marketing	0.451	0.45	0.074	6.108	0
Attitude towards technology use -> Metaverse Business Marketing	0.315	0.319	0.078	4.034	0

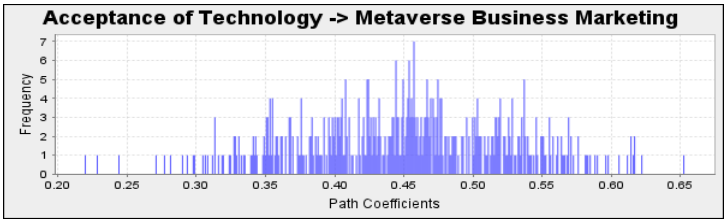

Figure 4: Acceptance of technology -> Metaverse Business Marketing.

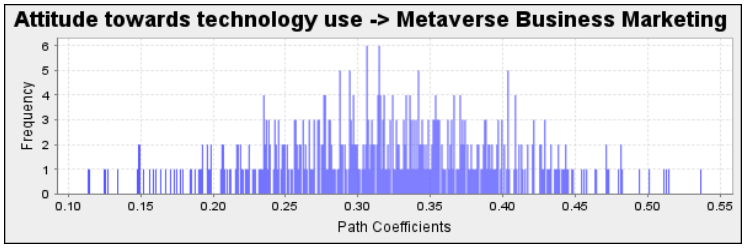

Figure 5: Attitude towards technology use -> Metaverse Business Marketing.

Discussion

This study conclusion offer some significant insights into the relationship between consumers' attitudes towards technology use and their perceptions of metaverse technology based on business marketing. More specifically, our results demonstrate a favorable correlation between views regarding technology use and the acceptance level of metaverse technology. Furthermore, the efficacy of marketing for metaverse businesses is positively impacted by the adoption of technology. Our study on technology acceptance supports earlier research, demonstrating that favorable acceptance of technology is associated with a higher perception of the usefulness of metaverse technology in business marketing.

Users who see technology promisingly are more likely to see new technologies as useful, according to the studies based on the Technology Acceptance Model (TAM) (Venkatesh & Davis, 2000). This association implicit that customers are more likely to remember the advantages of that metaverse technology that can provide for corporate marketing if they already have a positive attitude towards technology. In a similar, the literature is already in extant supports the favorable correlation between the attitude towards technology and the perceived ease of use of metaverse technologies. Additionally, the TAM asserts that favorable opinions of technology improve its perceived usefulness. Our findings in the setting of the metaverse may be part of a larger trend, as this association has been proven in a variety of situations, including e-commerce (Gefen et al., 2003) and online learning platforms (Venkatesh & Bala, 2008). The usefulness of metaverse business marketing is enriched by the beneficial impact of the technology adoption, which also makes TAM and related models applicable to novel and developing technologies. According to the earlier research, acquiring

technology can greatly increase user satisfaction and engagement on a variety of digital platforms (Kim et al., 2007; Thong et al., 2006). Our results are in line with the body of research, indicating that consumers are more likely to interact with and respond promisingly to marketing startups in the metaverse when they embrace the technology. Although our results are generally consistent with the current theoretical frameworks, they also provide fresh perspectives unique to the field of the metaverse corporate marketing. Because the metaverse is a relatively new marketing platform, there is not much research that has been done specifically to address our theories. The durability of these models is strengthen by the significant positive associations shown in our study, which implicit that conventional models of the technology acceptance are applicable to the metaverse. The degree to which positive attitudes and acceptance of the technology translate into increased participation in the metaverse is one prominent difference. Although earlier research has preponderantly concentrated on overall user pleasure and perceived utility, our findings draw attention to the particular influence on the marketing effectiveness. This shows that positive views towards and acceptance of the technology may be expanded more by the immersive and interactive nature of metaverse than by the more conventional digital venues. Our findings have important consequences for companies trying to use the metaverse for marketing. The commendatory associations indicate that promoting good attitudes towards the technology and increasing customer acceptance should be a top priority for the marketing strategies in business metaverse. To vitalize trust, this could require informational campaigns, exquisite satisfying interface designs, and guarantees of the privacy and security.

Conclusion

The study indicates that the positive attitudes towards the technology significantly raise the perceived utility and usefulness of the metaverse technology in corporate the marketing. Technology adoption also positively affects the effectiveness of corporate marketing for the metaverse. These results offer credence to the idea that successful adoption of new digital platforms necessitates favorable attitudes towards technology. These results align with accepted theories, like the Technology Adoption Model (TAM). Businesses should prioritize promoting positive attitudes and technology acceptance among their clients, since the enthralling and participatory nature of the metaverse appears to amplify these effects. Companies that prioritize user education, straightforward design, and fostering trust in security and privacy may find it easier to leverage the metaverse for marketing objectives. These findings support well-established theories of the technology adoption inside the metaverse and suggest new approaches for enhancing customer engagement in this dynamic digital landscape. Future research should look more closely at these connections as the metaverse grows and becomes increasingly incorporated into the conventional business strategies.

