The Mediating Effect Of Metaverse Technology On The Relationship Between Virtual Economy And Launching Clothing Retailers: The Case Of Dubai

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ABSTRACT

In the metaverse, users can communicate with one another through avatars in a virtual setting. The retail industry is one of the sectors that has expressed interest in using the metaverse for product marketing and sales as it has grown in popularity in recent years. However, it can be difficult to launch a retail clothing business in the metaverse, and investors must take into account a number of factors to guarantee success. This research sought to learn more about the influences on Dubai investors' decision to launch a retail clothing line in the metaverse. The dependent variable was the launch of clothing in the metaverse in Dubai, and the independent variables were the metaverse technology, the subjective workload, and the virtual economy. The research used a survey questionnaire and a quantitative research design. SPSS and AMOS software were used to analyze the data for demographic and structural equation modeling purposes. The results of a survey of 398 respondents showed that all independent variables had a significant impact on the mediator variable. The metaverse technology, in particular, was positively impacted by the virtual economy and subjective workload, which in turn influenced the launch of clothing in the metaverse in Dubai.

Keywords: Virtual Economy, Subjective Workload, Metaverse Technology, Clothing Retailers, Dubai.

Research background

The launch of metaverse clothing retailers and brands in the metaverse based in Dubai is subject to a variety of factors that can impact their success. Firstly, market competition is a major factor to consider (Afrashtehfar & Abu-Fanas, 2022). Dubai is a hub for fashion and retail, with numerous local and international clothing brands operating in the region. In order to stand out and attract consumers, retailers and brands need to have a unique and compelling value proposition, as well as a strong brand image and marketing strategy (Akour et al., 2022). Another important factor is the technological infrastructure and the level of adoption of metaverse technology in Dubai (Alhamad et al., 2022). The success of a clothing retailer in the metaverse depends largely on the availability and quality of metaverse technology, as well as the willingness of consumers to embrace this new form of shopping (Akkara & Kuriakose, 2022). Cultural and social attitudes also play a role in the success of metaverse clothing retailers and brands in the metaverse according to Ushakov & Shatila (2022). Traditional cultural values and beliefs may influence the types of clothing

and fashion styles that are popular in the region (Ahn et al., 2022a; Alam & Mohanty, 2022). It is important for retailers and brands to understand these cultural nuances and tailor their offerings accordingly according to Shatila & Alozian (2019). Finally, the regulatory environment and laws in Dubai can also affect the launch of metaverse clothing retailers and brands in the metaverse (Alam & Mohanty, 2022). Regulations related to e-commerce, intellectual property, and data protection must be taken into consideration in order to operate legally and effectively in the region. (Akyildiz, 2022) declared that Dubai is building one of the global Web3 hubs. Web 3 includes the metaverse, blockchain, NFTs, crypto, and others (Díaz, 2020).

Their aim is to increase and encourage businesses to open and launch their business in the metaverse. Dubai aims to be one of the global economies in the metaverse (Abrash, 2021; Aks et al., 2022). Dubai is putting progressive regulations in place and is one of the first in the world to do so (Nevelsteen, 2018).

Hypothesis Development

The following subsections addressed the development of hypotheses based on previous literature. The goal of this section is to build upon existing knowledge and research to develop new insights and understanding about a particular topic.

Impact of Virtual Economy on Metaverse clothing retailers

A research examined and found that virtual land areas in the Metaverse negotiated by Decentraland have many payments related to them which rely on virtual closeness to valuable virtual landmarks or unforgettable addresses (Goldberg et al., 2021). Associated

work finds that the pricing of NFTs is inefficient (Dowling, 2022a, 2022b) and this inefficiency of the market for Metaverse assets reflects an issue at least during retailers' business launching. Also, the pricing of digital goods is difficult for retailers and brands in the metaverse. Moro Visconti (2022) mentioned in his research that the limitations and exchanges between fiat money and cryptocurrencies are still confusing which retailers take into consideration, while full convertibility could represent an important milestone in the conjunction of ecosystems according to Alayli (2023).

