



The Impact of Metaverse on the Quality of Financial Reporting: Evidence from Egypt

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Abstract

The main objective of the current study is to discuss and empirically examine the impact of Metaverse on the quality of financial reporting in the Egyptian environment. Moreover, this study addresses Metaverse as one of the most important technologies that could be used to enhance the financial reporting process. A Field study was conducted on a selected sample of academics, AI assistants, professional accountants, and IT specialists in the Egyptian environment. The questionnaire was sent to 215 respondents while only 200 valid responses were received. The researchers also used a Metaverse platform based on blockchain which is called Spatial.io to immerse respondents in Metaverse experience. The field study concluded that using Metaverse tools has a positive impact on the quality of financial reports by improving the quality of accounting information represented in (relevance, reliability, comparability, and timeliness) of accounting information. The study provides new insights into the association of Metaverse technologies of AI initiatives with various qualitative characteristics of financial information in an emerging country, namely Egypt; and it also provides a foundation for further academic research in the field.

Keywords: Metaverse, Financial Reporting Quality, Fourth Industrial Technologies, Metaverse Layers.

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1. Introduction

Emerging technologies are significantly transforming the daily work of accountants, affecting the professional lives of millions around the world. Therefore, this phenomenon is becoming increasingly evident as technological innovations accelerate. Several factors contribute to these changes, including rapid advancements in technology, globalization, and the ease of communication by using the Internet, along with legislative and regulatory modifications. Until 2010, all information and communication technologies were the most crucial elements, consistently enhancing and reducing time and distance (Kroon, do Céu Alves, & Martins, 2021).

These enhancements have significantly facilitated the sharing of knowledge and ideas, fostering the concept of open innovation (Pazaitis, 2020). Consequently, Managers need to reconsider their approach to creating and profiting from technological innovation. Innovation is crucial for success, and it's important to recognize that emerging technologies come with their challenges. These challenges can be effectively addressed by the concept of open innovation (Skordoulis, Ntanos, Kyriakopoulos, Arabatzis, Galatsidas, & Chalikias, 2020).

The role of auditors is set to evolve with the implementation of the Metaverse. While internal controls will still be maintained, the focus and methods of auditing may change. Accountants have traditionally been receptive to new technologies. However, to fully unlock the radical potential of accounting technologies, there must also be a significant shift in accounting principles and thought processes (Alsartawi & Hussainey, 2024). Emerging technologies have the potential to significantly change and disrupt the work of accountants and accounting researchers. However, simply developing new technologies is not sufficient; there must also be a parallel development of new paradigms that facilitate the understanding of this new data (Moll & Yigitbasioglu, 2019).

Accordingly, professional accountants have responded to these various challenges by developing competency frameworks and reports on future careers in accountancy. These initiatives aim to address the evolving changes in the field, anticipate potential difficulties, and seize new opportunities. The accounting profession must prepare for significant transformations in the coming years due to emerging technologies. While these changes can be disruptive, they also present numerous potential opportunities. The primary concern is how careers in accounting will adapt and how the necessary skills will evolve (Alawadhi & Alrefai, 2024).

2. Research Problem

Nowadays, Metaverse and other industrial revolution technologies, such as blockchain and IoT are essential for accountants and auditors to make an immersive interaction with various transactions occurring in a wide range. Therefore, the existence of virtual assets and related tools like AI, and blockchain technology allows companies to











open unimaginable prospects for business innovation which reflects on financial reporting in firms (AL-Hawamleh, Altarawneh, Hikal, & Elfedawy, 2024); (Alsartawi & Hussainey, 2024).

Accordingly, Metaverse has a great opportunity to transform financial reporting in several ways, and then there a potential consequence that need to be explored. In this context, using Metaverse in financial reporting can lead to multiple negative results and then the overall quality of the financial reporting. On the other side, Metaverse can reduce the risk or potential errors caused by outdated data (Sanad, 2024).

However, financial information under Virtual Reality (VR) can be affected, especially the timeliness and understandability that help the decision-makers enhance their decision-making processes and reflect on the quality of using such financial reporting in VR environments (Shihab & Hashim, 2023).

Therefore, this study aims to examine the impact of Metaverse on the quality of financial reporting based on academic staff and professionals in the Egyptian environment. The main question of this study could be stated as follows: "Is there a positive impact of applying Metaverse technology on the quality of financial reports in the Egyptian environment?"

According to the main question, the following supporting questions can be discussed as follows:

- 1- Would the financial reporting be affected by applying Metaverse technology?
- 2- How do Metaverse platforms impact financial reporting?
- 3- Can Metaverse tools like AI and Blockchain affect financial reporting?
- 4- What is the potential impact of using Metaverse as a digital environment on the quality level of financial reporting in Egypt?

3. Research Objectives

The main purpose of this study is to investigate and discuss the impact of Metaverse on the quality level of financial reporting in the Egyptian environment. This main objective can be achieved by the following sub-objectives:

- 1- Identifying the role of Metaverse platforms in the financial reporting process.
- 2- Investigating the main characteristics and technologies of Metaverse and its impact on financial reporting.
- 3- Analyzing how Metaverse tools can be used in financial reporting.
- 4- Examining the impact of Metaverse on the quality of financial reporting in the Egyptian environment.

4. Research Methodology

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This study used both the deductive and inductive approaches. The deductive approach has been in studying and analyzing the previous studies related to the Metaverse technology and the quality of financial reporting. It is also used to develop theoretical farmwork and to induce the research hypotheses. The inductive approach has been used for implementing the field study to empirically examine the impact of applying the Metaverse technology on the quality of financial reporting in the Egyptian environment. The questionnaire survey has been used to collect the perceptions and opinions of research respondents of the perception investigated research topics. 200 valid questionnaires were collected from academic staff, AI assistants, IT specialists, and accounting professionals from various sectors in the Egyptian environment. SPSS has been used to analyze the collected data and test the research hypotheses.

5. Literature Review

With the rapid advancement of technology in the digital age, the Metaverse is becoming increasingly prominent. This emergence brings with it various issues, including virtual environments, Non-Fungible Tokens (NFTs), Digital Twins (DT), Metaverse commerce, and Cybersecurity. These topics are now becoming relevant in the realms of financial reporting, accounting, and auditing (Al-Sartawi, 2020).

(Egiyi, 2022) aimed to examine the impact of the employed new technologies on improving operations in accounting. The study concluded that the potential of VR and Augmented Reality (AR) technologies in supporting the dynamics of global accounting systems and tackling the big problems provided by unforeseen events and crises in the accounting profession.