Implications of the Study

The results of the study have a number of significant outcomes for companies, advertisers, and the scholars studying metaverse business marketing. Encouraging a favorable perception of the technology among their target market should be a top goal for businesses looking to capitalize on the metaverse's opportunities. In this virtual environment, the customers' reactions to the marketing campaigns may be improved by using the strategies that enlighten the metaverse technology's perceived ease and use. Creating and engaging an enchanting metaverse experiences is necessary to increase the user acceptance and involvement in metaverse businesses. Marketing professionals should prioritize the development of user-friendly interfaces, compelling content, and instinctive websites in order to enhance user experience and promote extended interaction with the promotional materials. Building confidence in the security and privacy of the metaverse platforms is essential to fostering the positive attitudes towards the technology and increased customer acceptance in business marketing. In order to reduce the consumer concerns and enhance the platform trust, companies should prioritize the openness, secure data storage measures, and evident communication about the security procedures. Customers can be influenced to have the positive attitudes and impressions by being informed about the capabilities and possible benefits of the metaverse technology. Marketers should develop programme of education that highlight the possibilities of the metaverse and highlight its value proposition for consumers and the businesses. As the metaverse develops, businesses must be considered of changes in consumer attitudes, preferences, and the behaviors. Effective customer engagement in this ever-developing digital environment requires marketing strategies that are regularly modified in response to user input, industry trends, and technological advancements. By working together, academics and business can improve our knowledge of the mechanisms that underlie consumer behaviour in the metaverse. Scholars and philosophers can investigate novel theoretical frameworks, create inventive methodology, and provide the practical insights through multi skilled research, which can further be used to inform the marketing strategies and to improve customer involvement in the metaverse business marketing. Overall, this study highlights how crucial consumer perceptions of technology and acceptance of metaverse technology are to achieving profitable company marketing objectives. Through the utilization of these insights and the adoption of a consumer-focused methodology, enterprises may capably exercise the complexities of the metaverse ground and effectively promote immersive and significant customer engagement.

Limitations

The sample of the study which was carried out in specific

demographic characteristics and the environment may limit the implacability of the study's conclusions. To ensure the wider application, future research should try to duplicate these findings in a variety of scenarios and demographic groupings. Measuring characteristics such as the technological adoption, perceived benefit, and attitude towards it may introduce bias or the measurement inaccuracy. Future research could employ more precise measurement methods and tools to increase the validity and dependability of results. The study's cross-sectional design makes it challenging to identify the reason behind the relationships between the variables. Experiments or longitudinal investigations may offer more convincing proof of the temporal precedence and causality. The study concentrated on the metaverse as a particular technology platform for advertising businesses. Subsequent investigations may examine the variations in the correlations found in this study among other digital contexts and technology platforms.

Future Directions

Future studies can look into possible moderating variables that might affect the relationships between viewpoints on technology, technology adoption, and the effectiveness of marketing within the metaverse. A few elements that could significantly affect customer behaviour are individual differences, cultural norms, and platform characteristics. Researchers could use longitudinal studies to track changes in consumer attitudes, acceptance, and behaviour over time in order to assess the long-term consequences of marketing interventions in the metaverse. Longitudinal data can also be utilized to identify causal relationships and potential feedback loops between variables. It may be possible to adjust relevant variables (such as attitudes towards technology and perceived usefulness) using experimental designs and then track how those changes affect consumer behaviour in the metaverse. Experiments may yield more convincing proof of causation and aid in the development of successful marketing plans. Studies that draw comparisons between customer behaviour and marketing efficacy on various digital platforms—such as social media, traditional e-commerce websites, and the metaverse—should be conducted. Researchers can learn more about the special characteristics and difficulties of marketing in the metaverse by comparing and contrasting customer responses. Future study might build on this work by examining these areas and providing more precise recommendations for the use of Metaverse technology in company marketing.

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CRediT Authorship Contribution Statement

Tanzeel Ur Rehman: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources. Khadija Ali: Software, Supervision, Validation: Visualization. Writing – original draft. Khadija Ali, Tanzeel Ur Rehman: Writing – review & editing.

Declaration of Competing Interest

We state that there are no pertinent financial or personal interests related to this research.

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Ethical Statement

This research followed established ethical standards, and no ethical approval was necessary as no human or biological materials were used.

Data Availability Statement

The datasets used and produced in this research can be requested from the corresponding author on reasonable terms.

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