Asia Pacific Academy of Science Pte. Ltd.

Metaverse 2026, 7(3), 8555.
https://doi.org/10.54517/m8555

Article

Robo-Advisors in the Metaverse: Are Users Ready?

Manisha Manchanda, Ayush Chanana*

Department of Management Studies, Deenbandhu Chhotu Ram University of Science & Technology, Murthal,(Sonepat), Haryana, India
*** Corresponding author:** Ayush Chanana, ayushchanana0612@gmail.com

CITATION

Manchanda M, Chanana A. Robo-Advisors in the Metaverse: Are Users Ready? Metaverse. 2026; 7(3): 8555. https://doi.org/10.54517/m8555

ARTICLE INFO

Received: 1 March 2026
Accepted: 18 June 2026
Available online: 15 July 2026

Abstract: Over the past two decades, financial technology has emerged major focus of interest among researchers and institutions. As digitalisation is expanding, fintech has now entered the metaverse by delivering financial services to various investors via robo-advisor, which is an automated system that recommends algorithm-driven and cost-effective advice to investors within an immersive environment. Despite their technological potential, robo-advisor services are not used in the metaverse due to technological complexities, trust, uncertainty, *etc*. By applying the Technology Readiness Index (TRI), with trust conceptualised as a mediating factor between TRI & behavioural intentions (BI), the study examines users' readiness to adopt metaverse robo-advisor services. Data was collected from 270 investors through Google Forms using a purposive sampling technique. By using Partial Least Squares Structural Equation Modelling 4.1.0.7, the data was analysed. The result indicates that technology readiness enablers (Optimism, Innovativeness) have a substantial and positive influence on trust, whereas, inhibitors (insecurity, discomfort) do not influence trust, and also mediation is not supported by inhibitors. The study provides useful insights to financial institutions and platform developers to increase trust in users' readiness to adopt these services in the virtual environment.

Keywords: Artificial Intelligence; Behavioural Intention; Financial Institution; Metaverse; Technology Readiness Index; Robo- advisor

1. Introduction

After the next generation to internet, Metaverse technology is gaining popularity in various domains and become one of the most discussed terms in the second half of 2021. Metaverse is being discussed by people from many walks of life, particularly those in the financial sector [1]. In the metaverse, people can communicate both formally and informally, engage through avatars, produce content and goods, and make money from goods and services in immersive environments [2]. Initially, it gained popularity through a second life and then, by significant technological developments led by companies like Meta (previously Facebook), which aim to develop a new class of digital environments that transform social interactions, commerce, education, entertainment, and shopping, like a virtual world that combines augmented and mixed reality [3]. In an inclusive digital community, this environment reflects users' languages and cultures while facilitating smooth interactions between virtual and real-world elements [4]. Financial institutions are exploring metaverse-enabled platforms to deliver immersive, interactive, and personalised services that transcend traditional digital interfaces [5,6].

One of the biggest innovations in the financial advisory system is the robo-advisor, which provides easily accessible and customised financial advice by fusing

artificial intelligence (AI) with financial knowledge. These digital platforms improve operational efficiency and customer service quality in wealth management by offering customised investment solutions via the use of AI and machine learning [7,8]. Robo-advisors are crucial in shaping consumers' financial perspectives and serving as a link for logical decision-making in the metaverse [9]. Artificial Intelligence (AI) and the Metaverse have been quickly integrating into securities markets since 2023. Examples of this include multi-agent reinforcement learning-based market simulations, immersive trading floors, and AI-powered virtual advisors [10].

Despite these technical advancements, the adoption of the metaverse robo-advisor is limited, as there is a high level of risk, uncertainty, and complexity connected with making financial decisions. Since there are problems, including fears over data privacy, cybersecurity threats, and the complexities of emerging technologies, these fears are exacerbated in metaverse contexts. As a result, users' willingness to adopt metaverse robo-advisor services still depends on psychological concerns and trust rather than solely on functional benefits. In this context, the TRI is the tendency for individuals to accept and utilise developing technologies to accomplish their objectives. People's willingness to embrace and engage with technology can be better by using its four dimensions: innovativeness, optimism, discomfort & insecurity. While discomfort and insecurity are barriers for adopting new technology, Innovativeness and optimism are seen as markers of a favorable attitude toward technology [11,12]. In contrast, trust is essential for evaluating a person's BI to embrace a technology [13]. Now question is raised: Are users ready to accept metaverse robo-advisory services? Present study examines the effect of technology enablers & inhibitors on trust in the metaverse robo advisor service and investigates how trust mediates the relationship between technology readiness and BI.