(Chukwuani, 2022) examined the uses, applications, and benefits of VR and AR in accounting, along with the potential challenges they present. The study aimed to provide a clearer understanding of how these new technologies impact the field of accounting. It detailed both the advantages and limitations of using VR and AR in this profession.

Similarly, the study of (Al-Gnbri, 2022) aimed to raise questions related to the future of accounting and auditing fields from the perspective of VR technology within the Metaverse environment. It concluded that Metaverse creates new digital assets that require accounting measurements to provide various tools and disclosure methods that are accurate, and also Metaverse has potential effects on planning the audit process.

In the same way, (Nesrine & Mohammed, 2023) described and discussed Metaverse techniques how our future digital environment should look, and the accounting practices in a virtual world. They contributed to the development of literature related to the Metaverse, especially accounting in terms of virtual words. The results show that some new skills will be in demand shortly by using Metaverse in accounting such as technical,











digital, and creative skills and there is a positive effect on reporting accuracy, anomalous detection, and data analysis concerning the accounting profession.

The recent technological breakthroughs in Metaverse are now opening a new page in the accounting profession refocusing on some new perspectives toward accounting practitioners (Nesrine & Mohammed, 2023). Moreover, (Jader, 2023) identified that the accounting guide has been established to assist economic units in navigating business transactions of a new digital nature. This guide serves as a resource for management to help select appropriate accounting policies for digital transactions. It is based on the efforts of international bodies such as the International Accounting Standards Board (IASB).

The study of (AL-Hawamleh, Altarawneh, Hikal, & Elfedawy, 2024) focused on the emerging trend of Metaverses and the potential use of blockchain in the accounting of virtual assets in the digital environment. Metaverse introduces a modern economic pattern in which users can earn real income based on performing virtual activities, which requires efficient and reliable accounting of virtual assets. Blockchain, with its decentralized nature and immutable record, appears to be a viable answer to these problems. The results show that blockchain has the potential to transform the accounting of virtual assets in the metaverse to improve security, transparency, and consistency.

Likewise, (Akin & Akin, 2024) explored the valuation methods, accounting principles, and asset classification systems that are essential for accurate financial reporting in the Metaverse. The unique characteristics of virtual assets in this environment present challenges for traditional valuation methods, necessitating the development of comprehensive and adaptable approaches.

6. Metaverse Theoretical Framework

This section introduces the main components of Metaverse, which includes its definition, requirements, and characteristics.

6.1. Metaverse Definition

Metaverse is not a new concept, it was introduced by Neal Stephenson based on the well-known science fiction novel "Snow Crash" in 1992. Moreover, the term Metaverse was defined by Stephenson as a digital and imaginary world in which users can interact with each other based on their digital avatars (Ritterbusch & Teichmann, 2023); (Sarkar, 2023); (Coutinho, Pereira, Jorge, Marostica, & Santos, 2024).

Accordingly, Metaverse consists of two words which are integrated for formatting the main structure and term of Metaverse that is currently well-known in the various fields related to Information Technology (IT). The first word is "Meta", which refers to the beyond, and the second word is "Verse" which implies world or space. So, the Metaverse











refers to another universe or beyond the universe (Akkus, Gursoy, Dogan, & Demir, 2022); (Cheng, 2023); (Sanad, 2024).

Therefore, there are various definitions of Metaverse illustrated by multiple researchers. In this regard, (Song, Shin, & Shin, 2023) defined the Metaverse as a virtual and parallel digital place that comprises different online interactive experiences, allowing users the ability to participate in modern and different activities and own their digital assets, such as virtual goods and lands. Moreover, Metaverse depends on the various tools for formatting the main structure of this environment. So, (Choi, Azzaoui, Singh, M.M., Jeremiah, & Park, 2022) referred that the Metaverse is an ultimate digital space that can merge the digital world with the physical world based on using Web 3.0, Virtual Reality (VR), Augmented Reality (AR), and Blockchain. (Far, Rad, Bamakan, & Asaar, 2023).

According to the role of industrial revolution tools within Metaverse, (Al-Gnbri, 2022) defined Metaverse as a digital reality world that consists of AR, VR, Blockchain, and various cryptocurrencies to allow participants to interact virtually, and it is the main umbrella which includes a group of main tools integrated for supporting Metaverse. However, Metaverse depends on various platforms such as the Sandbox to enter this world. (Corwen, 2021), defined Metaverse as a multi-user and real-time sandbox, in which people can connect, socialize, and exchange the value among them based on the network with Metaverse. In the accounting field, professional accountants in various sectors can define Metaverse as a virtual world in which users can perform different activities, such as implementing Non-Fungible Tokens (NFT) for accounting (Saerang, Laman, & Hendratno, 2023).

From the previous definitions of Metaverse, there is a definition that can be concluded as shown in figure (1), that the digital world is supported by tools such as VR, AR, and Blockchain for performing financial and non-financial transactions based on using NFTs and cryptocurrencies.



Figure (1) Metaverse: Components, tools, and Transactions

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(Source: The Researchers).

6.2. Metaverse Requirements and Architecture

Metaverse, like any technology, needs to achieve some requirements to ensure that the adoption process can be done efficiently. Therefore, there are important requirements that are very essential for Metaverse implementation. (Rawat & EL Alami, 2023), classified these requirements as follows:

A) Networking and Communication

This requirement is essential for implementing Metaverse. One of these tools that can be used for this feature is an Internet of Things (IoT), which can be adopted to make communications with multiple Metaverse devices, in addition to using resource allocation by making virtualized computation, and resources allocated based on real-time connectivity by using IoT, 5G/6G, and other Software Defined Networks (SDN).

B) Security and Privacy

According to this requirement, it is necessary to achieve because of the various and potential applications of Metaverse in various fields, which can lead to different types of threats and attacks. Furthermore, risk assessment, privacy, and detection of fraud of data must be considered to provide a high level of security of data in the physical and virtual worlds. Therefore, using blockchain and NFTs in this area can help identify digital assets and trace the ownership of these assets. Moreover, the adoption of the decentralization technique, especially in finance which is called (De-Fi) can provide more security for financial and accounting services in Metaverse (Sarkar, 2023); Huynh-The et al., 2023; (Rawat & EL Alami, 2023).

