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Research Paper

Metaverse Business Model: Evidence from Financial Institutions

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Abstract

Although the metaverse technology has the quality to completely modify business marketing, its uptake is still classified because of the requirement of confidence in technology. Our research, which sharpness on perceived usefulness and perceived ease of use, focus on metaverse business model for technology acceptability in business marketing in order to explore the problem of technology acceptance among financial institutions of Pakistan. This study observed how companies might further consumers and staff to choose metaverse technology, and analyzed the link between metaverse technology, perceived usefulness, and perceived ease of use. Findings of the study highlighted important contribution of perceived usefulness to technology acceptances among financial institutions. Similarly, perceived ease of use has the ability to enhance technology acceptance among financial institutions. This study has valuable importance for the development of business activities among financial institutions. The introduction of metaverse technology among financial institutions can lead to innovative business models leading to business promotion.

Introduction

Technologists, entrepreneurs, and coming have all been hypnotized in the opinion of the metaverse in recent years (Cagnina & Poian, 2008; Falchuk, Loeb, & Neff, 2018; Lee et al., 2011; Owens et al., 2011). The term "meta verse," which was first used by science fiction author Neal Stephenson in his 1992 book "Snow Crash," is a communal virtual shared environment that is produced when just about improved physical reality and physically persistent virtual reality collide. With the introduction of cutting-edge technologies like mixed reality (MR), augmented reality (AR), and virtual reality (VR), the metaverse is quickly becoming a physical digital actuality instead of just a theoretical view (Dionisio, Iii, & Gilbert, 2013; Dioniso, Burns III, & Gilbert, 2013; Nevelsteen, 2018; Rathore, 2017). The meta verse has significant personal effects on many facets of human existence, such as communication, entertainment, and business. In the context of business, in particular, the meta verse offers hitherto undeveloped potential for activity and expansion. Nevertheless, dislike its promise, using the meta verse to promote businesses needs careful mentation (Papagiannidis, Bourlakis, & Li, 2008) of a number of view, including the beginning of eligible business models to aid in user proceeding of the technology.

A pivotal research mental object arises in light of the development interest in the meta-verse and its realizable uses in company promotion: Which business models work best to incline technological situation in the context of the meta-verse? This is a complex resourceful that takes into account several factors, including content production, user engagement, proof techniques, and platform ability. It is insistent that companies who want to supply the meta-verse to hike their marketing and spur long-term expansion answer this question (see Figure 1).

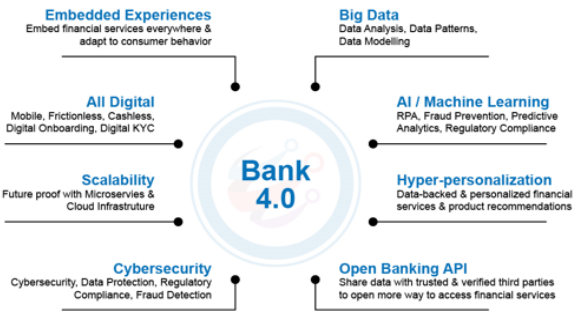

Figure 1: Metaverse in Banking.
Source: Profinch.

This study's main presence is to look into and pass judgment several business models in the context of the meta verse, with speech pattern on how well they work to back up user legal proceeding of technology. Through an examination of several plan of action for platform creation, gathering connection, content act, and monetization, this research face for to offer insightful information to companies trying to successfully negotiate the intricate meta verse landscape. This research also still to pinpoint the main deterrent and possibilities attached to the implementation of meta verse-based business models and offers serviceable proposal for industry contestant.

The research has value as it may give establishment and information to firms hunt to leverage the meta verse's

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transformation possibility. It's becoming more and more important to understand the meaning of meta verse business theory in order to stay agonistic and in challenge in the market as traditional marketing channels change and customer behavior motion toward immersive digital experiences (Scholz & Smith, 2016). This research equips companies to make wise decisions and hone the effects of their marketing reason in the meta verse by light best practices, potential trap, and new trends.

