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In Cooperation with the Global Business and Technology Association

# THE EFFECT OF INFORMATION ABOUT METAVERSE ON THE CONSUMER'S PURCHASE INTENTION

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# ABSTRACT

The Metaverse is a virtual universe that combines the physical world and the digital world. People can socialize, play games and even shop with avatars created in this virtual environment. Metaverse, growing very fast regarding virtual goods, is both a profitable and risky area for investors. To enter the Metaverse for investment purposes, it is necessary to conduct comprehensive research and gather information. In this direction, this study aims to investigate the effects of source credibility, quality of argument, and the perceived risk on the purchase intention obtained by the investors about the Metaverse world from the point of view information adoption model. For this research, data were collected online from 495 consumers interested in Metaverse investment. The structural equation model was used to test the proposed model. The findings obtained in this study showed that source credibility and quality of argument affect the purchase intention positively, while the perceived risk affects the purchase intention negatively.

**Keywords:** Metaverse, information adoption model, quality of argument, source credibility, perceived risk, purchase intention

## **INTRODUCTION**

Metaverse's popularity has recently grown tremendously (Hollensen et al., 2022; Mystakidis, 2022; Vidal Tomás, 2022; Zhao et al., 2022). Companies such as Meta (Facebook), Microsoft, Apple, Somnium Space, Axie Infinity, Mirandus, Star Atlas, Illuvium, Decentraland, and The Sandbox, have invested much money in the development of Metaverse. These vast investments aim to spread and diversify its use of it. Metaverse will bring more wealth to the virtual goods market. Virtual goods are currently worth about \$50 billion and are expected to grow to \$190 billion by 2025 (Cui et al., 2022). On the other hand, Metaverse real estate sales in 2021 amounted to around \$500 million. Current trends are that sales could double by 2022. This situation attracts the attention of investors who are interested in Metaverse. They are doing their best to gather information on making a profitable Metaverse and find it too risky to invest (Mackenzie, 2022; Nakavachara & Saengchote, 2022). Investors who receive consultancy in the selection of investment products can make more rational choices. However, investors who do not seek investment advice are more likely to face risks (Efendioğlu, 2022).

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#### THE EFFECT OF INFORMATION ABOUT METAVERSE

Consumers seek information from various sources before purchasing a product or service (Zhu et al., 2016). Therefore, information is a critical phenomenon for participating in the digital economy (Mensah et al., 2021; Vollrath & Villegas, 2022). Therefore, one of the essential challenges for Metaverse investment is source credibility. In addition, the quality of argument is another important factor for the investment to be successful. This is partly because there is limited information about the Metaverse.

Most of the research in the literature deals with the usability, opportunities, threats, advantages and disadvantages of the Metaverse (Cui et al., 2022; Hollensen et al., 2022; Mystakidis, 2022; Prieto et al., 2022; Vidal-Tomás, 2022; Zhao et al., 2022). As it is understood from the literature, consumers' purchase intention and expectations in the digital field can be met in the Metaverse environment. However, to our knowledge, there is no research seeking information on the Metaverse investment in the literature. Thus, this study aims to investigate the effects of the source credibility, quality of argument, and perceived risk on the purchase intention of the Metaverse from the point of view of the information adoption model.

The paper was structured as follows. First, we provided a literature review and conceptual background. In the following sections, the hypotheses were developed. In the following area, the methodology was explained, and the findings were analyzed. The paper concluded with a discussion and results. Then, we presented some practical and theoretical implications and limitations. Finally, we ended with some directions for future work.

## LITERATURE REVIEW

Metaverse was first used in 1992 in the science fiction novel Snow Crash by Neal Stephenson. The Metaverse is a visual world that blends the physical and digital worlds. Metaverse, undoubtedly the most popular concept of recent times and requires user-centered advanced technologies, offers users a more realistic experience and rich activities in a Virtual World (Zhao et al., 2022). "Meta" means beyond, and "Universe" means realm. On the other hand, it consists of the combination of these words. In this virtual world, users can communicate and interact with each other with avatars. Metaverse is an immersive and shared virtual world where different activities are allowed for its users, represented by avatars (Vidal Tomás, 2022). It represents a parallel virtual reality universe created from computer graphics, where users worldwide can access and connect via glasses and headsets (Hwang, 2022; Marini et al., 2022; Mystakidis, 2022).

Metaverse will not replace social media but will offer an online social media world full of new user experiences. Users can come together through avatars that look like them and mimic their movements. Thus, they can interact in an environment replicating the physical world (Hollensen et al., 2022). Metaverses are new interfaces expected to be used to perform any human-computer interaction. Augmented reality is a new paradigm based on technologies, such as virtual worlds. However, the Metaverse in work, education, commerce, or entertainment has not yet become widespread (Prieto et al., 2022). People can participate in this virtual world to work, art, entertainment, investment, education, socialize and play games. Suppose people adapt to Metaverse technology, thanks to virtual reality devices. In that case, they will have the opportunity to do many activities, such as shopping, going to the movies, and spending time in the cafe, without making any physical effort. Thus, people can socialize, play games and even shop with their avatars created in the virtual environment.

It is predicted that the Metaverse for businesses will create a new revolution in almost every industry. New skills, occupations, and certifications will be needed in this virtual world, and new sectors, markets, and resources will be created. In addition, it will increase the functionality of their products or services for brands. For example, Facebook is changing its name to "Meta" to make a metadata warehouse, a place to do business in 3D in the future. The financial value of all these changes will be trillions of dollars (Hollensen et al., 2022).