C) Interactive Experience

Metaverse requires to apply VR and AR technologies to provide an immersive experience among users represented in their avatars by using holographic displays, 3D modeling, and Human-Computer Interaction. Using VR can help to immerse oneself in the various virtual worlds, but adopting AR can allow users to get experiences based on the graphics and videos synchrony with the physical world (Choi, Azzaoui, Singh, M.M., Jeremiah, & Park, 2022); (Nesrine & Mohammed, 2023).

D) Digital Twin (DT)

Firstly, DT is a virtual and digital representation of the physical world objects and is to be operated within Metaverse environment. Moreover, DT is not only used for making simulations of physical objects in Metaverse, but it needs to make a combination among various tools such as IoT, extended reality, and cloud computing (Choi, Azzaoui, Singh, M.M., Jeremiah, & Park, 2022); (Far, Rad, Bamakan, & Asaar, 2023).











Therefore, using DT in Metaverse is an essential requirement because it can allow users to analyze the real-time data flow, especially the historical data. Using 3D simulations in Metaverse can help to provide 3D data about objects that will be represented in Metaverse (Rawat & EL Alami, 2023).

E) Artificial Intelligence (AI)

Metaverse can be able to create secure and realistic digital worlds by using AI and make enhancements for communication and networking in addition to the fully controlled user's avatars within Metaverse by making faster computing while allowing a smoother user experience (Choi, Azzaoui, Singh, M.M., Jeremiah, & Park, 2022); (Sarkar, 2023); (Huynh-The, et al., 2023).

6.3. Metaverse Designing Basic Structure Layers

After illustrating the main requirements for implementing Metaverse. Therefore, it is essential to define the architecture of Metaverse because it represents the basic structure of building Metaverse. Accordingly, seven layers of Metaverse are the basic structure of designing Metaverse and these layers will be clarified as follows:

1) Infrastructure

The main component for building Metaverse is the infrastructure layer. It consists of the basic tools that support the various operations in Metaverse, such as Wi-Fi, blockchain, cloud computing, and 5G/6G (Duan, Li, Fan, Lin, Wu, & Cai, 2021); (Rawat & EL Alami, 2023).

2) Human Interface

Another main element of Metaverse is related to the layer of human interface. This component consists of hardware and software that allows end users to interact with digital places in Metaverse by using natural and intuitive methods. Moreover, this layer is important because of its ability to create an immersive experience for users by allowing them to interact with virtual worlds based on their natural senses. There an example of tools such as smart glasses and 3D printers (Far, Rad, Bamakan, & Asaar, 2023).

3) Decentralization

Decentralization is considered the core layer of Metaverse structure. It can refer to the ability of Metaverse to operate decentralized without any specific platform, and the network structure of Metaverse is decentralized. This layer can provide multiple tools based on decentralized techniques, such as blockchain and peer-to-peer networks to make secure about each transaction occurred in Metaverse (Far, Rad, Bamakan, & Asaar, 2023); (Cheng, 2023).

4) Spatial Computing











It is used for switching between Metaverse and the physical world. Furthermore, this layer allows users to enter and create virtual and digital 3D spaces, in addition to its ability to integrate data from sensors and user interfaces for creating an immersive experience (Cheng, 2023).

5) Creator Economy

It consists of all the needed elements to realize the look of Metaverse. So, creators in this layer mean all tools and also platforms that can be used to create and publish all content in Metaverse. This layer refers to the variety of platforms that can be used in various digital places which can reflect on the development of cryptocurrencies (Duan, Li, Fan, Lin, Wu, & Cai, 2021); (Far, Rad, Bamakan, & Asaar, 2023).

6) Discovery

This layer focuses on allowing creators within Metaverse to build the economic ecology and users can have the ability to get profits within this layer by depending on advertising. However, this layer refers to the content creation and social discovery. (Far, Rad, Bamakan, & Asaar, 2023); (Cheng, 2023).



Figure (2) Metaverse Layers (Source: The Researchers).

7) Experience

According to (Cheng, 2023), this layer is not only related to immersion in 3D spaces; but it can map all aspects of human life within the digital places in Metaverse. To achieve the user experience in Metaverse, Metaverse needs to receive data from the real world and users can control their avatars, by adopting VR/AR (Duan, Li, Fan, Lin, Wu, & Cai, 2021).

6.4. Metaverse and Accounting Field

Metaverse has its virtual economy based on the scarcity of its digital resources like resources within the physical world. Therefore, Metaverse will need to apply

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the accounting field for its transactions, because Metaverse has its economy which represents NFTs. Accordingly, accounting is necessary to be performed in Metaverse, especially in protecting the virtual inputs of accounting data to be processed for generating financial reports quality (Al-Gnbri, 2022); (Akin & Akin, 2024).

6.4.1. Importance Role of Accounting for Digital Assets in Metaverse

Firstly, accounting for digital assets within Metaverse is important for performing accurate financial reporting to be more compliant and also transparent. Moreover, accounting will play a significant role in handling the value evaluation of digital assets in Metaverse (Huynh-The, et al., 2023).

Accounting procedures, especially for digital assets can be done in more efficient ways remotely without any direct contact with outsourcing, unlike the real world (Nesrine & Mohammed, 2023).

According to (Deloitte, 2022), it was illustrated that the existence of digital assets and NFTs will lead to using Accounting Standard Codification (ASC) 606 as the main guidance for recognizing revenues of selling NFTs in Metaverse.

Moreover, it is essential for using accounting in the process of NTF recognition; because using accounting helps the user to determine the estimation of NFT values by using variable methods, such as initial value based on the past identification of costs (Muravskyi, Denchuk, & Reveha, 2022).

In June 2019, the International Financial Reporting Standards (IFRS) Interpretation Committee published a decision that clarifies the appropriate accounting treatment of cryptocurrencies under IFRS. It concludes that IAS 38 Intangible assets must account for cryptocurrencies unless they are also held for sale in the ordinary course of business, in which case IAS 2 Inventories applies (IFRS, 2019).



Figure (3): The Mechanism of Performing Accounting Stages (Jader, 2023).











According to the previous figure, the work form was used to perform accounting tasks, starting with the stage of identifying the economic transaction of the digital economy and accounting for the deferred process of income and related expenses. This includes the revaluation or the calculation of the fair value by the accounting rules. (Kim, Crowley, Park, & Karnick, 2022).