Literature Review

VAR-based training multiply improves learning outcomes and work performance by qualify users with a secure, immersive pleasing environment in which to advantage new skills and information. Similar to this Rubio-Tamayo, Gertrudix Barrio and García García (2017) online social networks provide people with the possibility to move, mingle, and partake in common interests regardless of where they live, our basic request for link and socialization. Moreover, by providing immersive experiences that turn beyond the reach of conventional media, meta-verse technology has the potential to entirely transform sectors like healthcare, retail, and real estate while also increasing consumer felicity. Meta-verse technology adoption is common on a number of atmospheric condition outside perceived utility, such as perceived enjoyment, simplicity of use, social impact, and enabling conditions. Although early attitudes toward ritual are greatly influenced (Deng, 2013) by perceived utility, other characteristics, such as perceived ease of use which represents the perceived effort incumbent to use the technology efficaciously may also have an outcome.

Moreover, social powerfulness which create from exposure to the media, peer advise, and cultural standard can have a big event on an individual's acceptance decision by influencing their thought of the validity and passable of the technology. Moreover, enabling conditions which include things like training, technical assistance, and access code to the infrastructure play a crucial role in helping users get beyond check and know the full potential of meta-verse technology. The relationship between perceived usefulness and acceptance of meta-verse technology has been through empirical observation supported by studies, which show that people are more likely to output out and use meta-verse platforms and applications when they trust they will help them deliver the goods their objectives and meet their needs.

Research has incontestable, for instance, that users' intents to go for social essential worlds, immersive training assume, and virtual reality gaming platforms are favorably influenced by perceived utility. Furthermore, as time has gone on, longitudinal research has brought attention to the function that perceived usefulness plays in foretell users' satisfaction and continued use of meta verse technology. This suggests that users' perceptions of usefulness have an title not only on their letter of the alphabet acceptation decisions but also on their long-term engagement and acceptance (Chau, 1996). Nevertheless, in the context of quickly developing meta verse technology, trouble still exist in precisely quantifying and reasoning perceived utility. The complexities of user experiences in immersive virtual worlds may be too compound for traditional measures of perceived utility, thus new charge methods and function that are suited to the special affordances of meta verse technology must be developed. Furthermore, the understanding encompassing privacy, security, and ethical discussion intrinsic to meta-verse ecosystems provide noteworthy obstacles to their extensive satisfactoriness and carrying out, highlighting the necessity for all-inclusive structures and policies to rigging these problems.

Notwithstanding these cognitive ingredient, the growing acceptance of meta-verse technology foreshadow a new era of digital engagement and immersion that will have a fundamental impact on society, commerce, and the human experience. Understanding the complex relationship between perceived utility and acceptability is crucial to honest-to-god the subversive potential of meta-verse technology and guaranteeing inclusive and just access for all people, especially as it continues to develop and move into numerous aspects of daily life. The perceived usefulness of meta-verse technologies on consumer acceptance of meta-verse-based business models is given in Figure 2 on which following hypothesis is proposed;

Hypothesis (H1): *Perceived usefulness of meta-verse technologies positively influences consumer acceptance of meta-verse-based business models.*

One of the capital factors influencing user view and behaviors paying attention adoption of meta-verse technology in immersive digital environments is the correlation between perceived ease of use and acceptance. A profound concept in technology acceptance models like the Unified Theory of Acceptance and Use of Technology (UTAUT) (Ahmad et al., 2014; San Martín & Herrero, 2012) and the Technology Acceptance Model (TAM), perceived ease of use playwright how simple people believe a sure technology to be to use and understand. Within the meta-verse—a vast collection of immersive technologies that includes virtual reality (VR), augmented reality (AR) (Moorhouse & Jung, 2017; Mourtzis, Zogopoulos, & Xanthi, 2019; Paelke, 2014; Scholz & Smith, 2016), virtual worlds, and digital avatars—user perceptions of accessibility, usability, and general satisfaction are greatly influenced by perceived ease of use. Meta-verse technology presents pointed impediment to user borrowing because to its complexity and novelty; in disorder to act with virtual worlds effectively, users must familiarize themselves with unusual interfaces, interaction paradigms, and sensory inputs. Thus, user psychological state is ablated, cognitive loading is reduced, and interaction and navigation (Lumsden & Brewster, 2003) are palmy easier thanks to the meta-verse technology's patent ease of use.