Since the brand has an important role in the consumer's purchasing decision process, it has become the focus of marketing and advertising activities (Efendioglu et al., 2016). In the literature, there are various studies on Metaverse and the brands in Metavers about purchase intention. Among these studies Shen et al., (2021) examined consumer behavior and purchase intention in virtual commerce environments as a conceptual framework. It is a current issue to measure the effect on the purchase intention of the companies or brands that offer in Metaverse, which acts as a bridge between the virtual world and the real world (Onurlu & Kandemir Comoğlu, 2022). Because it has been revealed that the purchasing behavior of consumers in the real world and their behavior in the virtual world are not the same (Celikkol, 2022). Patil vd., (2022) examined young people's shopping experiences in the metaverse. The study, conducted from the Uses and Gratifications Theory perspective, showed that retail experience and metaverse application characteristics significantly affect the components of hedonic and social satisfaction. However, the retail experience and features of metaverse applications did not affect utilitarian satisfaction. Therefore, hedonic and social satisfaction significantly influenced the intention of young people to try Metaverse during their shopping experience. Azmi et al. (2023) found that the atmosphere in the Metaverse environment positively influences satisfaction and perceived enjoyment. which positively influences purchase intention. Le Tan et al. (2023) examined the game selection factors in the Metaverse, the factors affecting the entertainment experience, trust, and purchase intention. According to the results of the research, the purchase intention of the consumers was positively affected in the game choices. Similarly, music content marketing has positively affected the satisfaction and purchase intention of users who use music content on Metaverse (Hwang & Lee, 2022). Zhang et al. (2023) examined the effect of perceived media richness in the Metaverse on building cognitive trust and emotional trust, and in this context, the effect of shopping in the Metaverse on purchase intention in their study based on the theory of media wealth. However, the experience of investments such as land offered to consumers in the Metaverse environment is still an open problem in this area. This study will contribute the purchase intention literature and will strengthen relations with Metaverse consumers more effectively.

#### **Theoretical Background**

The IAM (Information Adoption Model), which was derived from the integration of the TAM (Technology Acceptance Model) and TRA (Theory of Reasoned Action), is considered more skilled in explaining information adoption behavior checks against the use of the individual theories of TAM and TRA (Mensah et al., 2021).TAM is a thoroughly accepted theory proposed by Davis (1989), which determines any behavioral topics of consumers in the acceptance of new Technologies (Lee et al., 2011, Venkatesh et al., 2003, Yiu et al., 2007). According to TRA, people behave according to their own free will (Aizen & Fishbein, 1975). The behavior of consumers depends on the intention of the behavior. Subjective norms and attitudes towards behavior are seen as determinants of this intention. This theory only explains the behavior of the person's own will, that is, the behaviors completely under the person's control (Fitzmaurice, 2005). On the other hand, ELM (Elaboration Likelihood Model) is beneficial for explaining how the information within the communication impacts the recipients and thus can be used to define the change of attitudes form and explain the methods underlying the influence of persuasive communication (Petty & Cacioppo, 1986).IAM combines TAM and ELM and uses the quality of argument as the primary way and the source quality as the environmental way. IAM attempts to explain users' information transfer intention by measuring the probability that a person will adopt the information conveyed. It is mainly used to explain how people are affected by information in computer-mediated communication platforms (Sussman & Siegal, 2003). The model was used for e-wom and purchase intention (Balakrishnan et al., 2014; Erkan & Evans, 2016; Gunawanand Huarng, 2015; Salehi-Esfahani et al., 2016; Zhu et al., 2016).

#### **Hypotheses Development**

Credibility purports the perception stage that the information provider has the experience, technique, and knowledge. Therefore, it provides neutral ideas and practical information. Creating

customer credibility is one of the most critical components of accomplished marketing. It positively impacts consumers' behavior and attitude when the credibility of information is advanced (Kim & Lee, 2022). When consumers access credible information, they are more willing to engage with the firms (Reichelt et al., 2014). The information in this study is the credibility of the people who produce information for Metaverse. Credible source creates an essential sense of trust for potential consumers (Xie et al., 2017). If customers perceive evidence that the information they are looking for is unreliable, they will likely be disappointed (Goode & Harris, 2007). The credibility of information is a decisive factor in consumers' decision-making process (Awad & Ragowsky, 2008). Therefore, studies also showed the impact of source credibility on purchase intention (Cheng & Ho, 2015; Prendergast et al., 2010). Source credibility is defined as the degree to which a user is perceived to be a source of valid argument and the degree of confidence in the user's intent to communicate the claims he considers most valid (Hovland et al., 1953). Credibility means the degree to which users perceive the information source as trustworthy, competent, and believable (Petty & Cacioppo, 1986). Environmental cues like source credibility can be affected by the receiver of the information. Information published by a highly credible source is perceived as valuable and reliable. Source credibility is chosen source's trustworthiness, expertise, and attractiveness are significant variables impacting users' perception (Cheung et al., 2008). So, credibility is an important cue that helps consumers to make a purchase decision (Zhu et al., 2016). Regarding Information Adoption Model, source credibility as an environmental signal plays a vital role in effective information procedure (Sussman & Siegal, 2003). Accordingly, this study evaluated the effect of source credibility on Metaverse investor's purchase intention as follows:

H1: The source credibility positively affects purchase intention.

Quality of argument is the convincing strength of opinions inserted in an informational message (Bhattacherjee & Sanford, 2006). Consumers search for information that is supported by compelling and powerful evidence (Cheung et al., 2008), which may affect information adoption attitude and behavior change (Teng et al., 2014; Watts & Zhang, 2008; Zhu et al., 2018). The quality of argument impacts the attitude on online platforms (Sia et al., 1999).

Quality of argument is defined as the relevance of information typicals for information users. It is a significant variable for the success of an information adoption model (Jiang et al., 2021). Argument quality is related to the customer's behavioral intention (Chiu et al., 2005). On the other hand, previous studies found that the quality of argument impacts the consumer's attitude in the context of online shopping (Sia et al., 1999; Teng et al., 2014). It belongs to the value of the information perceived by the recipient (Cheung et al., 2008; Negash et al., 2002).

Quality of argument can be measured in the context of relevance, comprehensiveness, and accuracy (DeLone & McLean, 2003). Information relevance is considered to be a significant point in the decision-making way. Comprehensiveness has defined as the integrity of the information, which means that the data is clear and informative (Rabjohn et al., 2008; Teng et al., 2014). Accuracy is the correctness of the efficient information (Bailey & Pearson, 1983). Therefore, it is the extent the consumers perceive the information as accurate (Wixom &Todd, 2005). Users' perception of argument quality can define their potential buying behavior (Cheung et al., 2008). From the viewpoint of the Information Adoption Model, argument quality as the primary cue plays a significant role in the informational effect (Sussman and Siegal, 2003).