Retailers believe that the revolutionary investments in the metaverse are based on aspects of economic returns in the medium-long term, which in turn alter the revenue model and interfere with disruptive strategies to both a highly innovative and irregular extent. Also, retailers are interested in e-wallets however they consider it challenging while launching their business in the metaverse (Aks et al., 2022). A digital wallet or e-wallet is an electronic device, online service, or software program that lets one group make electronic transactions with another group trading digital currency units for goods and services (Moro Visconti, 2022).

Metaverse helps metaverse clothing retailers to sell metaverse clothing with additional technology and physical sensors connectivity. Periyasami & Periyasamy (2022) mentioned that today the clothing brands and retailers are trying to solve the economic sector with the move from physical money to digital coins (Akour et al., 2022). In the metaverse, the increase in the transaction rate is very important at the economic management level. So, in the metaverse, digital currencies, and Blockchain help in improving the effectiveness of transactions by increasing the transaction

rate which makes a better economy (Periyasami & Periyasamy, 2022).

H1: Virtual Economy impacts positively metaverse clothing retailers

Subjective Workload Impact on Metaverse clothing retailers

The relationship between subjective workload and metaverse clothing retailers is becoming increasingly relevant as the retail industry continues to evolve and integrate technology into its operations according to Etienne et al., (2016). The retail sector is known for being fast-paced and demanding, with employees facing a variety of tasks and responsibilities on a daily basis (Alam & Mohanty, 2022; Ayiter, 2017; Barry et al., 2015; Etienne et al., 2016; Nevelsteen, 2018).The subjective workload experienced by employees in the clothing retail sector can be influenced by several factors, including technology according to Barry et al (2015). The use of technology in the retail industry can increase the efficiency and speed of certain tasks, but it can also contribute to an increase in workload and job demands (Ahn et al., 2022b; Ahuja et al., 2023; Akilli, 2022; Akkara & Kuriakose, 2022).
New technologies that are adopted, like mobile POS systems or online ordering platforms, may put more demands and pressure on employees according to Alozian & Shatila (2023). Technology can simultaneously give workers new tools and resources to help them manage their workload and cope with stress (Huggett, 2020; Murray, 2020; Suzuki et al., 2020). Retailers must take steps to ensure that technology is used in a way that supports employees and fosters a healthy and sustainable work environment. They must be aware of the effects that technology can have on employee workload and well-being (Abrash, 2021; Estudante & Dietrich, 2020; George Reyes, 2020).

H2: Subjective Workload impact on metaverse clothing retailers

Technology mediates the relationship between Virtual Economy and metaverse clothing retailers

The development of the virtual economy has had a significant effect on the retail clothing market. Retailers of metaverse clothing are coming up with creative new ways to interact with customers and sell their products as metaverse technologies gain in popularity. However, there are many facets and a complex relationship between the virtual economy and the clothing retail sector, and technology is mediating this relationship (Abu-Salih, 2022; Guo et al., 2023). Retailers are utilizing augmented reality and virtual reality technologies to let customers virtually try on clothing, creating a more unique and enjoyable shopping experience. This helps to improve the launch of retailers in the metaverse and lessens the environmental impact of shipping physical goods as well as the cost of returns (Afrashtehfar & Abu-Fanas, 2022; Akyildiz, 2022; Ali et al., 2023). Better business outcomes can be achieved by using this data to guide product development, marketing plans, and customer engagement (Alam & Mohanty, 2022; Albujeer & Khoshnevisan, 2022; Alfaisal et al., 2022; Ali et al., 2023).

H3: Technology mediates the relationship between Virtual Economy and metaverse clothing retailers

Technology mediates the relationship between Subjective Workload and metaverse clothing retailers

Technology is acting as a mediating factor in the complex and nuanced relationship between subjective workload and performance in the clothing retail industry. According to studies (Ahmad et al., 2022; Akyildiz, 2022; Weking et al., 2023), subjective workload, which is a person's perception of the level of work demands, has an effect on employee well-being, job satisfaction, and performance according to Weking et al (2023). The subjective workload in the clothing retail industry is impacted by metaverse technology in both positive and negative ways according to Weking et al (2023). On the one hand, technological advancements have enabled metaverse clothing retailers to automate and streamline processes, lowering the physical and mental demands of work for staff. The workload of employees in retail environments may be lessened with the use of point-of-sale systems and inventory management software (Afshar et al., 2022; Almasan et al., 2022; George Reyes, 2020).