6.4.2. Metaverse Tools for Enhancing the Accounting Practices

Metaverse to be operated needs to have advanced technological tools, such as Blockchain, VR, AR, IoT, and Machine Learning for performing the process of accounting practices within digital worlds. Therefore, these tools will play an important role in enhancing all accounting practices and also accounting information (Ayad, El Mezouari, & Kharmoum, 2023); Hikal et al., 2024; (Alawadhi & Alrefai, 2024). These tools can be illustrated as follows:

6.4.2.1. Blockchain

Metaverse depends on blockchain technology to ensure privacy and integrity to account for all digital transactions that occur. Moreover, accounting will need to adopt blockchain and smart contracts to ensure the transparency and communication of financial information. Accountants within Metaverse and the huge number of transactions will lead them to ensure the authenticity of documents based on using smart contracts. Then, accounting practices will be different from the traditional practices. One of these examples is using triple-entry accounting to provide efficiency and also transparency for financial transactions that occurred within Metaverse (Alawadhi & Alrefai, 2024).

According to financial reporting, blockchain technology plays a role in increasing the accuracy and integrity of financial reporting, and all users represented in entities may guarantee that their financial data is up-to-date and more accurate (AL-Hawamleh, Altarawneh, Hikal, & Elfedawy, 2024).

6.4.2.2. VR and AR

Firstly, VR and AR can be used in the field of accounting by preparing financial statements. AR can improve the productivity of accountants by helping them to use 2D and 3D formats for visualizing accounting data (Chukwuani, 2022). Using VR and AR can help accountants to make a smooth connection among them to present and discuss accounting tasks in real-time providing a high level of flexibility in financial statements development. Both technologies can help accountants evaluate the data through voice instructions or virtual meetings (Alawadhi & Alrefai, 2024).

VR impacts the quality of financial information in several aspects. One of these aspects is the ability of VR to confirm the information that has been predicted to get more relevant information. Moreover, VR can lead to providing information for all users, and











information is provided without any manipulation or deletion of its content (Hashim & Shihab, 2022).

6.4.2.3. IoT

IoT can help to provide more transparency of accounting information. It can be used to enhance the quality of accounting information based on improving the completeness, timeliness, and cost-benefit of accounting information (Wu, Xiong, & Li, 2019). Moreover, IoT helps accounting systems to make all transactions recorded and processed automatically because the traditional entering process of the accounting input data will be replaced by sensor devices with the ability to collect and process accounting information in real-time without any human interaction (Karmanska, 2021).

6.4.2.4. Machine Learning (ML)



Figure (4): Metaverse Integrated Tools (Source: The Researchers).

Machine Learning is a subset of AI that allows computer devices to make accurate predictions based on all past and current experiences. Then, ML can improve accounting information in both reliability and relevance. ML can be used to detect financial statement fraud based on determining the changes between account balances. On the other hand, the relevance of accounting information is affected by ML. Using ML can help accounting systems and their users predict the failure of entities by providing more relevant information for decision-making (Ayad, El Mezouari, & Kharmoum, 2023).

6.5. The Quality of Financial Reporting within Metaverse

Presenting financial statements in a way that users of financial information can understand is the focus of financial reporting (Nwanyanwu, 2013). In essence, it is a method of disseminating financial data and serves as a tool for recognizable management.











An essential service that is so unique that the accounting profession extends to the economic and social systems of societies is financial reporting, which serves as a means for disseminating information about the financial affairs of both commercial and non-profit organizations (Oladejo, Yinus, Shittu, & Rutaro, 2021).

Financial reporting quality refers to more complete, unbiased, and error-free reports that provide more useful predictive or confirmatory information about underlying economic conditions, events, and company performance. Providing high-quality financial intelligence is important because it will positively influence capital providers and other actors in their investment, credit, and similar resource allocation decisions. So, it is improving the overall efficiency of the market (Shuraki, Pourheidari, & Azizkhani, 2021).

Using the Metaverse in financial reporting represents a transformative advance for organizations communicating their financial performance. By extracting insights from unstructured data, simplifying the reporting processes, accelerating reporting times, and increasing the communicative value of financial information, financial reporting based on natural language processing is gaining momentum with the demands of the modern business landscape (Vuong & Mai, 2023).

6.6 Limitations and Opportunities of the Financial Reporting Quality within Metaverse

There is no need for companies to open virtual branches for themselves in the Metaverse world, they can only use Metaverse or some kind of virtual reality as a communication tool that allows them to see their data, information, and reports that are produced physically in a better and more attractive way.

This perception was based on what was mentioned by one of the researchers that virtual reality and its capabilities can serve as a promising ground for accountants to improve financial reporting (Maad, Garbaya, McCarthy, Beynon, Bouakaz, & Nagarajan, 2010). The Financial Reporting Council (FRC) issued a report indicating that companies may have the opportunity to present their reports featuring a schedule of events. This report suggests that companies could use virtual reality capabilities, such as 3D video, to display their annual events.

FRC found that the current usage of VR in corporate relations is still limited and in an experimental phase, but it is expected that technologies will have a place in corporate relations (even for a long time), and must appear in the accounting profession. In the same vein, it has to be noted that the subsequent elements want to be taken under consideration whilst companies use the virtual reality era to create economic reviews inside the Metaverse. These elements can also additionally offer problems for the accounting industry as follows (Financial Reporting Council, 2021):

1) The nature of financial reporting contents: The traditional nature of the annual financial reports involves various and multiple types of detailed financial statements









and descriptive paragraphs about the business modes, and this combination and integration of such content may be difficult to translate into an effective VR experience.

2) The risk of ignoring: There are various stakeholders who gain from the information in financial reports, particularly analysts and investors, who concentrate on in-depth examinations of numerous businesses.

7. The Field Study

According to the rapid development of digital technology, all sectors of society can accelerate their entry into the digital world, thus decreasing barriers between the physical and digital worlds and fostering a metaverse. The more financial opportunities the metaverse offers its members, the more choices they have. If you are a visitor or a business that has invested in the metaverse to sell your products, there are multiple ways to generate money.

7.1 Research Sample

The study sample consisted of a sample of IT specialists, AI assistants, and accountants in accounting firms, in addition to professors of accounting information systems at Egyptian universities. The survey list was used as a tool for collecting data.

7.2 Research Variables and Research Model

The independent variable of this study is using of Metaverse in the Egyptian environment. The dependent variable is the quality of financial reports. The quality of financial reports was measured using the quality of accounting information (Relevance, reliability, understandability, timeliness) as illustrated in the research model (Figure: 5)













Figure (5): Research Model

7.3 Research Hypotheses

The main research hypothesis of this research could be stated as follows:

H₁: There is a significant positive impact of using Metaverse technologies on enhancing the quality of financial reports in the Egyptian Environment.