The quality of outputs in this study concerning completeness, accuracy, and currency for Metaverse information. Consumers attach importance to the quality of the argument. Quality information affects consumers' shopping experience and product purchase intention (Ghasemaghaei & Hassanein, 2016). It impacts consumer satisfaction, affecting purchase intention (Park & Kim, 2006). Accessing qualified information increases the probability of purchasing (Kim et al., 2022). Therefore, it has been seen that the quality of the argument positively affects the purchase intention (Lee & Shin, 2014). Hence, the following proposition is postulated:

H2: The quality of argument positively affects purchase intention

Perceived risk describes user perceptions of the unwanted consequences of purchasing a service or product. The perceptions of risk and reliance have been generally joined in the technology adoption literature of innovations. Especially in recent years, studies have been related to online shopping (Faqih, 2022). The view of perceived risk negatively impacted behavioral intention to adopt online shopping. The perceived risk linked with the vendor is the degree to which a consumer believes about the potential losses when purchasing a service or product (Zendehdel et al., 2015). While perceived risks decrease the probability of making a risky choice, perceived benefits rise (Weber et al., 2002). The perceptions of risk negatively impact behavioral intention. Many researchers have shown that intention to adopt online shopping is negatively impacted by perceived risk (Ariffin et al., 2018; Ilhamalimy & Ali, 2021; Qalati et al., 2021).

Users' perception of the value of products and services impacts their decision-making and behavior (Liu et al., 2020). Perceived risk is the expected negative factor in purchasing the product (Lee & Tan, 2003). It is, in many ways, a barrier to customers' purchases (Van Noort et al., 2008). The higher the perceived risk for consumers online, the lower the consumer's intention to purchase products (Forsythe et al., 2006). Perceived risks in online information strongly affect consumers' behavior and towards (Hansen et al., 2018). Consumer perceived risk negatively affects attitudes toward online shopping and purchasing behaviors (Ariffin et al., 2018). Therefore, based on the findings of various studies, the following hypothesis is proposed:

H3: Perceived risk negatively affects purchase intention.

# METHODOLOGY

Within the literature review framework, the effect of the quality of argument, source credibility, and risk perception about the Metaverse on purchase intention will be examined. Because this study aims to empirically examine the proposed effects in the conceptual model, quantitative analysis is suitable. The following subsections report the details of the measurement of variables, data collection, and data analysis.

#### **Measurement Development**

To collect empirical data, a questionnaire was developed by adopting the measurement scale items from previous literature. It adopted three items for source credibility and three items for quality of argument from Zhao et al. (2018). It adopted three items for perceived risk from Jiang et al. (2021). Three items were adopted for purchase intention from Yin & Qiu (2021). Since the questionnaire was administered in Turkey, a professional translator translated the instrument's English version into Turkish. The questionnaire was then reverse translated into English to confirm translation equivalence.

#### **Data Collection and Sample**

The current study focuses on the context of Turkey, where there are many popular social platforms. For this research, data were collected with Google forms from 495 consumers who were interested in Metaverse investment. In the first part of the form, demographic questions were used to determine the participants' gender, marital status, age, occupation, education, and income. In the second part, there were questions about the credibility of the information obtained, the quality of the argument, the perceived risk, and purchase intention. In this section, the present research participants were asked whether they thought of investing in the Metaverse as a filter question. If the participant had thought about investing in the Metaverse, other questions were continued. The questionnaire contained close-ended questions with a five-point Likert scale, from 1 being "strongly disagree" to 5 being "strongly agree". The detailed items are shown in Table 1.

Table 1. Constructs and Measurement Items		
Construct	Items	
Source Credibility	The persons generating metaverse information are trustworthy.	
	The persons generating metaverse information are knowledgeable.	
	The metaverse investment information is credible.	
Quality of Argument	The information for metaverse is up to date.	
	The information for metaverse is accurate.	
Perceived Risk	The information for metaverse is comprehensive. I am concerned about cheating of metaverse information.	
	I worry about problems of metaverse information.	
	I worry that my consumption will not provide value for my money.	
<b>Purchase Intention</b>	I will keep metaverse investments for future purchase reference.	
	I will encourage others to purchase metaverse investments.	
	I will consider the metaverse investments as the first choice.	
	I will contact the metaverse investors to obtain more information about metaverse investments.	

The data collection process consisted of two stages. First, before proceeding to the main research, a pilot study was conducted with 44 people to determine the applicability of the questionnaire. Its intelligibility, reliability, and validity were tested in the pilot application. As a result of the pilot application, it was evaluated that the questions were understood and the questionnaire was suitable for analysis.

# **RESULTS**

The univariate normality was studied using skewness-kurtosis results (Hair et al., 2010; Kline, 2015). This study examined skewness and kurtosis values to test the normality distribution (Tabachnick & Fidell, 2007). As a result of the analysis, the kurtosis value was between -0.451 and 0.942, and the skewness value was between -0.822 and 1.211. In addition, the Kolmogorov-Smirnov test was suitable for normal distribution. In this case, since the skewness and kurtosis values were between -2 and +2, it was accepted that the data showed a normal distribution and conforms to the threshold limit suggested by Kline (2015). Therefore, the data were free from univariate normality issues and used the structural model. Structural equation modeling is mostly used in marketing research (Petrescu, 2013).

#### **Descriptive Statistics**

Descriptive statistical analyses were performed for the basic structure of the variables. The SPSS package program was used in the study. The sample demographics are shown in Table 2. It consisted of 495 people, 129 of whom were women, and 366 were men. 73.9% of the participants are male. Among the participants, 294 were single, and 201 were married. In this case, the majority of the participants were single. In addition, when the age distribution of the participants was examined, the majority were under the age of 24. In addition, most of the participants were students.