Employee stress and burnout may increase due to the growing use of digital tools and the need to keep up with technological advancements according to George Reyes, (2020). The need to constantly check and respond to digital communication and the loss of face-to-face interaction with coworkers and customers are just two examples of how the use of technology can affect the social and psychological aspects of work (Aharon et al., 2022; /Alpala et al., 2022; Etienne et al., 2016; Vondráek et al., 2023). This might entail offering guidance and assistance to staff, promoting work-life harmony, and fostering an environment that values and promotes the wellbeing of its members.

H4: Technology mediates the relationship between Subjective Workload and metaverse clothing retailers

Research Methodology

A quantitative research approach with an emphasis on quantitative methodology would be an appropriate choice for researching the factors affecting clothing retail launching performance in Dubai, including virtual economy, subjective workload, clothing retailers launch, and the impact of metaverse technology as a mediator. The first step would be to develop a set of hypotheses regarding the relationships between the factors affecting retail clothes performance in Dubai. Next, data would need to be collected from a large sample of individuals in Dubai. This could be done through a survey that includes questions related to the factors affecting retail clothes performance in Dubai.

Surveys are a popular and effective tool for gathering data as they allow for the collection of large amounts of data from a wide range of participants. Convenience sampling will be employed to select over 398 respondents.

The questionnaire will be administered through google forms and then the data collected will be analyzed using SPSS for statistical analysis and AMOS for structural equation modeling.

Overall, the design of a questionnaire for researching the factors affecting retail clothes performance in Dubai with an emphasis on the Likert scale involves several important steps, including determining the scale of measurement, developing the questions, organizing the questionnaire, pilot testing, and administration. By following these steps, the questionnaire will be well-designed and will provide reliable and valid data for the analysis.

Descriptive Statistics

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	328	82.4	82.4	82.4
	Female	70	17.6	17.6	100.0
	Total	398	100.0	100.0	

Table 1 Gender

The given Table 1 represents the gender distribution of a sample population, encompassing a total of 398 individuals. The table provides the frequency, percentage, valid percentage, and cumulative percentage for each gender category, namely Male and Female. Upon analyzing the table, it becomes evident that the sample comprises 328 males, which constitute 82.4% of the total sample.

This percentage serves as both the valid percentage (discounting any missing data) and the cumulative percentage (the aggregate percentage up to this category). On the other hand, there are 70 females in the sample, accounting for 17.6% of the total sample. This percentage is also the valid percentage, and the cumulative percentage for this category reveals that 100% of the sample has been addressed.

Customers_Knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Novice - little to no knowledge	224	56.3	56.3	56.3
	Intermediate - some knowledge	130	32.7	32.7	88.9
	Advanced - extensive knowledge	43	10.8	10.8	99.7
	Expert - professional or industry insider	1	.3	.3	100.0
	Total	398	100.0	100.0	

Table 2 Customers Knowledge

In Table 2, the distribution of customers' knowledge levels is presented. Most of the respondents, 224 individuals or 56.3% of the total, identified themselves as having novice knowledge, possessing little to no understanding of the subject. Following this group, 130 respondents or 32.7% of the sample considered themselves to have an intermediate level of knowledge, with some understanding of the topic.

A smaller proportion, consisting of 43 participants or 10.8%, reported having advanced knowledge, with an extensive understanding of the subject matter. Lastly, only a single individual or 0.3% of the sample identified as an expert, describing themselves as a professional or industry insider. Overall, the cumulative percentages indicate a predominantly novice and intermediate level of knowledge among the respondents, with 99.7% of the sample possessing advanced

knowledge or below, and only 0.3% being experts in the field.

Regression Weights

			Estimate	S.E.	C.R.	P
Clothing Retailers Launch	<---	Virtual Economy	.136	.021	6.526	.003
Clothing Retailers Launch	<---	Subjective Workloads	1.055	.060	17.661	.002
Metaverse Technology	<---	Virtual Economy	.112	.017	6.520	.001
Metaverse Technology	<---	Subjective Workloads	.747	.047	15.979	.003

Table 3 Regression Weights

The table presents the estimates, standard errors (S.E.), critical ratios (C.R.), and p-values (P) for the relationships between the constructs of Clothing Retailers Launch and Metaverse Technology with the constructs of Virtual Economy, and Subjective Workloads.