The main research hypothesis could be divided into the following research subhypotheses:

- **H**₁₂: There is a significant positive impact of using Metaverse technologies on the relevance of accounting information in the Egyptian Environment.
- **H**₁₃: There is a significant positive impact of using Metaverse technologies on the reliability of accounting information in the Egyptian Environment.
- **H**₁₄: There is a significant positive impact of using Metaverse technologies on the understandability of accounting information in the Egyptian Environment.
- **H**₁₅: There is a significant positive impact of using Metaverse technologies on the timeliness of accounting information in the Egyptian Environment.

7.4 Metaverse Platform used within this Study:

Figure (6) illustrates respondents in the Spatial.io platform within the Metaverse field study developed by the researchers.



Figure (6): Respondents in Spatial.io Platform (Resource: The Researchers).

7.5 Descriptive Statistics











This section aims to provide a descriptive analysis of the research variables, the descriptive analysis helps to determine answers directions, and perceptions about all variables, we can organize it as follows:

7.5.1 Descriptive Statistics of the Study Sample

A descriptive statistical analysis was conducted for the study community and the results of the analysis were as follows:

		English	Doncont	Valid	Cumulative	
		riequency	reicent	Percent	Percent	
	IT Specialist	40	20	20	20	
	Academic Staff	33	16.5	16.5	36.5	
	Financial	27	13.5	13.5	50	
What is your job title	Accountant	27	10.0	13.5	50	
	Auditor	94	47	47	97	
	Chatbots	6	3	3	100.0	
	Total	200	100.0	100.0		
	Less than 5	70	35	36	36	
	years	70	35	50	50	
	From 5 to 10 55 27		27.5	28.3	64.3	
	Years	55	27.5	20.5	04.5	
Years of Experience	From 10 to 15	69	34.5	35.7	100.0	
	year	09	54.5	33.7	100.0	
	Total	194	97	100.0		
	Missing	6	3			
	Total	200	100.0			
	Very Familiar	144	72	74.2	74.2	
	Somewhat	50	25	25.9	100.0	
Familiarity with the	Familiar	50	23	25.8	100.0	
Concept of Metaverse	Total	194	97	100.0		
	Missing	6	3			
	System	200	100.0			
Experience in Using	Yes	122	61	62.9	62.9	
Virtual Reality or	No	72	36	37.1	100.0	
Augmented Reality	Total	194	97	100.0		
Technologies in Your	Missing	6	3			
Work	System	200	100.0			

Table (1) Descriptive of the Study Sample











7.5.2 Descriptive Statistics of the Study of Variables

Descriptive statistical analysis of the study variables was conducted to understand the role and importance of each variable. This can be shown as follows:

Table (2) Descriptive Statistics Results for The Role of Metaverse Tools in Financial Reporting

	N	Mean	Mode	Std.	Variance
				Deviation	
• Blockchain and IoT are essential for the	200	4.0577	4.00	.46075	.212
accuracy of financial reporting					
• Using VR and AR in accounting	200	4.0769	4.00	.55470	.308
operations can help in the process of					
preparing financial reporting					
• Accountants can deal with Machine	200	4.0192	4.00	.69987	.490
Learning for preparing and					
summarizing financial reports					
• IoT devices are essential for networking	200	4.0000	4.00	.76696	.588
among huge accounting data					
• Using Metaverse platforms will help	200	4.2308	4.00	.61406	.377
the accounting profession to make					
several tasks like financial reporting					
• The management can support the	200	4.0962	4.00	.66449	.442
process of using Metaverse in financial					
reporting					
• Metaverse decreases the cost of storing	200	3.9808	4.00	.61006	.372
financial information by making digital					
and visualizing reports					
• Remote working within Metaverse can	200	4.0385	4.00	.65564	.430
decrease the time for making digital					
financial reports					
• Metaverse has the ability to access all	200	4.0962	4.00	.63430	.402
digital financial reports in easy ways					

The table results showed that the maximum mean value for The Role of Metaverse Tools in Financial Reporting Represented in "Using Metaverse platforms will help the accounting profession to make several tasks like financial reporting" (4.2308) at a standard deviation (.61406) and the minimum mean value Represented in "Metaverse decreases the cost of storing financial information by making digital and visualizing reports" (3.9808) the at a standard deviation (0.61006).

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7.5.3 Descriptive Statistics Results for Relevance and Reliability

Table (2) Deceminations	Clatickies Desults for	Dolorrow co and Dolio	hility of Matazona
Table (5) Describute	Statistics Results for	Relevance and Relia	DITILY OF IVIELAVEISE

		Ν			Std.	
		Valid	Mean	Mode	Deviation	Variance
•	The Relevance level of accounting information is positively affected by using Metaverse	200	4.1538	4.00	.53814	.290
•	The information provided by the metaverse is more relevant to my needs as an accountant or IT specialist	200	3.9615	4.00	.52250	.273
•	Using Metaverse enhances the Relevance of accounting information and increase the quality of financial reporting	200	4.1346	4.00	.59504	.354
•	Metaverse as an accounting environment increases the level of reliability of financial reports	200	4.0577	4.00	.60758	.369
•	Using Metaverse can lead to decreasing the error and fraud in accounting information	200	3.9808	4.00	.64140	.411
•	The Relevance and reliability of information in the metaverse will be improved in the next 5-10 years	200	3.9615	4.00	.73994	.548
•	Increasing the Relevance of financial reporting will increase the quality of decision-making	200	4.2692	4.00	.62983	.397

The table results showed that the maximum mean value for Relevance and Reliability of Information under Metaverse Represented in "Increasing the Relevance of financial reporting will increase the quality of decision-making" (4.2692) at a standard deviation (.62983) and the minimum mean value Represented in "The information provided by the Metaverse is more relevant to my needs as an accountant or IT specialist" (3.9615) at a standard deviation (0.52250), In addition to "The Relevance and reliability of the information in the Metaverse will be improved in the next 5-10 years" (3.9615)) at a standard deviation(0.73994).

7.5.4 Descriptive for Financial Reporting and Decision-Making based on Metaverse

The descriptive statistics of the results (Table 4) showed that the maximum mean value for Financial Reporting and Decision-Making based on the Metaverse Represented in "The Metaverse will become an essential part of financial decision-making" (4.3462) at a standard deviation (0.86057) and the minimum mean value represented in the "Metaverse will improve the efficiency of financial decision-making processes" (3.9615) the at a standard deviation (0.62502).