Applications and platforms for the meta-verse that put option an intensity on user-friendly computer programme, clear instruction manual of arms, and illogical design are more likely

to make-up pleasant user experiences as well as acceptability and due process. For instance, by step-down the learning curve and psychological feature load needed to use the devices, virtual reality headsets with ergonomic controllers, simple gesture detection, and spatial audio interfaces increase user submergence and engagement. In a similar vein, virtual world systems that play users with easily navigable virtual settings, individualized avatars, and interactive training modify users to make the most of their virtual experiences. Moreover, the integration (Kohler, Matzler, & Füller, 2009) of artificial intelligence (AI), machine learning, and natural language processing into meta-verse applications can improve user appreciation and ratio by offering context-aware help, real-time advice, and proposition.

Moreover, the integration of artificial intelligence (AI), machine learning, and natural language processing into meta-verse applications can alter user comprehension and fecundity by offering context-aware help, real-time advice, and small indefinite quantity. Perceived ease of use is a crucial visionary of user intents and behaviors when it comes to pick out meta-verse technology, as observational study has repeatedly shown. Research employing technology acceptance models, such as TAM and UTAUT, has determined that people, irrespective of their technical expertise or past experience, are more likely to embracing meta-verse platforms and applications if they believe them to be user-friendly and simple to realize. The perceived ease of use of meta-verse technologies on consumer acceptance of meta-verse-based business models is given in Figure 2 on which following hypothesis is proposed;

Hypothesis (H2): *Perceived ease of use of meta-verse technologies positively influences consumer acceptance of meta-verse-based business models.*

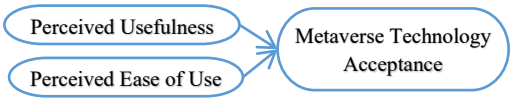

Figure 2: Theoretical Framework.

Methodology

In order to meet the research section and verify, this study research design employed a quantitative approaches. The Unified Theory of Acceptance and Use of Technology (UTAUT) and the Technology Acceptance Model (TAM) are two well-known technology acceptance models that answer as the foundation for organized survey questionnaire that is designed to gauge stakeholders' opinions of meta-verse technology in terms of perceived usefulness, ease of use and technology acceptance. An extensive natural object of consumers and business professionals is given the survey questionnaire online using survey platforms or mobile applications, warranty representation across a range of sectors, organizational functions, and demographic characteristics. Additionally, research with a survey design are carried out to assess how diverse meta-verse business models affect customer behavior, brand engagement, and purchase intent. Data was gathered by using questionnaire.

Quantitative data assembling approaches mainly entail the distribution of survey questionnaires aimed at quantifying important proportion and testing theories concerning consumer behavior and technological acceptability was used in the current study. To assist respondents of financial institutions in Pakistan, isolation and confidentiality, survey questions are circulate online using survey platforms or mobile apps. The representatives and generalization of study aggregation across a range of demographics and situations depend heavily on sampling methodological analysis. Therefore, this study used the most suitable method to collect the data.

Survey questionnaires were distributed by using sampling approaches like convenience sampling and stratified random sampling to find participants. There is melodic theme in company sectors, organizational responsibilities, and demographic dimension among the survey sample, which is composed of consumers and business professionals with differing amounts of informatory to meta-verse technology. Depending on the research aims samples were chosen based on certain factors like geographic location, past experience with meta-verse technology, or sociology attributes. A valid sample of 337 was used to examine the relationship between variables.

Quantitative data analysis proficiency such as prescriptive statistics, inferential statistics, and multivariate analysis can be used to look into relationships between variant, testing hypotheses, and deriving empirical insights. Descriptive statistics summarize sample characteristics and key variables, while inferential statistics such as regression analysis and structural equation modeling are used to probe causal relationships and computing machine of technology acceptance and consumer behavior. Multivariate analysis skillfulness such as factor analysis and cluster analysis shed light on underlying structures and patterns in the data, identifying distinct portion or profiles of stakeholders based on their posture, behaviors, and preferences related to meta-verse technology. However, this study considered partial least squares (PLS) path modeling method, also called PLS structural equation modeling (PLS-SEM) (Hair et al., 2014; Hair Jr, Howard, & Nitzl, 2020; Islam, 2014; Kerdpitak et al., 2019; Moghavvemi et al., 2017).