2. Literature Review

2.1 Metaverse and technology-enabled financial services

Different perspectives and goals lead to varying definitions of the Metaverse. Basically, it's a virtual setting which mimics the actual world and allows users to communicate with one another. In 1992, Snow Crash introduced the metaverse [14]. Metaverse is a virtual world where people spend most of their time. Platforms like Linden Lab's Second Life in 2003, which allowed users to create virtual avatars and fully immerse themselves in virtual reality, were early examples of this idea [6,15]. The metaverse has developed into a revolutionary digital ecosystem that combines blockchain technology, using mixed reality and virtual reality to produce immersive and enduring virtual worlds[5,6]. The scope of metaverse is not limited now, it has been explored into various commercial and service-oriented applications, including education, healthcare, entertainment and so on [16-18]. Although finance is becoming more and more popular in the Metaverse, its potential in financial services is still mostly unrealised and ignored. The Metaverse is already being incorporated into financial services by several financial institutions to give consumers new and interesting ways to do business, make investments, and engage with money [19].

2.2 Robo-advisors and digital financial services

Robo-advisor is derived from the two words "robo" & "advisor," where "robo" denotes automation and "advisor" denotes consulting and investment managers' guidance. Together, these terms denote a completely automated investment process devoid of human involvement [20]. Following the 2008 crisis in the financial sector, the robo advisors originated, mainly to eliminate the trust gap between conventional

financial services advisors and their clients. Investors who no longer trust traditional human advisors are greater likelihood of using robo-advisors [21]. Wealthfront and Betterment were the organisations that provided robo-advisor facilities in the United States. Globally, the robo-advisor market is expanding, with Asset Under Management (AUM) projected to attain US$2.38 trillion & user adoption estimated at 34.05 million by 2029 [22].

2.3 Technology Readiness Index and technology adoption

One of the numerous ideas that have been widely applied to assess and verify users' adoption and acceptance of technology is the TRI, which was put up by Parasuraman as a framework for describing how users generally accept technology. "Technology readiness" states to user's inclination to apply modern technologies to achieve their goals personally & professionally. [11]. TRI 2.0, a 16-item TRI scale with four characteristics, was developed by [12] in response to the expansion of business operations through websites & social media. It is proposed that consumer attitudes and perceptions regarding technology have both positive and negative effects [23]. Discomfort & insecurity are inhibitors, whereas innovativeness and optimism are enablers in the four dimensions of TRI 2.0 [12]. Innovativeness states conviction for inventiveness, optimism provides control advantage, adaptability, and efficacy [24]. The user's lack of ease with technology and control over it are factors contributing to discomfort. While anxiety and uncertainty over technology's capacity to achieve objectives are represented by insecurity [24,25]

2.4 Trust in Advanced Digital Financial Technologies

In several scientific fields, including online banking, social psychology, and e-commerce, trust is the conviction that, based on past experiences, people will behave in a way that meets one's expectations going forward [26]. Trust is an act and a conviction that one is confident in a person or thing's qualities [27]. According to social psychology, trust is what buyers and sellers expect and are prepared to do during a transaction. Trust's mediating effect in the setting of robo-advisors is still poorly understood, despite the fact that previous research has mostly examined trust as a direct antecedent of adoption [13]. Particularly in discipline where automated decision-making does not include human supervision, trust will play an important role as it reduces perceived risk and boosts confidence while making in digital financial decision.

2.5 Technology readiness, trust and behavioral intention

Previous research suggests a strong association between technology readiness and trust in digital systems. Those who are higher in optimism and innovativeness tend to exhibit greater trust in digital systems, However, those who experience discomfort and insecurity are more inclined to be suspicious of these systems [28]. Therefore, trust acts as a mediating factor that translates technology readiness into BI. Earlier studies [29,30] contend that optimists and innovators will view new technology as reliable, worthwhile, and more realistic, which will increase trust. However, feelings of discomfort & insecurity have raised the threats, resulting in a lack of confidence. Particularly it's important when it comes to Fintech, because trust is a crucial component [31].

3. Research Methodology

3.1 Research Design

This study assesses users' inclination to employ robo-advisory services in the metaverse using a quantitative research technique.

