

# The Role of Artificial Intelligence and Cybersecurity Awareness on Customers' Net Benefit: Insights from Fintech Banking Services

**Hasan Alhanatleh:** Business Faculty, Amman Arab University, [h.hanatleh@aau.edu.jo](mailto:h.hanatleh@aau.edu.jo)

**Amineh Khaddam:** Business Faculty, Amman Arab University, [aminehkhaddam@aau.edu.jo](mailto:aminehkhaddam@aau.edu.jo)

**Amro Alzghoul:** Business Faculty, Amman Arab University, [azghoul@aau.edu.jo](mailto:azghoul@aau.edu.jo)

## Abstract

This study seeks at providing new visions regarding the use of fintech-banking services in terms of artificial intelligence capabilities and cybersecurity awareness to determine consumers' net benefits in Jordan. Rely on structural equation model approach, the findings show that artificial intelligence capabilities provide a significant role on intention to use of fintech-banking services in Jordan. The findings also discover that cybersecurity awareness has an ability to artificial intelligence capabilities and intention to use of fintech-banking services in Jordan. Furthermore, the findings confirm that intention to use of fintech-banking services provides a considerable influence on consumers' net benefit in Jordan. The critical theoretical and practical contributions of the study domains have been provided in their specific parts.

**Keywords:** artificial intelligence capabilities, cybersecurity awareness, fintech, net benefit, banks, Jordan.

## 1. Introduction

The services industry among bank sectors have witnessed various technology revaluations to facilitate their practices (Aloulou et al., 2024). Most of business fields around the world, especially emerging countries, have sought to reform their fintech services in terms of achieving advantages (Jafri et al., 2024). However, both artificial intelligence technologies and cybersecurity algorithms have been considered as major tools affecting the continued use of technology (Alhanatleh et al., 2024). Both platforms have contributed to fintech industries through re-designing and restructuring financial services (Karakı & Al-Kasasbeh, 2024). These advancements in fintech technologies have reinforced consumers' experiences during conducting financial activities, leading to establish a reliable and strong relationship (Alt et al., 2024). It has been indicated that strategies of banks have realized that the sustainability of fintech services depends on adopting modern technologies such artificial intelligence, providing financial services through novel approaches (Jameaba, 2024).

The newest confirmations in existing literature have asserted that fintech banking services have gained a considerable interests of specialists and scholars to provide sufficient understanding toward their usage and benefits from various perspectives (Bhat et al., 2024). It has been acknowledged that consumers consider as a major determinant of fintech banking services success (Aldaarmi, 2024). There have been a consensus that fintech banking services based on artificial intelligence offer an immersive knowledge and add value for consumers during their usage (Law, 2024). In addition, security criteria of consumers suggests to be a primary stressor factor that critically affect fintech banking services usage (Kanungo, 2024). Recent literature has confirmed that when consumers are aware about several kinds of technology crimes in this virtual world, the rate of usage will be increased (Alhanatleh et al., 2024). However, exploring customers' attitudes

and knowledge toward their use of fintech banking services is a primary process for providing a comprehensive view regarding fintech banking services development. As a result, the major motivation of this research is to understand the role of cybersecurity awareness and artificial intelligence capabilities on customers' behavior regarding using fintech banking services in Jordan. This study also investigates how customers can benefit from fintech banking services usage.

## 2. Literature review

The paradigm of fintech has been deployed among various business settings that provides important practical implications in the field of financial services inclusion (Belanche et al., 2019). To reinforce the diffusion of fintech banking services, financial industries have integrated fintech services with other digital technologies like artificial intelligence platforms (Belanche et al., 2019). This combination positively affects the potential advantages of fintech banking services usage, especially for consumers (Mbaidin et al., 2024).

The modern empirical confirmations indicated that artificial intelligence applications have an ability to influence consumers' trends toward using fintech-banking services (Ashta & Herrmann, 2021). In this context, artificial intelligence tools provide wide capabilities that assist in increasing the spread of fintech banking services among clients (Met et al, 2020). It has been indicated that employing artificial intelligence among fintech banking services provides a significant role in enhancing customers' experiences and knowledge of usage (Dantsoho et al., 2021). As critical tools in artificial intelligence, ChatBot and robotics applications have increased the productivity of digital banking services (Mhlanga 2020). However, the enhancements in artificial intelligence applications offer a considerable influence on consumers' attitude regarding performing their routines practices based on fintech banking services (Ashta & Herrmann, 2021). Moreover, applying artificial intelligence tools among fintech banking services has a capacity to provide various advantages for consumers such as proposing new business models, bolstering consumers' experience, maximizing effectiveness and efficacy, and adding a new value (Parthiban & Adil, 2023). Accordingly, the following hypothesis is conceptualized:

**H1:** *Artificial intelligence capabilities positively influences on intention to use of fintech banking services in Jordan*

The evidences in existing literature have acknowledge that cybersecurity awareness provides a considerable influence on artificial intelligence applications usage and intention to use of particular technology (Nadella & Gonaygunta, 2024). However, the advancements in cybersecurity algorithms paly a critical role in increasing the demand of artificial intelligence applications and making customers more confidant to conduct their digital practices (Jawhar et al., 2024). It has been affirmed that user provide a positive attitude toward artificial intelligence tools usage when the high quality of security is offered (Choithani et al., 2024). Moreover, a hug number of investigations have discovered that cybersecurity awareness considers as a major factor for determining consumers' trends to use or adopt fintech-banking services (AL-Dosari et al., 2024). Providing quality information and knowledge of security toward using fintech-banking services positively affects consumers in short and long term usage (Oladipo et al., 2024). It has been confirmed that offering information and training regarding various type of digital crimes and

attacks has an ability to affect customers' behavior for fulfilling their banking and financial activates based on fintech-banking services (Alhanatleh et al., 2024). Within the present study, cybersecurity awareness suggests being a major component in increasing the capabilities of artificial intelligence among fintech banking services, thus, the following hypotheses are conceptualized:

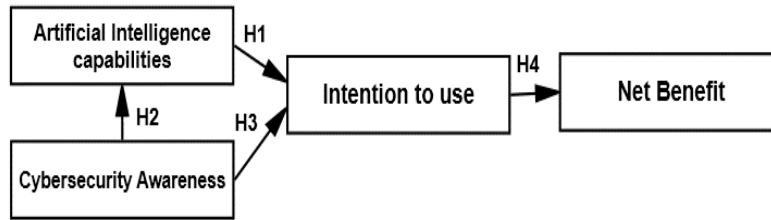
**H2:** *Cybersecurity awareness positively influences on artificial intelligence capabilities of fintech banking services in Jordan*

**H3:** *Cybersecurity awareness positively influences on intention to use of fintech banking services in Jordan*

Venkatesh et al. (2012) define intention to use of fintech banking services to describe customers' future trends to adopt fintech-banking services. Intention to use determinant has been widely used to explain and predicate consumers' attitude and trends to continue use of fintech-banking services (Alhanatleh, 2021). It has been uncovered that using fintech-banking services brings several benefits for consumers. Fintech-banking services enable consumers to conduct their banking and financial services in terms of mobility, real-time response, and immersive experiences (Nguyen et al., 2023). Moreover, deploying fintech-banking services based on artificial intelligence capabilities suggests to create a new business model for both banks and customers (Alshurafat et al., 2024). It has been discovered that the use of fintech-banking services allows consumers to personalize and customizes their services within fintech services settings that expects to reinforce customers' journey and have benefits (Roh et al., 2024). Based on that, consumers can gain various benefits during their using of fintech-banking services such as generating a new value, reducing effort and time to perform their digital banking services, establishing an immersive knowledge and experiences, and decreasing expenditures of conducting their digital banking services (Benjamin et al., 2024). In total, using fintech-banking services suggests to present benefits for both consumers and banks, resulting in accomplishing a robust relationship between them. Thus, the following hypothesis is conceptualized:

**H4:** *Intention to use of fintech-banking services positively influences on net benefit of fintech-banking services in Jordan.*

Figure 1 clarifies the conceptual framework of this study that explains the interactions between the constructs, leading to determine consumers' net benefits of using fintech-banking services in Jordan. The model of this study provides various features to the study domain that investigates the role of artificial intelligence capabilities and cybersecurity awareness to explore consumers' benefits and value of adopting fintech-banking services in Jordan. The model of this study differs from other literature frameworks through joining artificial intelligence and cybersecurity awareness to determine the degree of customers' usage of fintech-banking services in emerging nations represented by Jordan country.



**Figure 1.** Conceptual framework of fintech-banking services.

### 3. Methodology

The present study entails the quantitative methodology to reach its purposes and objectives by establishing the conceptual framework based on relevant literature review in domain of fintech-banking services, developing the research instrument (survey method), determining the sample size from target population, identifying the data collection procedures, and clarifying the data analysis processes. In terms of justifying instrument items, the items of artificial intelligence capabilities construct were adapted rely on six-items from relevant literature as mentioned in (Rajkhowa & Das, 2020). The items of cybersecurity awareness construct were adapted rely on four-items from relevant literature as mentioned in (Limna et al., 2023). The items of intention to use construct were adapted rely on four-items from relevant literature as mentioned in (Venkatesh et al., 2012). The items of net benefit construct were adapted rely on four-items from relevant literature as mentioned in (Alhanatleh, 2020). All constructs items of fintech-banking services model have been subjected into Five-point Likert scale measurements, gradually encoding from 1 as “*Totally disagree*” to 5 as “*Totally agree*” that used to facilitate the analysis procedures.