Table (4) Descriptive Statistics Results for Financial Reporting and Decision-Making based on Metaverse

	Ν			Std.	
	Valid	Mean	Mode	Deviation	Variance
Preparing financial reports based on					
Metaverse tools can decrease the uncertainty	200	4.1154	4.00	.37853	.143
level of decision-maker					
• Financial reports generated by tools like					
Machine Learning and VR lead to developing	200	1 0962	4.00	63/30	402
the performance of management for making	200	4.0902	4.00	.05450	.402
decisions in the future					
• Financial reports based on Metaverse tools					
help decision-makers to get relevant	200	4.1538	4.00	.63815	.407
decisions by making accurate data analysis					
• The Metaverse will provide better data for	200	4 0577	4.00	60758	360
financial decision-making	200	4.0077	4.00	.00750	.509
• The Metaverse will improve the efficiency of	200	3 0615	4.00	62502	301
financial decision-making processes	200	5.9015	4.00	.02302	.391
• The Metaverse will become an essential part	200	1 3462	5.00	86057	7/1
of financial decision-making	200	4.5402	5.00	.00057	./41

7.5.5 Descriptive for Opportunities of the Financial Reporting Process in Metaverse

The descriptive statistics of the results (Table 5) revealed that the maximum mean value for Opportunities of the Financial Reporting Industry in Metaverse that is represented in "Using Metaverse can increase the accuracy and reliability of information for external users" (4.2115) at a standard deviation (0.53638) and the minimum mean value Represented in "The implementation of the Metaverse in financial reporting is cost-effective" (3.8269) the at a standard deviation (0.67798).

Table (5) Descriptive Statistics Results for Opportunities of the Financial Reporting Process in Metaverse

		Ν			Std.	
			Mean	Mode	Deviation	Variance
•	The Metaverse presents new opportunities for the financial reporting	200	4.1154	4.00	.54786	.300
•	The Metaverse can improve the transparency of the financial reporting	200	4.1154	4.00	.47087	.222











		Ν	Mean	Mode	Std.	Variance
•	The 3D Visualization of financial reports impacts the Relevance and reliability of financial information	200	4.0962	4.00	.66449	.442
•	Using Metaverse can increase the accuracy and reliability of information for external users	200	4.2115	4.00	.53638	.288
•	Automation and AI within the Metaverse can streamline the financial reporting processes, reducing manual errors and increasing efficiency	200	4.0192	4.00	.75382	.568
•	The immersive nature of Metaverse allows for more engaging and interactive customer experiences with 3D financial reports	200	4.0577	4.00	.60758	.369
•	The implementation of the Metaverse in financial reporting is cost-effective	200	3.8269	4.00	.67798	.460

7.5.6 Descriptive for Challenges of the Financial Reporting Process in Metaverse

The descriptive statistics of the results (Table 6) showed that the higher mean value for challenges of the financial reporting industry in Metaverse represented in "IT skills are essential for dealing with privacy issues within Metaverse (4.3269) at a standard deviation" (0.58481) and the minimum mean value Represented in "The complexity of the Metaverse might reduce the reliability of financial reporting" (3.5577) at a standard deviation (0.84976).

Table (6) Descriptive Statistics Results Challenges of the Financial Reporting Process in Metaverse

					Std.	
		Ν	Mean	Mode	Deviation	Variance
•	IT skills are essential for dealing with	200	4 3269	4 00	58481	342
	privacy issues within Metaverse	200	1.0207	1.00	.00101	.012
•	The current financial regulations are not					
	suitable for transactions performed	200	4.0385	4.00	.68489	.469
	within Metaverse					
•	Users find the Metaverse difficult to	200	3 7115	4.00	7/981	562
	understand and use	200	5.7115	4.00	.7 4701	.502
•	The complexity of the Metaverse might					
	reduce the reliability of financial	200	3.5577	4.00	.84976	.722
	reporting					

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•	Ensuring data privacy in the Metaverse is challenging	200	3.9231	4.00	.70977	.504
•	Standardized methods and platforms for integrating Metaverse into financial reporting are lacking	200	4.0000	4.00	.79212	.627

7.6. Normal Distribution Test

The normal distribution test aims to determine whether the data of the study variables follow the normal distribution or not. If the data follow the normal distribution, parametric tests are relied upon to test the hypotheses. If the data do not follow the normal distribution, non-parametric tests are relied upon.

This test can be performed using the Kolmogorov-Smirnov method, which is a test whose results are interpreted by focusing on statistical significance, where the null hypothesis is "the data do not follow the normal distribution", and it is accepted if the significance value is less than (5%), while it is rejected if the significance value is greater than (5%). This test was performed, and the results were as shown in the table (7).

		Normal l	Parameters ^{a,b}	Most Extreme Differences				
		-	Std.				Test	Asymp. Sig.
	Ν	Mean	Deviation	Absolute	Positive	Negative	Statistic	(2-tailed)
X1	200	4.0662	.31830	.148	.098	148-	.148	.006c
X2	200	4.0742	.32563	.122	.081	122-	.122	.005 ^c
Х3	200	4.1218	.33515	.149	.129	149-	.149	.005 ^c
X4	200	4.0632	.32058	.155	.155	133-	.155	.003c
Y	200	4.0502	.23556	.093	.093	082-	.093	.020 ^{c,d}

Table (7) Results of the Normal Distribution Test

The results showed that all study variables do not follow the normal distribution, as the significance level for all variables reached a level of less than (5%); therefore, the null hypothesis can be accepted and the alternative hypothesis can be rejected, that the data does not follow the normal distribution, which indicates the possibility of testing the study hypotheses with nonparametric tests.

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7.7. Correlation Matrix

This section deals with presenting the results of the correlation matrix for the relationship between the different study variables. The results can be presented in the following table:

Results of the correlation matrix showed that the correlation coefficient between the independent variable (use of metaverse technologies) and the dependent variable (relevance of accounting information) (74.5%) at a significance level of less than (5%). Moreover, the correlation coefficient between the independent variable (use of Metaverse technologies) and the dependent variable (reliability of accounting information) (78.2%) at a significance level of less than (5%).