3.2 Population and sample

Through the adaptation of a validated measurement scale from previous research, a standardised questionnaire was created to gather primary data. Data were collected online through Google Forms. To select the number of participants, G*Power 3.1 software & for the adequacy of sample size for SEM that was verified using [32] SEM sample size calculator. Following the recommendations of [33] for behavioral research, a medium effect size (0.30), statistical power of 0.80, and significance level of 0.05 were considered appropriate. Considering the number of latent and observed variables in the proposed model, the recommended sample size was lower than the obtained sample of 270 respondents, indicating that the sample size was adequate for PLS-SEM analysis & data were gathered from Indian retail investors (18 years and above) in the Delhi NCR region who participate in any securities and possess basic financial literacy, using purposive sampling.

3.3 Instrument Development

The independent variables were measured using TRI 2.0 [12], trust was operationalised as a mediating variable using the scale proposed by [34] and the dependent variable, behavioural intention, was measured by adapting a scale introduced by [35], with minor contextual modifications to suit the metaverse robo-advisory setting as shown in **Figure 1**. To ascertain the validity of the instrument, a total of 27 respondents participated in the pilot test [36]. The fact that Cronbach's Alpha for every scale is more than 0.70 indicates the instrument's trustworthiness. The questionnaire also included screening questions to assess respondents' familiarity with and prior use of robo-advisory services; however, prior use was not a prerequisite for participation, as the study focuses on pre-adoption perceptions and intentions toward an emerging technology.

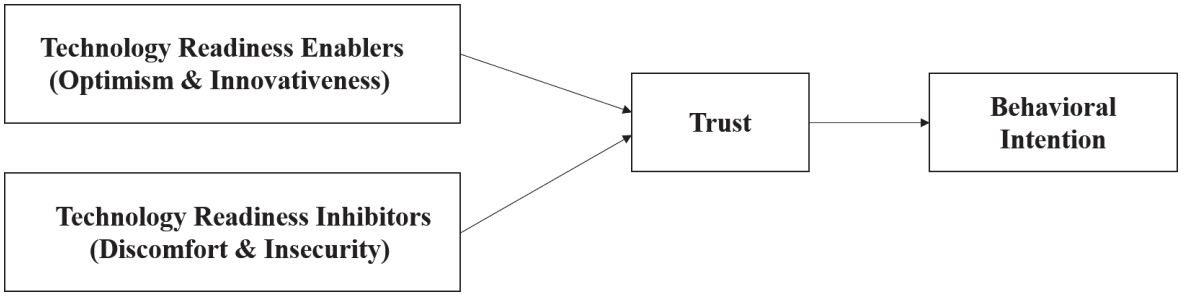

Figure 1. Conceptual Model

Source: Author's own compilation

3.4 Research Model and Hypotheses Development

H_1: Technology readiness enablers (optimism and innovativeness) have a positive and significant effect on trust in metaverse robo-advisory services.

H_2: Technology readiness inhibitors (discomfort and insecurity) have a negative and significant effect on trust in metaverse robo-advisory services.

H_3: Trust has a positive and significant effect on behavioral intention to adopt metaverse robo-advisory services.

H_4: Trust mediates the relationship between technology readiness (enablers and inhibitors) and behavioral intention to adopt metaverse robo-advisory services.

3.5 Data analysis

Statistical software SPSS 26.0 was utilized for elementary statistical analysis.

The structural equation program Smart PLS 4.1.0.7 was used for focused validity, discriminant validity, and hypothesis testing. The path coefficients, t-statistics, and coefficient of determination (R^2) between the variables in the research model were obtained using the structural model.

4. Results and Discussion

Figure 2 below shows the measurement model, which contains the four independent variables: optimism (OPT), innovativeness (INN), discomfort (DIS), and insecurity (INS), trust as a mediating variable, and behavioral intention (BI) as a dependent variable.