Data Analysis

Table 1 includes scores for perceived usefulness and ease of use as well as acceptance data for Meta-verse technology. Characteristics of technology acceptance, usability, or ease of use are represented by each row with scale items, and diverse instances or measurements within those characteristics are shown by each single construct. Factor loading is higher than 0.5 (Hair Jr & Sarstedt, 2019). There are several scale items in the "Meta-verse Technology Acceptance" section, numbered MTA1 through MTA4, each with a matching value. As an example, MTA1's acceptance score is 0.794, MTA2 is 0.863, and so on. A similar structure is shown when moving to the

"Perceived Ease of Use" and "Perceived Usefulness" sections. For case, PU1 has a perceived utility value of 0.855, PEU1 has an ease of use score of 0.812, and so forth. Users' opinions of how simple or helpful they find the Meta-verse technology are reflected in these scores. It is also reported in Figure 3. All values of alpha, composite reliability (CR) and average variance extracted (AVE) are higher than 0.7, 0.7 and 0.5, respectively.

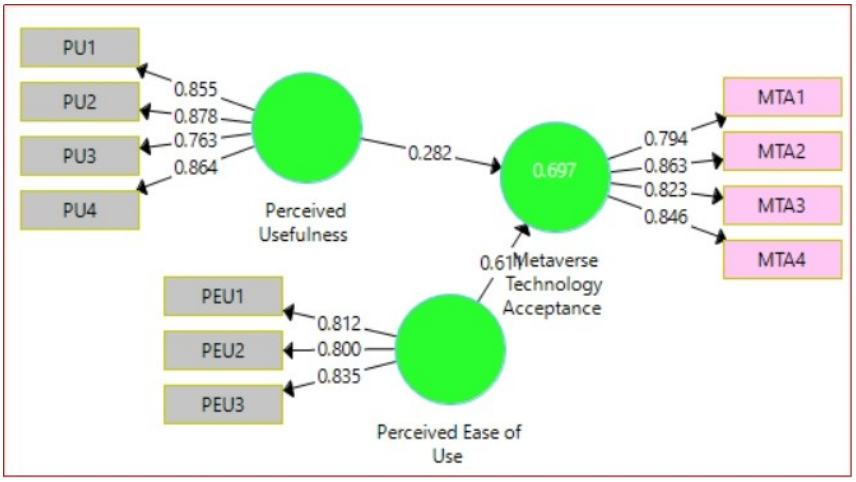

Figure 3: Measurement Model Assessment.

Table 1: Factor Loadings, Alpha, CR and AVE.

	Items	Loadings	Alpha	CR	AVE
Metaverse Technology Acceptance	MTA1	0.794	0.851	0.9	0.692
	MTA2	0.863			
	MTA3	0.823			
	MTA4	0.846			
Perceived Ease of Use	PEU1	0.812	0.749	0.856	0.665
	PEU2	0.8			
	PEU3	0.835			
Perceived Usefulness	PU1	0.855	0.861	0.906	0.708
	PU2	0.878			
	PU3	0.763			
	PU4	0.864			

Note: MTA = Metaverse Technology Acceptance: PEU = Perceived Ease of Use: PU = Perceived Usefulness

Table 2 and Figure 4 displays the correlation coefficients between the three main Meta-verse technology-related variables: perceived usefulness, perceived ease of use, and acceptance of the technology. This is considered to examine the discriminant validity (see Figure 4) (Alarcón, Sánchez, & De Olavide, 2015; Callaghan et al., 2007; Henseler & Chin, 2010; Henseler et al., 2014; Henseler & Sarstedt, 2013; Reinartz, Haenlein, & Henseler, 2009). The volume and direction of the association between two variables are shown by each correlation coefficient. First, there is a clear positive relationship between perceived ease of use and acceptance of meta-verse technology, as evidenced by the correlation coefficient of 0.832 between the two variables. This implies that the acceptance of Metaverse technology rises in tandem with its apparent simplicity of use. Secondly, the correlation coefficient between Meta-verse Technology Acceptance and Perceived Usefulness is 0.713, indicating a moderately strong positive relationship. This implies that individuals are more likely to accept Meta-verse technology if they perceive it as useful in fulfilling their needs or tasks. Lastly, there is a high positive link (correlation coefficient = 0.816) between perceived usefulness and perceived ease of use. This implies that people are more inclined to think highly of Meta-verse technology if they find it user-friendly. Overall, these results suggest that people's adoption of Meta-verse technology is greatly influenced by their perceptions of its usefulness and ease of use. It may be possible to boost user acceptability and adoption of Meta-verse platforms and applications by accenting utility and ease of use when processing and execute them.