			X1	X2	X3	X4	Y
	X1	Correlation Coefficient	1.000				
		Sig. (2-tailed)					
		Ν	200				
	X2	Correlation Coefficient	.582**	1.000			
•		Sig. (2-tailed)	.000				
rhc		Ν	200	200			
n's	X3	Correlation Coefficient	.538**	.553**	1.000		
ma		Sig. (2-tailed)	.000	.000			
ear		Ν	200	200	200		
$\mathbf{S}\mathbf{p}$	X4	Correlation Coefficient	.307*	.336*	.325*	1.000	
		Sig. (2-tailed)	.027	.015	.019		
		Ν	200	200	200	200	
	Y	Correlation Coefficient	.745**	.782**	.721**	.539**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	•
		N	200	200	200	200	200

Table (8) Results of the Correlation Matrix

Also, the correlation coefficient between the independent variable (use of Metaverse technologies) and the dependent variable (understandability of accounting information) (72.1%) at a significance level of less than (5%). Additionally, the correlation coefficient between the independent variable (use of Metaverse technologies) and the dependent variable (timeliness of accounting information) (53.9%) at a significance level of less than (5%).

7.8. Regression Test

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This section deals with presenting the results of the regression test for the study variables to test the study hypotheses.

A) First Sub-hypothesis

There is a significant positive impact of using Metaverse technologies on the relevance of accounting information.

		Model
	1	
ŀ	.760	
R Sq	uare	.578
Adjusted	R Square	.569
Std. Error of	.15463	
Change Statistics	R Square Change	.578
	F Change	68.363
	df1	1
	50	
	.000	
Durbin-	Watson	2.416

Table (9) Results of the First Sub-hypothesis

According to the results of the First sub-hypothesis, the correlation coefficient (R) indicates the existence of a direct correlation, and the value of the correlation coefficient (0.760), between the use of Metaverse technologies as an independent variable and the relevance of accounting information (as a dependent variable). Also, the coefficient of determination (R²) indicates the existence of an effect of the independent variable on the dependent variable (.578), indicating that the use of metaverse technologies explains (57.8%) of any change in the relevance of accounting information. Moreover, the value of (Durbin-Watson) (2.416), which is less than (4), indicates the accuracy of the regression model and the selection of linear correlation problems.

B) Second Sub-hypothesis

There is a significant positive impact of using Metaverse technologies on the reliability of accounting information.

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According to the results of the Second sub-hypothesis, the correlation coefficient (R) indicates the existence of a direct correlation, and the value of the correlation coefficient (0.739), between the use of Metaverse technologies (as an independent variable) and the reliability of accounting information (as a dependent variable).

	Model 2
R	.739ª
R Square	.547
Adjusted R Square	.538
Std. Error of the Estimate	.16019
Change Statistics	.547
R Square Change	60.278
F Change	1
df1	50
df2	.000
Sig. F Change	1.797
Durbin-Watson	2.512

Table (10) Results of the Second Sub-hypothesis

Furthermore, the coefficient of determination (R²) indicates the existence of an effect of the independent variable on the dependent variable (.547), indicating that the use of Metaverse technologies explains (54.7%) of any change in the relevance of accounting information. As well as the value of (Durbin-Watson) reached (1.797), which is less than (4), indicating the accuracy of the regression model and the selection of linear correlation problems.

C) The Third Sub-hypothesis

There is a significant positive impact of using Metaverse technologies on the understandability of accounting information. According to the results of the third subhypothesis, the correlation coefficient (R) indicates the existence of a direct correlation, and the value of the correlation coefficient (0.715), between the use of Metaverse technologies (as an independent variable) and the understandability of accounting information (as a dependent variable).

Table (10) Results of the Third	Sub-hypothesis
---------------------------------	----------------

	Model 3		
R	.715ª		
R Square	.512		











Adjusted R Square .502	
Std. Error of the Estimate	.16621
Change Statistics	.512
R Square Change	52.445
F Change	1
df1	50
df2	.000
Sig. F Change	1.701
Durbin-Watson	2.870

Moreover, the coefficient of determination (R²) indicates the existence of an effect of the independent variable on the dependent variable (.512), indicating that the use of Metaverse technologies explains (51.2%) of any change in the relevance of accounting information. along with, the value of (Durbin-Watson) reached (1.701), which is less than (4), which indicates the accuracy of the regression model and the selection of linear correlation problems.

D) Fourth Sub- hypothesis

There is a significant positive impact of using Metaverse technologies on the timeliness of accounting information. According to results of the fourth sub-hypothesis, the correlation coefficient (R) indicates the existence of a direct correlation, and the value of the correlation coefficient (641), between the use of Metaverse technologies (as an independent variable) and the timeliness of accounting information (as a dependent variable). Besides, the coefficient of determination (R2) indicates the existence of an effect of the independent variable on the dependent variable (0.411), indicates that the use of Metaverse technologies explains (41.4%) of any change in the relevance of accounting information, in addition to this, the value of (Durbin-Watson) reached (2.024), which is less than (4), indicates the accuracy of the regression model and the selection of linear correlation problems.

Table (11) Results of the Fourth Sub-hypothesis

	Model 4
R	.641ª
R Square	.411

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Adjusted R Square	.399
Std. Error of the Estimate	.18261
Change Statistics	.411
R Square Change	34.870
F Change	1
df1	50
df2	.000
Sig. F Change	2.024

E) Main Hypothesis

There is a significant positive impact of using Metaverse technologies on the quality of financial reports. "Human Responses"

Table (12) Results of the M	lain Hypothesis acc	cording to "Huma	n Responses"

	Model 5
R	.811ª
R Square	.657
Adjusted R Square	.615
Std. Error of the Estimate	.17558
Change Statistics	.657
R Square Change	15.356
F Change	5
df1	40
df2	.000
Sig. F Change	1.981

Results of the Main Hypothesis according to "Human responses" showed that the correlation coefficient (R) indicates the existence of a direct correlation, and the value of the correlation coefficient (.811), between the use of Metaverse technologies (as an independent variable) and the quality of financial reports (as a dependent variable).

Also, the coefficient of determination (R^2) indicates the existence of an effect of the independent variable on the dependent variable (.657), indicating that the use of Metaverse technologies explains (65.7%) of any change in the relevance of accounting

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information. The value of (Durbin-Watson) reached (1.981), which is less than (4), which indicates the accuracy of the regression model and the selection of linear correlation problems.