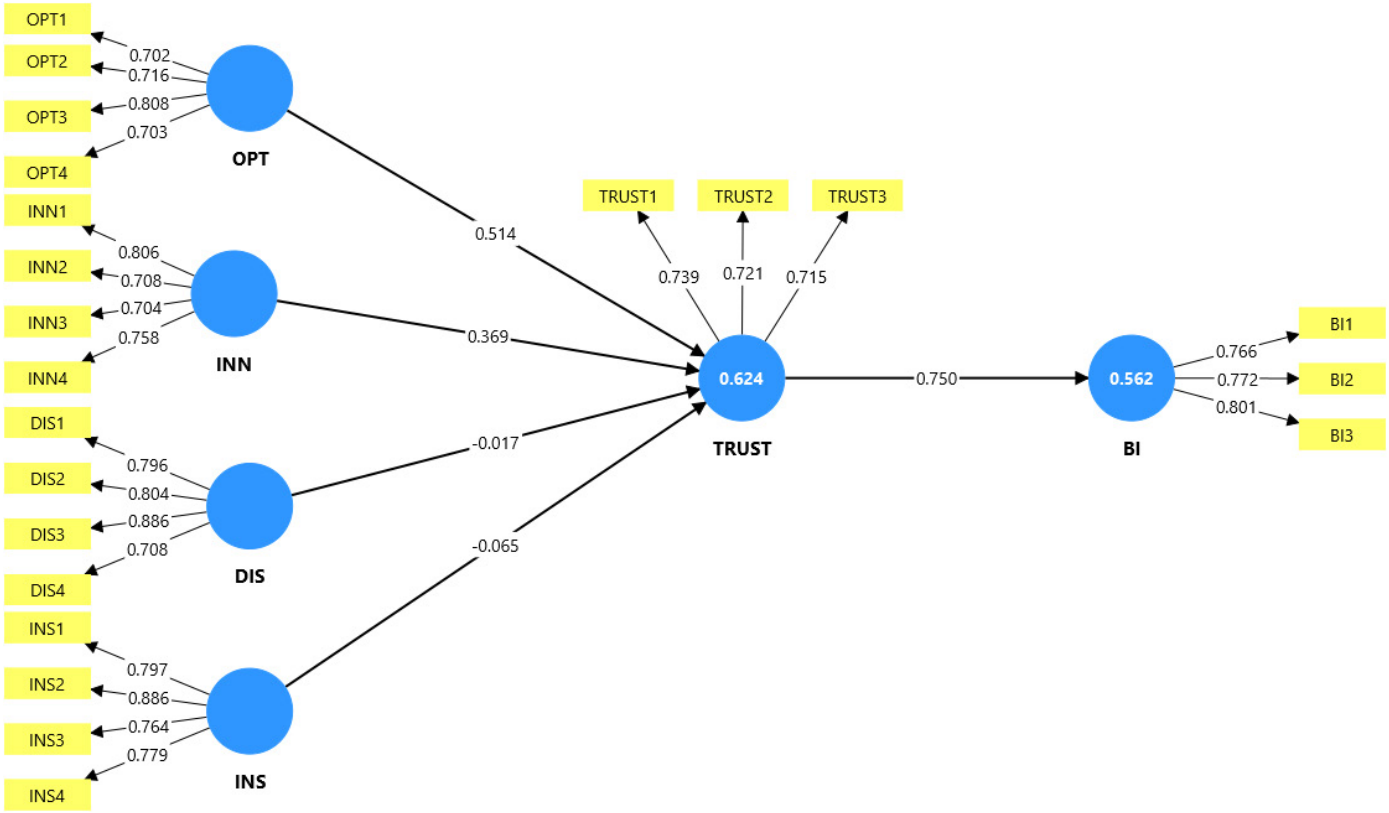

Figure 2. Measurement Model

Source: Author's own compilation

As shown in **Table 1**, Factor loading, CR, AVE, and VIF all satisfy the requirements proving the validity and reliability of the questionnaire. To calculate construct reliability factor loading of the items was assessed [37]. When an item's factor loading value is more than 0.7, it means it has strong reliability or vice versa. No items were removed from the model as all items measuring the construct have values greater than 0.7. Furthermore, the goal of convergent validity is to quantify how comparable the outcomes of many indicators while looking at the same dimension are. In this study, PLS SEM is used for composite reliability (CR) and average variance extracted (AVE) analysis.[38]. The CR must then be 0.7, indicating that every question has internal consistency and corresponds to the same dimension [39]. Lastly, there is no multicollinearity among the dimensions, as indicated by the variance inflation factor (VIF) values being less than 3.