The population of the current research was Jordanian consumers of fintech-banking services. To obtain the required sample size of this study, convenience-sampling approach used to determine customers’ net benefit of using fintech-banking services as this method has an ability to produce reliable an accurate findings as asserted by (Cohen et al., 2017). Based on that, the minimum number of customers of finetch-banking services is 385 to perform analysis stage as ensured by (Morgan, 1996). To reach the sample of this research, authors prepared an electronic version of survey, making the data collection more easy and quick. E-Survey has been published through various type of digital platforms such as Facebook and WhatsApp app. the number of consumers who received e-survey to fulfill the items was 460. Just 417 consumers completely responded the questionnaire. After performing some statistical examinations, just 389 were qualified to finalize the analysis processes and obtain results. However, the data collection procedures was held on May 25, 2024 and took two weeks to complete.

### 4. Results

SPSS-AMOS software have been used to main objectives this research as both tools provide accurate and valid outcomes. Two waves analysis were applied in this study to provide complete results regarding the developed hypotheses of model, which are, Confirmatory factor analysis to support the model fit indices and validity of model and Structural equation model to retrieve the hypotheses findings. At the beginning, all constructs’ items were subjected into one-pool

confirmatory factor analysis (Awang, 2014). The primary outcome of this process is to ensure items' factor loading (cut-off value  $\geq .5$ ) and covariance correlation characteristics between constructs (cut-off value  $\leq .85$ ) as proposed by (Raza & Awang, 2021). Thereafter, the model fit indices regarding fintech-banking services model of this study can be evaluated based on accepted values as suggested by (Talwar et al., 2019). Table 1 provides significant empirical evidences that claim that fintech-banking services model has a goodness fit.

**Table 1.** Goodness fit indicators of fintech-banking services model.

Indices	RMSEA	GFI	AGFI	CFI	TLI	NFI	ChiSq /df
Findings	.062	.920	.891	.946	.935	.917	2.644
Criteria	< 0.08	>0.85 or >0.90	>0.85 or >0.90	>0.85 or >0.90	>0.85 or >0.90	>0.85 or >0.90	< 5 or < 3
Decision	Ideal	Ideal	Contented	Ideal	Ideal	Ideal	Ideal

To confirm the reliability and validity of fintech-banking services model, three major validations should be calculated which are convergent validity, construct reliability and discriminant validity. In this study, convergent validity was evaluated based on the computation of factor loading and Average Variance Extracted (cut- off values for both  $\geq .5$  ) and construct reliability was evaluated based on the computation of Cronbach Alpha and composite reliability (cut- off values for both  $\geq .7$ ) as asserted by (Hermida, 2015; Brown, 2015). Table 2 provides empirical evidences regarding convergent validity and composite reliability of fintech-banking services model that have been accomplished.

**Table 2.** The convergent validity and construct reliability of fintech-banking services model.

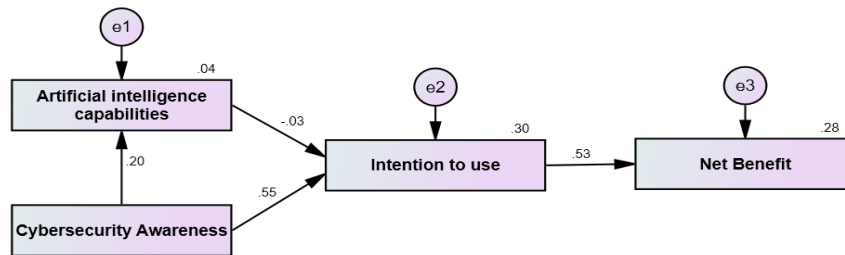
Constructs	Coding Items	Convergent validity		Construct reliability	
		Loaded items	AVE	$\alpha$	CR
<b>Artificial intelligence capabilities</b>	CAP.1	.845	.568	.877	.885
	CAP.2	.764			
	CAP.3	.867			
	CAP.4	.824			
	CAP.5	.626			
	CAP.6	.534			
<b>Cybersecurity Awareness</b>	CYA.1	.620	.554	.829	.831
	CYA.2	.756			
	CYA.3	.836			
	CYA.4	.748			
<b>Intention to use</b>	ITU.1	.795	.569	.833	.840
	ITU.2	.645			
	ITU.3	.794			
	ITU.4	.773			
<b>Net Benefit</b>	NEB.1	.696	.565	.835	.838
	NEB.2	.840			
	NEB.3	.756			
	NEB.4	.707			

The evaluation results of discriminant validity can be provided through entailing the following equation that claims: the square root of Average Variance Extracted values of constructs in bold font are more that the absolute values of inner-correlations in normal font as suggested by (Dijkstra & Henseler, 2015). Table 3 shows the summury outcomes regarding the discriminant validity of fintech-banking services model that have been fulfilled.