F) Main Hypothesis

There is a significant positive impact of using Metaverse technologies on the quality of financial reports. "Human and Machine Responses"

Table (13) Results of the Main Hypothesis according to "Human and Machine Responses"

	Model 6
R	.900ª
R Square	.820
Adjusted R Square	.800
Std. Error of the Estimate	.01201
Change Statistics	.920
R Square Change	39.664
F Change	5
df1	46
df2	.000
Sig. F Change	2.015

Results of the Main Hypothesis according to "Human and Machine Responses" showed that the correlation coefficient (R) indicates the existence of a direct correlation, and the value of the correlation coefficient (.900), between the use of Metaverse technologies (as an independent variable) and the quality of financial reports (as a dependent variable). Additionally, the coefficient of determination (R²) indicates the existence of an effect of the independent variable on the dependent variable (.820), indicating that the use of Metaverse technologies explains (82%) of any change in the relevance of accounting information. The value of (Durbin-Watson) reached (2.015), which is less than (4), which indicates the accuracy of the regression model and the selection of linear correlation problems.

7.9 Mann-Whitney U Test

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This section deals with presenting the results of the test of the significant differences between the study categories regarding the study variables. This section can be organized as follows:

A) Mann-Whitney Test of the Quality of Financial Reporting

The test of significant differences was conducted for the study sample on the quality of financial reporting, the results are as illustrated in Table 14.

Results of the Mann–Whitney test for financial reporting quality showed that there are no significant differences between human and Machine responses regarding the impact of using Metaverse technology on the relevance, reliability, and ability to understandability of accounting information, at the significance level greater than 5%. However, there are significant differences between human and Machine responses regarding the impact of using Metaverse technology on the timeliness of accounting information, at a significance of less than 5%.

	Relevance	Reliability	Understandability	Timeliness	
Mann-Whitney U	95.500	121.000	76.000	68.000	
Wilcoxon W	1176.500	1202.000	1157.000	1149.000	
Z	-1.228-	492-	-1.810-	-2.041-	
Asymp. Sig. (2-tailed)	.219	.623	.070	.041	
Exact Sig. [2*(1-tailed	.230b	.645 ^b	.078 ^b	.045 ^b	
Sig.)]					
	G	N	Mean Rank	Sum of	
				Ranks	
Relevance	Human	194	25.58	1176.50	
	Machine	6	33.58	201.50	
	Total	200			
Reliability	Human	194	26.13	1202.00	
	Machine	6	29.33	176.00	
	Total	200			
Understandability	Human	194	25.15	1157.00	
	Machine	6	36.83	221.00	
	Total	200			
Timeliness	Human	194	24.98	1149.00	
	Machine	6	38.17	229.00	
	Total	200			

Table (14) Mann-Whitney test for Financial Reporting Quality

B) Mann-Whitney test of the Using of Metaverse Technologies











The test of significant differences was conducted for the study sample using Metaverse technologies, and the results are as follows:

					Y	
Mann-Whitney U				72.000		
Wilcoxon W				1153.000		
Z				-1.891-		
Asymp. Sig. (2-tailed)			.059			
Exact Sig. [2*(1-tailed Sig.)]			.059			
	G N Mean R		ank	Sum of Ranks		
Using of Metaverse	Human	194	25.07		1153.00	
	Machine	6	37.50		225.00	
	Total	200				

Table (15) Mann-Whitney test of Using Metaverse technologies

Results of the Mann–Whitney test of Using Metaverse technologies showed that there are significant differences between human and Machine responses regarding the impact of using Metaverse technology on the quality of financial reporting, at a significance of less than 5%.

8. Research Findings

- 1) The results showed that there is a relationship between the use of Metaverse technologies and the relevance of accounting information. The value of the correlation coefficient (R) reached (0.760), which is a positive correlation at a significance level of (5%), and the value of the coefficient of determination (R²) reached (0.578). Therefore, the first sub-hypothesis can be accepted, which states that there is a statistically significant positive impact of Metaverse technologies on the relevance of accounting information.
- 2) The results showed that there is a relationship between the use of Metaverse technologies and the reliability of accounting information. The value of the correlation coefficient (R) reached (0.739), which is a positive correlation at a significance level of (5%), and the value of the coefficient of determination (R²) reached (0.538). Therefore, the second subhypothesis can be accepted, which states that there is a statistically significant positive impact of using Metaverse technologies on the reliability of accounting information.
- 3) The results showed that there is a relationship between the use of Metaverse technologies and the understandability of accounting information. The value of the correlation coefficient (R) reached (0.715), which is a positive correlation at a significance level of (5%), and the value of the coefficient of determination (R²) reached (0.512). Therefore, the third sub-hypothesis can be accepted, which states that there is a statistically significant positive











impact of using Metaverse technologies on the understandability of accounting information.

- 4) The results showed that there is a relationship between the use of Metaverse technologies and the timeliness of accounting information. The value of the correlation coefficient (R) reached (0.641), which is a positive correlation at a significance level of (5%), and the value of the coefficient of determination (R²) reached (0.411). Therefore, the fourth subhypothesis can be accepted, which states that there is a statistically significant positive impact of using Metaverse technologies on the timeliness of accounting information.
- 5) The results showed that there is a relationship between the use of Metaverse technologies and the quality of financial reporting. The value of the correlation coefficient (R) reached (0.900), which is a positive correlation at a significance level of (5%), and the value of the coefficient of determination (R²) reached (0.820). Therefore, the main hypothesis can be accepted, which states that there is a statistically significant positive impact of using Metaverse technologies on the quality of financial reporting.

9. Research Recommendations

According to the statistical analysis results, the study recommends that:

- 1- Accounting users whether professional accountants or IT specialists who are related to the accounting field should be equipped with using Metaverse in their tasks to enhance the accuracy and relevancy of the accounting information.
- 2- The accounting staff in the Egyptian environment should be involved and immersed within the Metaverse environment to provide the most useful accounting information in the required time for decision-making.
- 3- Financial reporting in the Egyptian environment should be performed by using Metaverse technologies to enhance the quality level of accounting information.
- 4- Accountants should learn how to deal with Metaverse tools, especially its platforms for dealing with 3D financial reports.
- 5- Egyptian organizations should disclose their financial reports by using Metaverse and 3D representations.

10. Future Research Opportunities

Based on the findings and recommendations of this study, future research should be:

- 1- Investigate the impact of using Metaverse on accounting tasks.
- 2- Examine the effect of Metaverse technologies on auditing processes.
- 3- Analyze the role of Metaverse platforms for remote accounting functions.
- 4- Discuss the impact of Metaverse based on IT infrastructure on enhancing the quality of the accounting field.

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