Table 2. Frequency Analysis of Demographic Data			
Demographic Variable	Categories	Ν	%
Gender	Female	129	26,1
	Male	366	73,9
Marital Status	Single	294	59,4
	Married	201	40,6

Age	18-24	185	37,4
	25-34	148	29,9
	35-44	125	25,3
	45-54	29	5,9
	55-64	7	1,4
	65 and above	1	0,2
Employment Status	Student	195	39,4
	Public sector employee	94	19,0
	Private sector employee	99	20,0
	Owns a private business	68	13,7
	Housewife	1	0,2
	Retired	2	0,4
	Unemployed	36	7,3
Education Level	Above college	39	7,9
	High School	65	13,1
	Associate degree	98	19,8
	Bachelor	225	45,5
	Master or PhD	68	13,7
Monthly Income	300\$and below	112	22,6
	301\$ - 600\$	199	40,2
	601\$ - 1200\$	82	16,6
	1201\$ - 1800\$	74	14,9
	1801\$and above	28	5,7

#### **Measurement Model**

For the reliability and validity analysis of the data, Cronbach's alpha (CA), Composite Reliability (CR), and Average Variance Extracted (AVE) were examined. The mean explained variance value is expected to be above 0.50, and the construct reliability and Cronbach's alpha values are above 0.70 (Fornell & Larcker, 1981). Therefore, they are shown in Table 3.

Construct	CA	AVE	CR
Source Credibility	0,821	0,610	0,744
Quality of Argument	0,842	0,622	0,726
Perceived Risk	0,833	0,602	0,727
Purchase Intention	0,724	0,619	0,769

 Table 3. Overview of the Measurement Model

Exploratory factor analysis was used to determine the construct validity of the scale. It was seen that the result of the KMO test (0.819) and Bartlett's test result (0.001) were also suitable for factor analysis. According to the exploratory factor analysis results, the statements were loaded on four factors. In total, the explanatory rate was calculated as 62.52%. In this case, it was determined that the scale used was distributed according to the purpose of preparation.

Finally, confirmatory factor analysis was applied to the data obtained from this research, and it was examined whether the validity of the factor structure was confirmed. For this, factor loads and goodness of fit values were examined. As a result of the findings obtained(CMIN/DF=2.766; CFI=0.928; AGFI=0.919; GFI=0.903; RMSEA= 0.04), it was seen that the scale items were loaded with an acceptable fit to the relevant factors.

#### Structural Model

Once we have assumed that the construct measures are reliable and valid, the next step is assessing the structural results. The AMOS program was used in the structural equation model analysis. When the values related to the fit indices of the model proposed in this research were examined, the data fit well with the model. This is shown in Table 4.

Model Fit Index	Good Fit	Acceptable Fit	<b>Obtained Values</b>
CMIN/DF	$\leq 3$	$\leq 5$	2,242
CFI	$\geq$ 0,97	$\geq 0,90$	0,915
AGFI	$\geq$ 0,90	$\geq 0,85$	0,886
GFI	$\geq 0,90$	$\geq$ 0,85	0,872
RMSEA	$\leq$ 0,05	$\leq$ 0,08	0,04

Table 4. Summary of Goodness-of-Fit Indices for Measurement Model

The results of the structural model test showed that the standardization path coefficients were statistically significant. The p significance values obtained from the analysis are shown in Table 5. According to these results, the source credibility ( $\beta = .334$ ; p<.05) and the quality of the argument ( $\beta = .291$ ; p<.05) had a positive effect on purchase intention; perceived risk ( $\beta = -.185$ ; p<.05) had a negative impact on purchase intention. Thus, hypotheses H1, H2, and H3 were accepted.

#### **Table 5. Results of Hypotheses Testing**

Hypothesis	Path	β	P value
H1	Source Credibility ->Purchase Intention	0,334	<,001
H2	Quality of Argument->Purchase Intention	0,291	<,001
H3	Perceived Risk->Purchase Intention	-0,185	0,03

### DISCUSSION

The source credibility positively affects the purchase intention parallel with the IAM construct (Sussman & Siegal, 2003). This result supports the findings obtained in previous studies on different areas (Cheng & Ho, 2015; Filieri et al., 2018; Ismagilova et al., 2020; Prendergast et al., 2010). Therefore, source credibility about Metaverse is an important environmental cue for investors evaluating purchases regardless of whether they have real or virtual links with the sources.

The quality of argument defines the degree of informational influence when a person cognitively accents convincing information. It is crucial to the process of information adoption, which indicates that in the context of Metaverse. It was a significant factor in the use of information and communication Technologies technologies (Briceño-Garmendia ve Estache, 2004). In this study, the quality of argument positively affects purchase intention. This result is consistent with the findings obtained in previous studies on various subjects (Cheung et al., 2008; Kim et al., 2022; Lee & Shin, 2014; Park & Kim, 2006; Park et al., 2014; Park & Lee, 2008) where quality of argument was found as a strong predictor of purchase intention. Additionally, in the IAM construct, results indicate that quality of argument has the most substantial effect on purchase intention (Sussman & Siegal, 2003 Investors are choosing qualified information to examine the quality level of the Metaverse information they demand because high-quality

information content covers the essential parts of Metaverse investment, the more accurate the review information, the more practical the review experience, and the better its impacts (Mystakidis, 2022; Rauschnabel et al., 2022; Shen et al., 2021; Tseng et al., 2016).

According to the final analysis result from the present study, perceived risk has a negative effect on purchase intention. This finding is in the same direction as some studies in the literature (Ariffin et al., 2018; Forsythe et al., 2006). Metaverse contains both risks and promises for the future regarding investment and purchasing.

In this study, it has been revealed that it is essential to obtain credible and quality information before investment. In addition, it has been observed that investors give up buying when they take the risk factor into account in detail.