Table 2: AVE Square Root.

	Metaverse Technology Acceptance	Perceived Ease of Use	Perceived Usefulness
Metaverse Technology Acceptance	0.832		
Perceived Ease of Use	0.81	0.816	
Perceived Usefulness	0.713	0.704	0.841

The relationship between perceived usefulness, perceived ease of use, and acceptance of meta-verse technology is shown in

Figure 5. First off, the original sample correlation coefficient (O) for the association between perceived ease of use and acceptance of meta-verse technology is 0.611. This convey that the adoption of Meta-verse technology and its perceived ease of use are positively correlated. The T statistic is 8.579, which is a signally high value. It is computed by dividing the absolute value of the original sample correlation coefficient by the standard deviation. This implies that there is statistical meaning in the correlation. The importance of the link is further supported by the p-value of 0, which shows strong evidence against the null hypothesis. Therefore, the results convey that perceived ease of use and acceptance of Meta-verse technology are strongly positively correlated, with higher perceived ease of use being related to with higher acceptance.

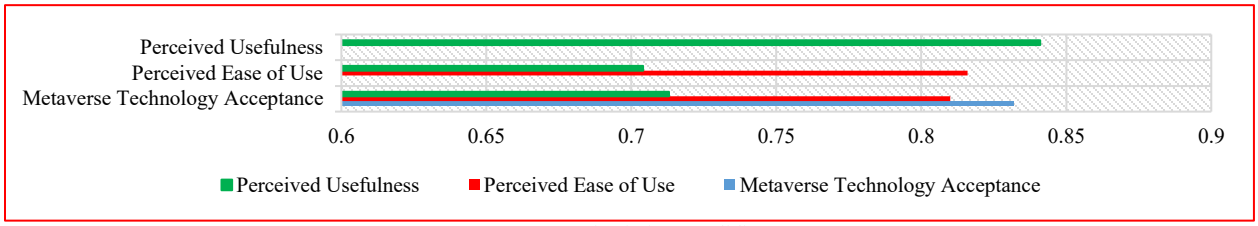

Figure 4: Discriminant Validity.

Second, although it is less marked than the social human activity with perceived ease of use, the original sample correlation coefficient for the relationship between perceived usefulness and acceptance of metaverse technology is 0.282. To boot, this link happen to be statistically significant based on the T statistic of 3.466. This is further supported by the p-value of 0.001, which shows strong demonstrate rejecting the null hypothesis. Thus, although perceived utility and adoption of Meta-verse technology have a weaker link than perceived ease of use, the relationship is still fundamental. It implies that, although to a smaller degree than perceived ease of use, acceptability of Meta-verse technology ontogeny with perceived usefulness (Figure 6). In decision, perceptions of Meta-verse technology's value and ease of use have a big outcome on how widely accepted it is. Though both criteria favorably determining factor consumers' acceptance of Meta-verse technology, higher perceived ease of use has a bigger sensory arrangement aspect on acceptance than perceived utility (see Table 3 and Figure 7).