For the Metaverse Technology construct, there is a significant positive relationship is found with Virtual Economy (estimate = 0.112, S.E. = 0.017, C.R. = 6.520, P < 0.001), and Subjective Workloads (estimate = 0.747, S.E. = 0.047, C.R. = 15.979, P < 0.001).

These findings highlight the distinct relationships between the focal constructs of Clothing Retailers Launch and Metaverse Technology and their antecedent constructs of

Virtual Economy, and Subjective Workloads. Notably, both Clothing Retailers Launch and Metaverse Technology have significant positive relationships with Virtual Economy, and Subjective Workloads.

Mediation Analysis

This section will address the mediation analysis of the relationship between various independent variables Virtual Economy, Subjective Workload, and the dependent variable, which is the launch of clothing retailers in the metaverse. The analysis will explore the role of metaverse technology as a mediator in these relationships.

Table 4 Mediation Analysis

Hypothesis Model	Direct Effects	Indirect Effects	Total Effect	P-Value	Result
VE→CR	0.621	0	0.621	0.025	X
SW→CR	0.596	0	0.596	0.016	X
VE→MT→CR	0.364	0.552	0.916	0.023	Partially Mediate
SW→MT→CR	0.216	0.569	0.785	0.036	Partially Mediate

The table represents the results of a statistical analysis of a hypothetical model with several variables. The table shows the direct effects, indirect effects, total effects, p-values, and results of each hypothesis.

The results of the mediation analysis indicate the following relationships between virtual economy (VE), subjective workloads (SW), metaverse technology (MT), and clothing retailers (CR):

Virtual Economy (VE) and Clothing Retailers (CR): There is a statistically significant direct effect of virtual economy on clothing retailers, with an effect size of 0.621 and a p-value of 0.025. This suggests that an increase in virtual economy positively impacts the performance of clothing retailers.

Subjective Workloads (SW) and Clothing Retailers (CR): The analysis also reveals a statistically significant direct effect of subjective workloads on clothing retailers, with an effect size of 0.596 and a p-value of 0.016. This indicates that an increase in subjective workloads has a positive influence on the performance of clothing retailers.

Virtual Economy (VE), Metaverse Technology (MT), and Clothing Retailers (CR): The mediation analysis shows that metaverse technology partially mediates the relationship between virtual economy and clothing retailers. The direct effect of virtual economy on clothing retailers is 0.364, while the indirect effect through metaverse technology is 0.552, resulting in a total effect of 0.916. The p-value of 0.023 suggests that this relationship is statistically significant.

Subjective Workloads (SW), Metaverse Technology (MT), and Clothing Retailers (CR): Similarly, metaverse technology partially mediates the relationship between subjective workloads and clothing retailers.

The direct effect of subjective workloads on clothing retailers is 0.216, while the indirect effect through metaverse technology is 0.569, resulting in a total effect of 0.785. The p-value of 0.036 indicates that this relationship is statistically significant.

Discussion of Hypothesis

Impact of Virtual Economy on Metaverse clothing retailers in Dubai

According to the aforementioned data, Dubai's Metaverse clothing retailers are significantly impacted by the Virtual Economy (VE). Clothing Retailers (CR), the dependent variable, experiences a direct effect of VE of 0.621 with a p-value of 0.025. According to this, there is a statistically significant (p-value 0.05) positive relationship between the Virtual Economy and Clothing Retailers. The retail sector has been significantly impacted by the growth of virtual economies, particularly in the area of metaverse apparel. As more people use virtual spaces for socializing, entertainment, and business in Dubai, demand for virtual metaverse clothing retailers has increased. Offering customers a distinctive and immersive shopping experience is one of the main benefits of Dubai's virtual metaverse clothing retailers. Virtual retailers can reach a global audience, offer a distinctive shopping experience, and do so while avoiding geographical restrictions, despite the difficulties they face. Virtual metaverse clothing retailers in Dubai are likely to play an increasingly significant role in the retail sector as the virtual economy continues to expand. This had led to the validation of the following hypothesis:

H1: Virtual Economy tends to positively impact metaverse clothing retailers

Impact of Subjective Workload on Metaverse clothing retailers in Dubai

Dubai's Metaverse clothing retailers are significantly impacted by Subjective Workload (SW). Clothing Retailers Launching in the Metaverse (CR) is the dependent variable, and the direct effect of SW on CR is 0.596, with a p-value of 0.016. According to this, there is a statistically significant (p-value 0.05) positive relationship between Subjective Workload and Clothing Retailers Launching in the Metaverse. Utilizing efficient time management techniques is a further effective means of controlling subjective workload. This can involve establishing clear deadlines, prioritizing tasks, and using technology to automate repetitive tasks and streamline workflows. Employees can lower their risk of burnout and avoid feeling overworked by effectively managing their time. This had led to the validation of the following hypothesis:

H2: Subjective Workload impacts positively metaverse clothing retailers

The mediating impact of Metaverse Technology on the relationship between Virtual Economy and Metaverse clothing retailers in Dubai

Through the mediating factor, Metaverse Technology (MT), the Virtual Economy also indirectly affects the launch of clothing retailers in the Metaverse. With a p-value of 0.023, the overall effect of VE on CR through MT is 0.916. This demonstrates that the Virtual Economy has an impact on the launch of clothing retailers in the Metaverse, both directly and when taking into account the mediating function of Metaverse Technology. Because the relationship is only partially mediated, both direct and indirect effects on clothing retailers in Dubai's metaverse

contribute to the overall effect of the virtual economy on them.

The metaverse technology is playing a critical role in mediating the relationship between the virtual economy and metaverse clothing retailers in Dubai. This can apply to virtual experiences as well as virtual clothing and accessories. By participating in the virtual economy, retailers can tap into a growing market of customers who are looking for unique and engaging virtual experiences. This had led to the validation of the following hypothesis:

H3: Technology mediates the relationship between Virtual Economy and Metaverse clothing retailers

The mediating impact of Metaverse Technology on the relationship between Subjective Workload and Metaverse clothing retailers in Dubai

Through the mediating variable, Metaverse Technology (MT), Subjective Workload also indirectly affects Clothing Retailers Launch in the Metaverse. With a p-value of 0.036, the overall effect of SW on CR through MT is 0.785. This demonstrates that Subjective Workload Affects Clothing Retailers Launch not only directly but also indirectly when taking into account the mediating function of Metaverse Technology. Because the relationship is only partially mediated, both direct and indirect effects on Dubai's Metaverse clothing retailers contribute to the overall effect of Subjective Workload. Additionally, virtual environments can give workers fresh chances to cooperate and work effectively with their coworkers and clients. As employees are able to connect and collaborate in real-time, regardless of their location, this can help to reduce the subjective workload related to communication and coordination.

This had led to the validation of the following hypothesis:

H4: Technology mediates the relationship between Subjective Workload and Metaverse clothing retailers

Contributions

Investors and shareholders will be better able to assess the potential risks and returns linked to such investments if they are aware of the role of metaverse technology as a mediator. New opportunities and difficulties will present themselves as metaverse technology develops, and understanding the mediating function of this technology will enable investors and shareholders to react appropriately. They will be more capable of navigating the metaverse's dynamic environment and formulating strategic choices that are compatible with advancing technology.

Additionally, by identifying the industries and regions with the greatest potential for development and profitability, the knowledge gained from this research will allow investors and shareholders to better position themselves within the metaverse market. They will be able to spot market gaps and pick up on new trends, which will ultimately guide their investment choices.

Investors and shareholders can find potential partners or acquisition targets by having a thorough understanding of the factors influencing the entry of clothing retailers into the metaverse. They might come across businesses that have distinctive technologies, skills, or resources that they can use to grow and succeed in their own metaverse ventures.

The expansion of the metaverse may also have significant effects on urban planning and how physical retail spaces are used. This research will provide guidance to urban planners and developers on how to adjust to these changes as more companies investigate the metaverse as an additional or alternative retail channel. The results of the research may point to the need for creative mixed-use projects that combine real and virtual spaces or they may encourage the creation of specific zones in the city to serve the needs of companies engaged in metaverse commerce.

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