# CONCLUSION

Metaverse is an immersive world that combines virtual reality and augmented reality, where users are represented by avatars and navigate virtual spaces. It is expected to have significant effects in many sectors, such as marketing, fashion, technology, and games, in the future. Since every technological innovation, opportunity, and threat are shaped together, and some factors are crucial before investing in Metaverse. Most of the respondents to the survey are students. Compared to others, students are more willing to invest in Metaverse because they are more familiar with Metaverse, are more inclined to use new technologies, and are more curious about this field. This study examined the effects of the credibility, quality, and risk perception of the information obtained by the consumers for the Metaverse investment on the purchase intention. In this direction, it has been determined that the quality of the argument and the source's credibility positively affect the purchase intention. However, the perceived risk has a negative impact.

#### **Theoretical Contributions**

As a result, what factors may affect the Metaverse investors' purchase intention is understood. It is well-acknowledged in the literature that quality of argument and credibility is an essential prerequisites. Therefore, this study provides valuable theoretical contributions to Information Adoption Model literature. First, implementing this type of analysis is one of the rare studies assessing empirically the information reliance, quality of argument, and purchase intention relationship within the context of Metaverse investing. Second, the perceived risk negatively affects purchase intention to adopt and use Metaverse for purchase. This finding suggests that consumers' purchase intention to adopt Metaverse investing is sensitive to the level of risk perceptions demonstrated by investors. This means that investors are generally more concerned about the factors of risk perceptions when advancing purchase intention to adopt Metaverse investing. This study contributes to the literature by providing sufficient empirical proof that Metaverse investors are concerned with building reliance for purchase intention.

#### **Practical Implications**

It will be essential to take appropriate due diligence before purchasing in the Metaverse environment. If possible, receiving help from consulting firms, if not possible, would be beneficial to obtain information from reliable and experienced Metaverse investors. The information obtained from trustworthy sources will positively affect the purchase intention of the investors. Furthermore, marketers should also deliver Metaverse investment information from qualified and reliable communicators to consumers through the proper channels. Thus, consumers fed with capable information can expand their Metaverse investments. On the other hand, Metaverse businesses sharing valuable and credible information for consumers on social media and providing regular training on this subject will directly affect their purchases positively.

#### **Limitations and Future Research Directions**

This study has its limitations that call for new directions for future research. First, future research could further expand the analysis by including more variables for investors to buy on the Metaverse. Second, this study was conducted using only a limited convenience sampling in Turkey, and the extant literature has not adequately investigated comparative empirical analysis between investors. Thus, the findings may not apply to other countries. This study focuses on investing in the Metaverse as a company. In future studies, a larger survey participant may be interested, and studies to be conducted from the perspectives of consumers, rather than companies, will contribute to the literature on shopping in Metaverse. Besides that further studies may replicate this study in other countries to verify the research results and consequently direct Metaverse more broadly with importance on different country environments. Third, to universalize findings, studies need to handle similar studies on respondents from another platform.

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# REFERENCES

- Ajzen, I., & Fishbein, M. (1975). A Bayesian analysis of attribution processes. *Psychological Bulletin*, 82(2), 261. https://doi.org/10.1037/h0076477
- Ariffin, S. K., Mohan, T., & Goh, Y. N. (2018). Influence of consumers' perceived risk on consumers' online purchase intention. *Journal of Research in Interactive Marketing*, 12(3). 309-327. https://doi.org/10.1108/JRIM-11-2017-0100
- Awad, N.F. & Ragowsky, A. (2008), Establishing trust in electronic commerce through online word of mouth: an examination across genders, *Journal of Management Information Systems*, 24(4), 101-121. https://doi.org/10.2753/MIS07421222240404
- Azmi, A., Ibrahim, R., Ghafar, M. A., & Rashidi, A. (2023). Metaverse for Real Estate Marketing: The Impact of Virtual Reality on Satisfaction, Perceived Enjoyment and Purchase Intention. https://doi.org/10.21203/rs.3.rs-2584882/v1
- Bailey, J.E. & Pearson, S.W. (1983). Development of a tool for measuring and analyzing computer user satisfaction. *Management Science*, 29(5), 530-545. https://doi.org/10.1287/mnsc.29.5.530
- Balakrishnan, B. K., Dahnil, M. I., & Yi, W. J. (2014). The impact of social media marketing medium toward purchase intention and brand loyalty among generation Y. *Procedia-Social and Behavioral Sciences*, 148, 177-185. https://doi.org/10.1016/j.sbspro.2014.07.032
- Bhattacherjee, A. & Sanford, C. (2006). Influence processes for information technology acceptance: an Elaboration Likelihood Model. *MIS Quarterly*, *30*(4), 805–825. https://doi.org/10.2307/25148755
- Briceño-Garmendia, C., & Estache, A. (2004). Infrastructure services in developing countries: access, quality, costs, and policy and policy reform. *World Bank Publications*, 3468. https://doi.org/10.1596/1813-9450-3468
- Cheung, C. M., Lee, M. K., & Rabjohn, N. (2008). The impact of electronic word-of-mouth: The adoption of online opinions in online customer communities. *Internet Research*, 18(3), 229-247. https://doi.org/10.1108/10662240810883290
- Cheng, Y.H. & Ho, H.Y. (2015), Social influence's impacton reader perceptions of online reviews, *Journal of Business Research*, 68(4), 883-887. https://doi.org/10.1016/j.jbusres.2014.11.046
- Chiu, H. C., Hsieh, Y. C., & Kao, C. Y. (2005). Web site quality and customer's behavioral intention: an exploratory study of the role of information asymmetry. *Total Quality Management*, 16, 185-197. https://doi.org/10.1080/14783360500054277