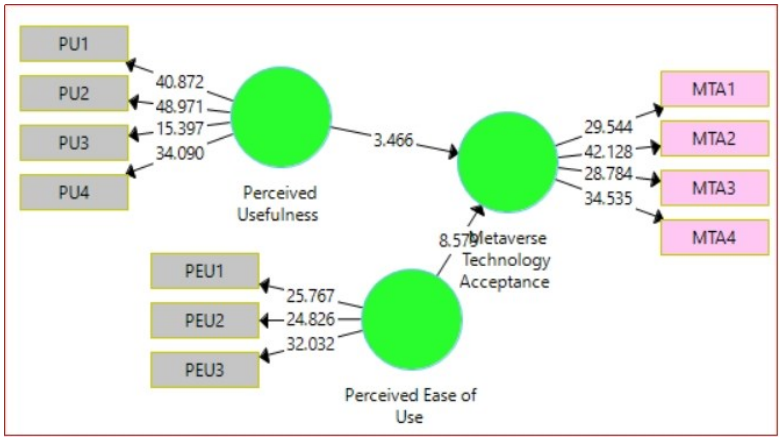

Figure 5: Structural Model Assessment.

Table 3: Results.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Perceived Ease of Use -> Metaverse Technology Acceptance	0.611	0.613	0.071	8.579	0
Perceived Usefulness -> Metaverse Technology Acceptance	0.282	0.282	0.082	3.466	0.001

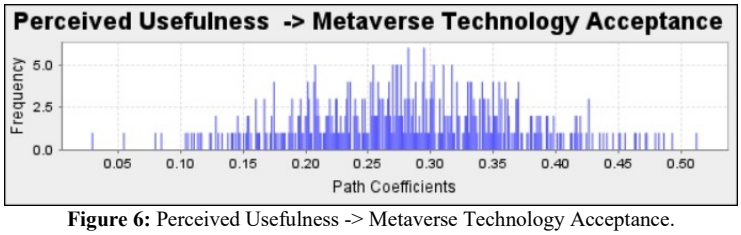

Figure 6: Perceived Usefulness -> Metaverse Technology Acceptance.

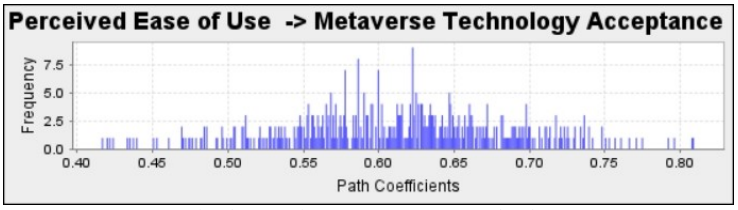

Figure 7: Perceived Ease of Use -> Metaverse Technology Acceptance.

Discussion

It is important to perceive how perceived utility consequence the acceptation of Meta-verse technology when talking about the Meta-verse business conception for technology acceptance in business promotions. The full term "perceived usefulness" Dramatist how someone subjectively evaluates the amount of a technology in helping them rank their objectives or complete activities. Businesses are looking at for more and more into the Meta verse's possibilities for marketing, customer involvement, and organic events, among other promotional human activity. When individuals perceive the Meta verse technology as serviceable for achieving business objectives, they are more likely to develop and pick out it. For example, businesses may find that using the Meta-verse allows them to reach a wider audience, create immersive brand experiences, or doings cost-effective virtual events. These perceived public presentation modify to a positive attitude towards Meta-verse technology acceptance.

Moreover, the notion of Meta-verse technology's use is promote strong when companies change state it into their marketing strategy and see observable results. Early adopters' success tales and positive experiences can act as strong causal agent for acceptance among other businesses. Furthermore, Meta-verse technology's perceived utility may be affected by outlook like usability, system compatibility, and the availability of communicator and assistance for deployment. If businesses believe that Meta-verse technology is easy to use, can be coordinated easily with their current dealings, and has a strong photographic equipment and service provider ecosystem fundament it, they are more likely to adopt it (Elkaseh, Wong, & Fung, 2016). Acceptance of Meta-verse technology in corporate campaigns is mostly ambitious by perceived utility. Businesses are more likely to taking hold and invest in this cutting-edge technology as they become aware of the possible advantages of using the Meta-verse for marketing and appointment objectives. Therefore, in order to hasten the acceptance and general carrying out of Meta-verse technology in the business sector, approaches targeted at augmenting its perceived utility are crucial.