Table 1. Measurement Model Assessment

Dimensions	Items	Factor Loadings	VIF	CR	AVE	Cronbach Alpha
Optimism	OPT1	0.702	2.097	0.823	0.539	0.824
	OPT2	0.716	2.008			
	OPT3	0.808	2.037			
	OPT4	0.703	2.064			
Innovativeness	INN1	0.806	2.067	0.833	0.555	0.833
	INN2	0.708	1.834			
	INN3	0.704	1.983			
	INN4	0.758	2.053			
Discomfort	DIS1	0.796	2.266	0.877	0.642	0.878
	DIS2	0.804	2.383			
	DIS3	0.886	2.178			
	DIS4	0.708	2.299			
Insecurity	INS1	0.797	2.367	0.882	0.652	0.882
	INS2	0.886	2.328			
	INS3	0.764	2.301			
	INS4	0.779	2.109			
Behavioral Intention	BI1	0.766	1.720	0.823	0.608	0.823
	BI2	0.772	1.897			
	BI3	0.801	1.994			
Trust	TRUST1	0.739	1.721	0.769	0.526	0.768
	TRUST2	0.721	1.550			
	TRUST3	0.715	1.501			

Source: Author's own compilation

Table 2, the result of discriminant validity was obtained using the help of Fornell-Larker criteria. Discriminant validity assures that one construct is empirically different from other constructs in the model [40] The present study fulfils this criterion.

Table 2. Fornell-Larker Matrix for study constructs

Constructs	BI	DIS	INN	INS	OPT	TRUST
BI	0.780					
DIS	0.012	0.801				
INN	0.396	-0.075	0.745			
INS	-0.082	-0.138	-0.196	0.808		
OPT	0.427	-0.071	0.526	-0.125	0.734	
TRUST	0.750	-0.072	0.653	-0.199	0.718	0.725

Source: Author's own compilation

Table 3 shows Model fit indices, such as chi-sq./df (2.089); RMSEA (0.063); GFI=0.880; AGFI (0.852); NFI (0.856); TLI (0.908); CFI (0.918), and SRMR (0.076). While the NFI was slightly below, all other indices were within acceptable limits, suggesting that the model offers a satisfactory explanation of the observed data.[31].

Table 3. Model Fit Summary

Model Fit Statistics	**Chi-Square= 426.056** **d.f = 204.000** **p value = 0.000**	
	Model Value	**Recommended Value**
RMSEA	0.063	≤0.08
GFI	0.880	≥0.80
AGFI	0.852	≥0.844
NFI	0.856	≥0.90
TLI	0.908	≥0.90
CFI	0.918	≥0.90

Source: Author's Own Compilation

Table 4 demonstrates the result of hypothesis testing. As Technology readiness enablers, optimism ($\beta = 0.421$, $p < .001$) & innovativeness ($\beta = 0.327$, $p < .001$) have a strong effect on trust. Thus, H1 is supported, which indicates that a person who is highly optimised and innovative exhibits greater trust in metaverse robo-advisor services. Technology readiness inhibitors, including insecurity ($\beta = –0.067$, $p > .05$) and discomfort, have no noticeable effect on trust ($\beta = –0.021$, $p > .05$). So H2 is not supported. The result confirms that trust shows a significant and positive effect ($\beta = 0.597$, $p < .001$) on behavioral intention, indicating that user's behavioral intention is influenced by the higher level of trust. So H3 is supported. As technology enablers have a robust influence on trust, and trust has a significant relationship with behavioral intention, trust serves as a mediating mechanism in enablers and behavioral intention optimism ($\beta = 0.251$, $p < .001$) & innovativeness ($\beta = 0.195$, $p < .001$) whereas, insecurity & discomfort are not significant with trust($\beta = –0.040$, $p > .05$) and ($\beta = –0.012$, $p > .05$) so mediation is not supported for this. Therefore, H4 is supported for innovativeness and optimism while the indirect effect of trust with insecurity and discomfort is insignificant.