- Cui, H., Xu, Z., & Yao, C. (2022). Will the Metaverse Be the Future of the Internet? In 2022 8th International Conference on Humanities and Social Science Research (ICHSSR 2022). 2165-2170. Atlantis Press. https://doi.org/10.2991/assehr.k.220504.392
- Cheung, C.M.K., Lee, M.K.O. & Rabjohn, N. (2008). The impact of electronic word-of mouth: the adoption of online opinions in online customer communities. *Internet Research*, *18*(3), 229 247. https://doi.org/10.1108/10662240810883290
- Çelikkol, Ş. (2022). Evaluation of Metaverse World In Terms of Consumer Purchasing Behaviors. İstanbul Kent Üniversitesi İnsan ve Toplum Bilimleri Dergisi, 3(1), 64-75.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 319-340. https://doi.org/10.2307/249008
- DeLone, W.H. & McLean, E.R. (2003). TheDeLone and McLean model of information systems success: a ten-year update. *Journal of Management Information Systems*, 19 (4), 9-30. https://doi.org/10.1080/07421222.2003.11045748
- Efendioğlu, İ. H., Mutlu, A. T., & Durmaz, Y. Cep telefonu satın alma kararında markanın etkisi: Y kuşağı tüketiciler üzerine bir araştırma. *GÜ İslahiye İİBF Uluslararası E-Dergi*, 4(4), 215-228. https://doi.org/10.48550/arXiv.2205.13367
- Efendioğlu, İ. H. Kripto paralara yatırım niyetini etkileyen bazı faktörlerin incelenmesi. *Giresun Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 8(2), 291-310. https://doi.org/10.46849/guiibd.1162973
- Erkan, I., & Evans, C. (2016). The influence of e-WOM in social media on consumers' purchase intentions: An extended approach to information adoption. *Computers in Human Behavior*,61, 47-55. https://doi.org/10.1016/j.chb.2016.03.003
- Faqih, K. M. (2022). Internet shopping in the Covid-19 era: Investigating the role of perceived risk, anxiety, gender, culture, and trust in the consumers' purchasing behavior from a developing country context. *Technology in Society*, *70*, 101992. https://doi.org/10.1016/j.techsoc.2022.101992
- Filieri, R., McLeay, F., Tsui, B., & Lin, Z. (2018). Consumer perceptions of information helpfulness and determinants of purchase intention in online consumer reviews of services. *Information and Management*, 55(8), 956-970. https://doi.org/10.1016/j.im.2018.04.010
- Fitzmaurice, J. (2005). Incorporating consumers' motivations into the theory of reasoned action. *Psychology and Marketing*, 22(11), 911-929. https://doi.org/10.1002/mar.20090
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 18(3), 382-388. https://doi.org/10.1177/002224378101800313
- Forsythe, S., Liu, C., Shannon, D. & Gardner, L.C. (2006), Measure the perceived benefits and risks of online shopping, *Journal of Interactive Marketing*, 20(2), 55-75. https://doi.org/10.1002/dir.20061
- Ghasemaghaei, M., & Hassanein, K. (2016). A macro model of online information quality perceptions: A review and synthesis of the literature. *Computers in Human Behavior*, 55, 972-991. https://doi.org/10.1016/j.chb.2015.09.027
- Goode, M. M. H., & Harris, L. C. (2007). Online behavioral intentions: an empirical investigation of antecedents and moderators. *European Journal of Marketing*, 41, 512-536. https://doi.org/10.1108/03090560710737589
- Gunawan, D. D., & Huarng, K. H. (2015). Viral effects of social networks and media on consumers' purchase intention. *Journal of Business Research*, 68(11), 2237-2241. https://doi.org/10.1016/j.jbusres.2015.06.004
- Hair, J. F. (2009). *Multivariate Data Analysis: A Global Perspective*. 7th ed. Upper Saddle River: Prentice Hall
- Hansen, J. M., Saridakis, G., & Benson, V. (2018). Risk, trust, and interaction of perceived ease of use and behavioral control in predicting consumers' use of social media for transactions. *Computers in Human Behavior*, 80, 197-206. https://doi.org/10.1016/j.chb.2017.11.010
- Hollensen, S., Kotler, P., & Opresnik, M. O. (2022). Metaverse the new marketing universe. *Journal of Business Strategy, ahead-of-print* https://doi.org/10.1108/JBS-01-2022-0014