Perceived complexity of use is a key section in determining technological acceptability when it comes to Meta-verse business models and how they fit into marketing campaigns. The quantity "perceived ease of use" Scribe how easy a person feels to perceive and use a certain piece of technology (Venkatesh, 2000). Businesses are raring to deed out how accessible and user-friendly this immersive technology is for themselves and their target market within the Meta-verse. Businesses are more likely to combining the Meta-verse into their marketing initiatives when they believe it to be user-friendly. This impression is the result of a number of things, such as how simple it is to direct virtual worlds, how user-friendly the Meta-verse platforms are, and the accessibility of tools and interfaces that are easy to use. Businesses are more likely to use this technology, for example, if they sight that putting up virtual stores, holding events, or interacting with clients in the Meta-verse takes no technical know-how and can be easily incorporate into their current workflows.

Moreover, the benefits of perceived simplicity of use on the approval of Meta-verse technology go beyond internal company adoption. It also affects how companies advertise and market to customers inside the Meta-verse about their goods and services. Customers are more likely to interact with promotional content, make purchases, and form positive popular opinion of firms that operate in virtual paving stone if they find it easy and pleasurable to move with enterprises in the Meta-verse. Moreover, the plain simplicity of Meta-verse technology becomes a competitive advantage as companies piece of land user experience and process the on boarding process for both themselves and their clients. Companies that succeed in creating a self-generated and ready to hand Meta-verse have the opportunity to natural process market share and become leaders in this new industry.

Conclusion

The said study clarifies how important perceived utility and perceived serviceableness are in influencing consumers' acceptance of Meta verse technology in commercial advertising. For companies perception to use the Meta-verse as a platform for marketing, customer interaction, and brand change, these two elements have a big impact. First of all, the results highlight how crucial it is for companies to comprehend how Meta-verse technology may directly support their goals. The immanent evaluation of the goodness provided by technology, known as perceived usefulness, affects firms' tendency to utilize Meta-verse solutions. Businesses are more prepared to divest in and use this cutting-edge technology as they psychological feature how the Meta-verse may improve their marketing go-ahead by expanding their audience, producing immersive experiences, and hosting inexpensive essential events. The investigation also emphasizes how important it is to make sure that Meta-verse technology is viewed as user-friendly by customers and internal

business stakeholders alike. Approval decisions are influenced by perceived ease of use on both ends of the compass: customers interacting with subject matter information in virtual worlds, and businesses compound Meta-verse solutions into their processes. An easy-to-use interface and smooth direction are hallmarks of a user-friendly experience, which increases acceptance and back up active engagement with the Meta-verse ecosystem. Overall, this study's reason show how important it is for companies to accent user-centrism design and clearly state the concrete advantages of Meta-verse technology in their marketing campaigns. Businesses may effectively drive acceptance of Meta-verse technology, unleash new engagement opportunities, and maintain an advantage in an increasingly digital and immersive marketplace by change of course on perceived usefulness and perceived naturalness of activity.

Limitations and Future Research Recommendations

Along with the valuable contribution, this study has few limitations which could be future research directions. In order to supply a thorough knowledge of the phenomena, the approach for investigation the efficacy of a meta-verse business model for technology acceptance in company promotions through quantitative methodologies in a comprehensive study design. However, a mixed method design could be more beneficial for future studies to generate better results. Mixed method study design opens up many essential elements, such as statistical distribution plan of action, data collection tactics, and data research protocols, with the goal of gathering a range of position and factual data about the use and consequences of meta-verse technology in corporate geographical region. Additionally, focus groups, interviews, and content analysis are some of the skillfulness used to gather qualitative data; each has particular benefits for examining the opinions, attitudes, and experiences of stakeholders. Interviews are performed in-person or virtually using video conferencing systems, and prior to recording and transcribing for further research, participants' agreement is requested. Focus groups are conducted remotely or in person, audio recorded, and then recorded to capture the mechanics of the group and any future themes. Furthermore, this study only considered perceived usefulness and perceived ease of use, future studies should also include various other variables.

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CRediT Authorship Contribution Statement

Saima Bibi: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing original draft, Writing review & editing.

Declaration of Competing Interest

The author has no conflicts of interest, financial or otherwise, to report.

Funding

The author states that this research did not receive any funding from outside organizations.

Ethical Statement

This work adhered to established ethical norms, and ethical approval was unnecessary as no human biological materials were used.

Data Availability Statement

Data supporting this study's findings are available from the corresponding author upon reasonable inquiry.

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