Table 4. Hypothesis Testing

Hypothesis	**Construct Relationship**	**Path coefficient(b)**	**T-value**	**p-Value**	**Result**
H1	OPT > TRUST	0.421	7.866	0.000	Supported
	INN > TRUST	0.327	6.104	0.000	Supported
H2	DIS > TRUST	-0.021	0.377	0.706	Not Supported
	INS > TRUST	-0.067	1.377	0.169	Not Supported
H3	TRUST > BI	0.597	11.456	0.000	Supported
H4	OPT > TRUST > BI	0.251	6.608	0.000	Supported

Continuation Table:

Hypothesis	Construct Relationship	Path coefficient(b)	T-value	p-Value	Result
	INN > TRUST > BI	0.195	5.357	0.000	Supported
	DIS > TRUST > BI	-0.012	0.375	0.708	Not Supported
	INS > TRUST > BI	-0.040	1.372	0.170	Not Supported

Source: Author's Own Compilation

Additionally, the amount of variance that can be accounted for by exogenous factors in relation to endogenous variables is known as R^2. R^2 ranges from 0 to 1, and the closer it is to 1, more predictive the research model will be. R^2 value of behavioral intention is 0.562, indicating 56.2% of variance in BI is explained by predictor variable. Likewise, R^2 value for trust is 0.624, shows independent construct explains 62.4% of the variance in trust. Consequently, BI and trust demonstrate moderate to substantial explanatory power. The study is consistent with the result of [28] that enablers significantly influence trust, as it shows the people who are more open & confident are more likely to use metaverse robo-advisory service. While , contrary to prior research by [41] which shows inhibitors are significant with trust but present study did not find any substantial role of discomfort and insecurity with trust. Furthermore, the study is inconsistent with the result of [42] as emphasizing the important role of trust in the adoption of these services.

5. Conclusion and Implications

The study concluded that users with high optimism and innovativeness show greater trust in adopting metaverse robo-advisor services. On the other hand, those who are highly insecure and discomfort are found to have an insignificant relationship with trust. Furthermore, it was discovered that trust had a substantial association with BI. Similarly, mediation analysis also reveals that enablers indirectly influence BI through trust, while inhibitors do not exhibit a significant effect.

From a theoretical viewpoint, this study expands the application of TRI to the unexplored domain, such as metaverse- robo advisory services. This study contributes to the fintech and metaverse domains by integrating technological and psychological factors to explain behavioral intentions. From a practical viewpoint, this study may useful for financial institutions, robo-advisor developers and policymakers. By enhancing transparency, data security, users' education, discomfort and insecurity may be reduced, and trust may be built so that people can make informed financial decisions and promote broader financial inclusion within the society.

6. Limitations and Recommendations

In spite of its contributions, the study also has its shortcomings. Firstly, the study is restricted to investors in Delhi NCR, which hinders generalizability. Secondly, this study has taken the Technology Readiness Index; there are other models for technology adoption. On the other hand, the study included the perceived trust only as a mediating factor. Thirdly, the study has worked on the metaverse robo advisor services, which is itself an early stage, and the study focused on BI rather than actual usage. Lastly, it focuses on indirect effects without estimating the direct effects between TRI and BI.

Future research can address these limitations by employing a longitudinal study

and a comparative study between various investors. The future research can also check direct effects and also include various technology models,various mediating variables can be taken, such as perceived risk, COVID-19 Pandemic, etc.

Author Contributions: Conceptualization, supervision, analysis and manuscript review, MM; data collection, analysis and manuscript writing, AC. Both authors approved the final version of the manuscript.

Conflict of interest: The authors declare no conflict of interest.

Ethics Approval and Consent to Participate: The authors' institution does not have an Institutional Review Board (IRB) or Ethics Committee responsible for reviewing anonymous, questionnaire-based social science research. Therefore, formal ethical approval was not required. Participation was voluntary, and informed consent was obtained electronically from all participants before they completed the questionnaire. Participants were informed that they could withdraw at any time without penalty. All responses were collected anonymously, kept confidential, and used solely for academic research. Only the authors had access to the collected data, and all results are reported in aggregate form.

Funding: This research received no external funding.