- Hovland, C. I. & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *Public Opinion Quarterly*, 15 (4), 635-650. https://doi.org/10.1086/266350
- Hwang, Y. (2022). Preliminary Investigation on Student Perspectives and Satisfaction with Distance Education in the Metaverse World: Focusing on the Use of ifland App. *The Journal of the Korea Contents Association*, 22(3), 121-133. https://doi.org/10.5392/JKCA.2022.22.03.121
- Ilhamalimy, R. R., & Ali, H. (2021). Model perceived risk and trust: e WOM and purchase intention (The role of trust mediating in online shopping in shopee Indonesia). *Dinasti International Journal of Digital Business Management*, 2(2), 204-221. https://doi.org/10.31933/dijdbm.v2i2.651
- Ismagilova, E., Slade, E., Rana, N. P., & Dwivedi, Y. K. (2020). The effect of characteristics of source credibility on consumer behaviour: A meta-analysis. *Journal of Retailing and Consumer Services*, 53, 101736. https://doi.org/10.1016/j.jretconser.2019.01.005
- Jiang, G., Liu, F., Liu, W., Liu, S., Chen, Y., & Xu, D. (2021). Effects of information quality on information adoption on social media review platforms: the moderating role of perceived risk. *Data Science and Management*, *1*(1), 13-22. https://doi.org/10.1016/j.dsm.2021.02.004
- Kim, H., & Lee, N. (2022). The Effects of the In-Flight Safety Information Characteristics on the Safety Behavioral Intention of Airline Passengers. Sustainability, 14(5), 2819. https://doi.org/10.3390/su14052819
- Kline, R. B. (2015). *Principles and practice of structural equation modeling*. Guilford publications. https://doi.org/10.25336/csp29418
- Kuş, O., (2022). Metaverse: Dijital Büyük Patlamada'Fırsatlar ve Endişelere Yönelik Algılar. *Intermedia International E-journal*, 8(15), 245-266. https://doi.org/10.21645/intermedia.2021.109
- Le Tan, T., Khanh, H. N., Hang, H. T., Long, N. D., My, V. T. H., & Lap, N. H. C. (2023). The Impact of Marketing Metaverse through Experience in Enjoyment Experience, Brand Active and Purchase Intention. Advances in Management, 16(1), 19-24.
- Lee, H., Kim, J. W., & Hackney, R. (2011). Knowledge hoarding and user acceptance of online discussion board systems in eLearning: A case study. *Computers in Human Behavior*, 27(4), 1431-1437. https://doi.org/10.1016/j.chb.2010.07.047
- Lee, E.J. & Shin, S.Y. (2014), When do consumers buy online product reviews? Effects of review quality, product type, and reviewer's photo, *Computers in Human Behavior*, *31*(1), 356-366. https://doi.org/10.1016/j.chb.2013.10.050
- Lee, K.S. & Tan, S.J. (2003), E-retailing versus physical retailing: a theoretical model and empirical test of consumer choice, *Journal of Business Research*, 56(11), 877-885. https://doi.org/10.1016/S0148-2963(01)00274-0
- Liu, S.,Gao, B., Gallivan, M., & Gong, Y. (2020). Free add-on services and perceived value in competitive environments: Evidence from online hotel reviews. *International Journal of Hospitality Management*, 90, 102611. https://doi.org/10.1016/j.ijhm.2020.102611
- Mackenzie, S. (2022). Criminology towards the Metaverse: Cryptocurrencyscams, grey economy and the technosocial. *The British Journal of Criminology*, 62(6), 1537–1552 https://doi.org/10.1093/bjc/azab118
- Marini, A., Nafisah, S., Sekaringtyas, T., Safitri, D., Lestari, I., Suntari, Y., ... & Iskandar, R. (2022). Mobile Augmented Reality Learning Media with Metaverse to Improve Student Learning Outcomes in Science Class. *International Journal of Interactive Mobile Technologies*, 16(7). https://doi.org/10.3991/ijim.v16i07.25727
- Mensah, I. K., Adams, S., Adjei, J. K., & Mwakapesa, D. S. (2021). Drivers of egovernment adoption amidst COVID-19 pandemic: The Information Adoption Model (IAM) approach. *Information Development*, 1(16). https://doi.org/10.1177/02666669211010872
- Mystakidis, S. (2022). Metaverse. *Encyclopedia*, 2, 486–497. https://doi.org/10.3390/%20encyclopedia20100

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Nakavachara, V., and Saengchote, K. (2022). Is Metaverse LAND a good investment? It depends on your unit of account. https://doi.org/10.48550/arXiv.2202.03081

- Negash, S., Ryan, T. & Igbaria, M. (2002). Quality and effectiveness in web-based customer support systems. *Information and Management*, 40(8), 757-68. https://doi.org/10.1016/S0378-7206(02)00101-5
- Onurlu Ö. & Kandemir Çomoğlu G., (2022). The Effect of Customer's Involvement Level On Purchase Intention In Metaverse Marketing In Terms of Digital Technologies and Digital Marketing Approach and a Research, DEÜ 1. Uluslararası Sosyal Bilimler Kongresi, İzmir, Türkiye, 22 - 24 Haziran 2022. 115-118
- Park, C. H., & Kim, Y. G. (2006). The effect of information satisfaction and relational benefit on consumers' online shopping site commitments. *Journal of Electronic Commerce in Organizations (JECO)*, 4(1), 70-90. https://doi.org/10.4018/jeco.2006010105
- Park, D. H., Lee, J., & Han, I. (2014). The effect of online consumer reviews on consumer purchasing intention: The moderating role of involvement. *International Journal of Electronic Commerce*, 11(4), 125-148. https://doi.org/10.2753/JEC1086-4415110405
- Park, D. H., & Lee, J. (2008). eWOM overload and its effect on consumer behavioral intention depending on consumer involvement. *Electronic Commerce Research and Applications*, 7(4), 386-398. https://doi.org/10.1016/j.elerap.2007.11.004
- Patil, K., Bharathi V. S & D. Pramod. (2022). Can Metaverse Retail lead to purchase intentions among the youth? A Stimulus-Organism-Response theory perspective, 2022 ASU International Conference in Emerging Technologies for Sustainability and Intelligent Systems (ICETSIS), Manama, Bahrain, 2022, 314-320 https://doi.org/10.1109/ICETSIS55481.2022.9888929
- Petrescu, M. (2013). Marketing research using single-item indicators in structural equation models. Journal of Marketing Analytics, *1*, 99–117. https://doi.org/10.1057/jma.2013.7
- Petty, R. E., & Cacioppo, J. T. (1986). The Elaboration Likelihood Model of persuasion. In L. Berkowitz (Ed.), Advances in experimental social psychology. New York: Academic Press, 19, 123-205. https://doi.org/10.1007/978-1-4612-4964-1\_1
- Prendergast, G., Ko, D. & Yuen, S.Y.V. (2010), Online word of mouth and consumer purchase intentions, *International Journal of Advertising*, 29(5), 2. https://doi.org/10.2501/S0265048710201427
- Prieto, J. de la F., Lacasa, P., & Martínez-Borda, R. (2022). Approaching metaverses: Mixed reality interfaces in youth media platforms. *New Techno Humanities*, 2(2), 136-145 https://doi.org/10.1016/J.TECHUM.2022.04.004
- Qalati, S. A., Vela, E. G., Li, W., Dakhan, S. A., Hong Thuy, T. T., & Merani, S. H. (2021). Effects of perceived service quality, website quality, and reputation on purchase intention: The mediating and moderating roles of trust and perceived risk in online shopping. *Cogent Business and Management*, 8(1), 1869363. https://doi.org/10.1080/23311975.2020.1869363
- Rauschnabel, P. A., Felix, R., Hinsch, C., Shahab, H., & Alt, F. (2022). What is XR? Towards a framework for Augmented and Virtual Reality. *Computers in Human Behavior*, 107289. https://doi.org/10.1016/j.chb.2022.107289
- Reichelt, J., Sievert, J. & Jacob, F. (2014), How credibility affects e-WOM reading: the influences of expertise, trustworthiness, and similarity on utilitarian and social functions, *Journal of Marketing Communications*, 20(1-2), 65-81. https://doi.org/10.1080/13527266.2013.797758
- Rabjohn, N., Cheung, C.M.K., & Lee, M.K.O. (2008). Examining the Perceived Credibility of Online Opinions: Information Adoption in the Online Environment. 41st Annual Hawaii International Conference on system sciences. Waikoloa, Big Island, HI, USA, January 7-10. https://doi.org/10.1109/HICSS.2008.156
- Salehi-Esfahani, S., Ravichandran, S., Israeli, A., & Bolden III, E. (2016). Investigating information adoption tendencies based on restaurants' user-generated-content utilizing a modified information adoption model. *Journal of Hospitality Marketing and Management*, 25(8), 925-953. https://doi.org/10.1080/19368623.2016.1171190