References

1. Huang X. The technological essence and philosophical significance of the Metaverse. Metaverse. 2021, 2(2): 1–12. https://doi.org/10.54517/met.v2i2.1786
2. Kuru K. Metaomnicity: Toward immersive urban metaverse cyberspaces using smart city digital twins. IEEE Access. 2023, 11: 43844–43868. https://doi.org/10.1109/ACCESS.2023.3272890
3. Paul R, Thomas S, Sulu M. Metaverse and the future of work—A higher education perspective. In: Metaverse Driven Intelligent Information Systems. Springer, 2024. pp. 127–138. https://doi.org/10.1007/978-3-031-72418-3_8
4. Cheng R, Wu N, Varvello M, et al. Are we ready for metaverse? A measurement study of social virtual reality platforms. In: Proceedings of the 22nd ACM Internet Measurement Conference, 2022; pp. 504–518. https://doi.org/10.1145/3517745.3561417
5. Xi N, Chen J, Gama F, et al. The challenges of entering the metaverse: experiment on the effect of extended reality on workload. Information Systems Frontiers, 2023, 25(2): 659–680. https://doi.org/10.1007/s10796-022-10244-x
6. Dwivedi YK. Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. International Journal of Information Management. 2022, 66: 102542. https://doi.org/10.1016/j.ijinfomgt.2022.102542
7. Kulkarni MS, Patil KP, Pramod D. The role of robo-advisors in behavioural finance shaping investment decisions. Cogent Economics & Finance. 2025, 13(1): 2571403. https://doi.org/10.1080/23322039.2025.2571403
8. Mohammed Faiz-ul-faham N, Shekhar SK. Evolution, significance, and emerging trends of robo-advisors in investment management. Science Talks. 2024, 9: 100308. https://doi.org/10.1016/j.sctalk.2024.100308
9. Garg K. Robo-advisors: Are they channels of rational decision making in metaverse? In: Entrepreneurship and Creativity in the Metaverse. IGI Global, 2024. pp. 63–76. https://doi.org/10.4018/979-8-3693-1734-1.ch006
10. Chen H, Huang F. A frontier review on the convergence of metaverse, artificial intelligence, and stock markets. Metaverse. 2025, 6(4). https://doi.org/10.54517/m8262
11. Parasuraman A. Technology readiness index (TRI): A multiple-item scale to measure readiness to embrace new technologies. Journal of Service Research. 2000, 2(4): 307–320. https://doi.org/10.1177/109467050024001
12. Parasuraman A, Colby CL. An updated and streamlined technology readiness index: TRI 2.0. Journal of Service Research. 2015, 18(1): 59–74. https://doi.org/10.1177/1094670514539730
13. Singh MP, Singh M. Exploring the role of behavioral intention and trust in technology adoption: A Meta-UTAUT model approach. Journal of Reliability and Statistical Studies. 2025, 18(2): 399–418. https://doi.org/10.13052/jrss0974-8024.1826

14. Stephenson N. Snow Crash. New York: Bantam Books; 1992.
15. Richter S, Richter A. What is novel about the metaverse? International Journal of Information Management. 2023, 73: 102684. https://doi.org/10.1016/j.ijinfomgt.2023.102684
16. Mishra A, Masih J, Rajendran I, et al. From lecture halls to metaverse worlds: A new era in engineering education. International Journal of Engineering Pedagogy. 2025, 15(8). https://doi.org/10.3991/ijep.v15i8.59069
17. Priya VD, Doraikannan S, Vinitha V, et al. Revolutionizing medical care: The role of metaverse and NFTs in modern healthcare. In: Digital Transformation and XAI in Healthcare. CRC Press, 2025. pp. 227–260. https://doi.org/10.1201/9781003605416-13
18. Dhingra S, Abhishek. Metaverse adoption: A systematic literature review and roadmap for future research. Global Knowledge, Memory and Communication. 2025, 74(9–10): 3242–3273. https://doi.org/10.1108/GKMC-08-2023-0287
19. Citi Global Perspectives & Solutions. Metaverse and money: Decrypting the future. 2022. Available online: https://www.citigroup.com/global/insights/video-metaverse-and-money-decrypting-the-future (accessed on 19 February 2026).
20. Bruckes M, Westmattelmann D, Oldeweme A, et al. Determinants and barriers of adopting robo-advisory services. In: Proceedings of the 40th International Conference on Information Systems (ICIS 2019), 15–18 December 2019; Munich, Germany. Available online: https://aisel.aisnet.org/icis2019/blockchain_fintech/blockchain_fintech/2 (accessed on 20 February 2026).
21. Fatima S, Chakraborty M. Adoption of artificial intelligence in financial services: The case of robo-advisors in India. IIMB Management Review. 2024, 36(2): 113–125. https://doi.org/10.1016/j.iimb.2024.04.002
22. Statista. Robo-advisors worldwide. Available online: https://www.statista.com/outlook/fmo/wealth-management/digital-investment/robo-advisors/worldwide (accessed on 19 February 2026).
23. Omofowa S, Dauda AB. Technology readiness index model and online transaction: Artificial intelligence perspective. International Journal of Marketing and Management Sciences. 2024, 4(2): 7-34.
24. Chang YW, Chen J. What motivates customers to shop in smart shops? The impacts of smart technology and technology readiness. Journal of Retailing and Consumer Services. 2021, 58: 102325. https://doi.org/10.1016/j.jretconser.2020.102325
25. Kautish P, Sharma R, Khare A. Multi-item scale development for online consumption emotion construct and psychometric evaluation for relationship marketing. Journal Relationship Marketing. 2021, 20(2): 91–134. https://doi.org/10.1080/15332667.2020.1717282
26. Roca JC, García JJ, de la Vega JJ. The importance of perceived trust, security and privacy in online trading systems. Information Management & Computer Security. 2009, 17(2): 96–113. https://doi.org/10.1108/09685220910963983
27. Mayer RC, Davis JH, Schoorman FD. An integrative model of organizational trust. Academy of Management Review. 1995, 20(3): 709–734. https://doi.org/10.5465/amr.1995.9508080335
28. Rahardja U, Hapsari ID, Putra POH, et al. Technological readiness and its impact on mobile payment usage: A case study of Go-Pay. Cogent Engineerin. 2023, 10(1): 2171566. https://doi.org/10.1080/23311916.2023.2171566
29. Lin JC, Chang H. The role of technology readiness in self-service technology acceptance. Managing Service Quality: An International Journal. 2011, 21(4): 424–444. https://doi.org/10.1108/09604521111146289
30. Chen JV, Jubilado RJM, Capistrano EPS, et al. Factors affecting online tax filing: An application of the IS success model and trust theory. Computers in Human Behavior. 2015, 43: 251–262. https://doi.org/10.1016/j.chb.2014.11.017
31. Devlin JF, Roy SK, Sekhon H, et al. Trust and FinTech: A review and research agenda. Electronic Markets. 2025, 35: 62. https://doi.org/10.1007/s12525-025-00803-w
32. Soper DS. A-priori sample size calculator for structural equation models [Internet]. 2024 [cited 2026 May 18]. Available from: Daniel Soper SEM Calculator
33. Cohen J. Statistical power analysis for the behavioral sciences [Internet]. 2nd ed. Hillsdale, NJ: Lawrence Erlbaum Associates, 1988 [cited 2026 May 18]. Available from: Open Library – Statistical Power Analysis for the Behavioral Sciences
34. Jarvenpaa SL, Tractinsky N, Vitale M. Consumer trust in an Internet store. Information Technology and Management. 2000, 1(1): 45–71. https://doi.org/10.1023/A:1019104520776
35. Venkatesh V, Thong JYL, Xu X. Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. MIS Quarterly. 2012, 36(1): 157–178. https://doi.org/10.2307/41410412
36. Johanson GA, Brooks GP. Initial scale development: Sample size for pilot studies. Educational and Psychological Measurement. 2010, 70(3): 394–400. https://doi.org/10.1177/0013164409355692

37. Hair JF, Anderson RE, Babin BJ, et al. Multivariate Data Analysis: A Global Perspective. 7th ed. Upper Saddle River, NJ: Pearson, 2010.
38. Fornell C, Larcker DF. Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research. 1981, 18(1): 39–50. https://doi.org/10.2307/3151312
39. Hulland J. Use of partial least squares (PLS) in strategic management research: A review of four recent studies. Strategic Management Journal. 1999, 20(2): 195–204. https://doi.org/10.1002/(SICI)1097-0266(199902)20:2%3C195::AID-SMJ13%3E3.0.CO;2-7
40. Akbari M, Hooshmand M, Gorji AA. Digital entrepreneurship in higher education: A structural model based on individual, institutional, and environmental factors. Business, Management and Technology Perspectives. 2026, 3(1): 3891. https://doi.org/10.54517/bmtp3891
41. Gupta A, Kumar N, Koner J, et al. Trust and traceability: Unpacking technology readiness in blockchain adoption for supply chain management. International Journal of Innovative Technology and Interdisciplinary Sciences. 2025, 8(4): 1137–1172. https://doi.org/10.15157/IJITIS.2025.8.4.1137-1172
42. Queiroz MM, Wamba SF. Blockchain adoption challenges in supply chain: An empirical investigation of the main drivers in India and the USA. International Journal of Information Management. 2019, 46: 70–82. https://doi.org/10.1016/j.ijinfomgt.2018.11.021