- Shen, B., Tan, W., Guo, J., Zhao, L., & Qin, P. (2021). How to promote User Purchase in Metaverse? A systematic literature review on Consumer Behavior Research and Virtual Commerce Application Design. *Applied Sciences*, 11(23), 11087. https://doi.org/10.3390/app112311087
- Sia, C.L., Tan, B.C.Y., & Wei, K.K. (1999). Can a GSSstimulategrouppolarization? An empirical study. IEEE Transactions on Systems, *Man and Cybernetics*, 29(2), 227-237. https://doi.org/10.1109/5326.760567
- Sussman, S. W., & Siegal, W. S. (2003). Informational influence in organizations: An integrated approach to information adoption. *Information Systems Research*, 14(1), 47-65. https://doi.org/10.1287/isre.14.1.47.14767

Tabachnick, B. G., & Fidell, L. S. (2007). Using multivariate statistics. NY: Pearson.

- Teng, S., Khong K.W, Goh, W.W., & ChongA.Y.L. (2014). Examining the antecedents of persuasive e WOM messages in social media. *Online Information Review*, 38(6), 746 -768. https://doi.org/10.1108/OIR-04-2014-0089
- Tseng, S. Y., & Wang, C. N. (2016). Perceived risk influence on dual-route information adoption processes on travel websites. *Journal of Business Research*, 69(6), 2289 - 2296. https://doi.org/10.1016/j.jbusres.2015.12.044
- Van Noort, G., Kerkhof, P., & Fennis, B. M. (2008). The persuasiveness of online safety cues: the impact of prevention focus compatibility of web content on consumers' risk perceptions, attitudes, and intentions. *Journal of Interactive Marketing*, 22, 58-72. https://doi.org/10.1002/dir.20121
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 425-478. https://doi.org/10.2307/30036540
- Vidal-Tomás, D. (2022). The new crypto niche: NFTs, play-to-earn, and metaverse tokens. *Finance Research Letters*, 102742. https://doi.org/10.1016/J.FRL.2022.102742
- Vollrath, M.D., & Villegas, S.G. (2022). Avoiding digital marketing analytics myopia: revisiting the customer decision journey as a strategic marketing framework. *Journal of Marketing Analytics*, 10, 106–113. https://doi.org/10.1057/s41270-020-00098-0
- Watts, S. A. & Zhang, W. (2008). Capitalizing on Content: Information Adoption in Two Online communities, *Journal of the Association for Information Systems*, 9(2), https://doi.org/10.17705/1jais.00149
- Weber, E. U. Blais, A. R., & Betz, N. E. (2002). A domain-specific risk-attitude scale: Measuring risk perceptions and risk behaviors. *Journal of Behavioral Decision Making*, 15(4), 263-290. https://doi.org/10.1002/bdm.414
- Wixom, B.H. & Todd, P.A. (2005). A theoretical integration of user satisfaction and technology acceptance. *Information Systems Research*, *16* (1), 85-102. https://doi.org/10.1287/isre.1050.0042
- Xie, K. L., So, K. K. F., & Wang, W. (2017). Joint effects of management responses and online reviews on hotel financial performance: A data-analytics approach. *International Journal of Hospitality Management*, 62, 101-110. https://doi.org/10.1016/j.ijhm.2016.12.004
- Yin, J., & Qiu, X. (2021). AI technology and online purchase intention: Structural equation model based on perceived value. *Sustainability*, *13*(10), 5671. https://doi.org/10.3390/su13105671
- You, C. S., Grant, K., & Edgar, D. (2007). Factors affecting the adoption of Internet Banking in Hong Kong—implications for the banking sector. *International Journal of Information Management*, 27(5), 336-351. https://doi.org/10.1016/j.ijinfomgt.2007.03.002
- Zendehdel, M., Paim, L. H., & Osman, S. B. (2015). Students' online purchasing behavior in Malaysia: Understanding online shopping attitude. *Cogent Business and Management*, 2(1), 1078428. https://doi.org/10.1080/23311975.2015.1078428
- Zha, X., Yang, H., Yan, Y., Liu, K., & Huang, C. (2018). Exploring the effect of social media information quality, source credibility and reputation on informational fit-to task: Moderating role of focused immersion. *Computers in Human Behavior*, 79, 227-237 https://doi.org/10.1016/j.chb.2017.10.038

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- Zhang, L., Anjum, M. A., & Wang, Y. (2023). The Impact of Trust-Building Mechanisms on Purchase Intention towards Metaverse Shopping: The Moderating Role of Age. *International Journal of Human–Computer Interaction*, 1-19. https://doi.org/10.1080/10447318.2023.2184594
- Zhao, Y., Jiang, J., Chen, Y., Liu, R., Yang, Y., Xue, X., & Chen, S. (2022). Metaverse: Perspectives from graphics, interactions, and visualization. *Visual Informatics*, 6(1), 56–67. https://doi.org/10.1016/J.VISINF.2022.03.002
- Zhu, D. H., Chang, Y. P., & Luo, J. J. (2016). Understanding the influence of C2C communication on purchase decision in online communities from a perspective of information adoption model. *Telematics and Informatics*, 33(1), 8-16. https://doi.org/10.1016/j.tele.2015.06.001