**Table3.** The discriminant validity of fintech-banking services model.

	1	2	3	4
<b>Cybersecurity Awareness</b>	<b>0.744</b>			
<b>Artificial intelligence capabilities</b>	0.182	<b>0.753</b>		
<b>Intention to use</b>	0.478	0.075	<b>0.754</b>	
<b>Net Benefit</b>	0.743	0.152	0.465	<b>0.752</b>

After performing the confirmatory factor analysis to achieve the reliability and validity measurements of fintech-banking services model, data were ready to conduct structural equation model for retrieving the developed hypotheses outcomes of this study. structural equation model provides the squared multiple correlations ( $R^2$ ) outcomes and the direct effect results between constructs as confirmed in Table 4 and figure 2. Figure 2 clarifies the total effect of  $R^2$  regarding the dependent factors. Firstly, The  $R^2$  finding of artificial intelligence capabilities is nearly .041, clarifying that the independent factor (cybersecurity awareness) describes 4.1% of the total variance effect on artificial intelligence capabilities of using fintech-banking services in Jordan. In addition to, The  $R^2$  findings of intention to use is about .297, clarifying that the independent factors (artificial intelligence capabilities and cybersecurity awareness) has an ability to interpret 29.7% of the total variance effect on intention to use fintech-banking services in Jordan. Lastly, The  $R^2$  finding of net benefit is nearly .283, meaning that the independent factor (intention to use) has an ability to describe 28.3% of the total variance effect on net benefit of using fintech-banking services in Jordan.



**Figure 2.** Retrieved outcomes of the hypotheses study.

The structural equation model provides hypotheses outcomes of fintech-banking services model in this study as obviously confirmed in Table 4. The outcomes of this study provide that artificial intelligence capabilities confirms a significant role on intention to use of fintch-banking services among consumers in Jordan ( $\beta=-.228^{***}$ ), indicating that the first hypothesis of fintch-banking services model is statistically affirmed. Additionally, the outcomes of this study provide that cybersecurity awareness confirms a significant role on artificial intelligence capabilities of using fintch-banking services among consumers in Jordan ( $\beta=.249^{***}$ ), indicating that the second hypothesis of fintch-banking services model is statistically affirmed. Furthermore, the outcomes of this study provide that cybersecurity awareness confirms a significant role on intention to use of fintch-banking services among consumers in Jordan ( $\beta=.704^{***}$ ), indicating that the third hypothesis of fintch-banking services model is statistically affirmed. Lastly, the outcomes of this study provide that intention to use confirms a significant role on net benefit of using fintch-banking services among consumers in Jordan ( $\beta=.433^{***}$ ), indicating that the fourth hypothesis of fintch-banking services model is statistically affirmed.

**Table 4.** The results of hypotheses regarding this study model.

	$\beta$	S.E.	C.R.	P
Artificial intelligence capabilities $\rightarrow$ Intention to use	-.228	.044	-3.634	***
Cybersecurity Awareness $\rightarrow$ Artificial intelligence capabilities	.249	.059	4.253	***
Cybersecurity Awareness $\rightarrow$ Intention to use	.704	.053	13.187	***
Intention to use $\rightarrow$ Net benefit	.433	.034	12.891	***

Significant P-Value: \* < 0.05, \*\* < 0.01, \*\*\* < 0.001.

## 5. Discussion

This research endeavors at providing new knowledge toward using fintech-banking services in terms of consumers' net benefit in Jordan. The outcomes of the first hypothesis discovered that the advancements in artificial intelligence technologies within finetch-banking services has an ability to influence consumers' behavior toward future using where these outcomes are in line with previous relevant literature as in (Ashta & Herrmann, 2021). The outcomes of the first hypothesis encourage Jordanian banks to adopt new trends of artificial intelligence applications within fintech-banking services and specialists of artificial intelligence technologies in finetch-banking services to produce new banking and financial services in terms of consumers' needs and requirements. Furthermore, the findings of the second hypothesis uncovered that cybersecurity awareness provides a considerable affect to increase artificial intelligence capabilities among fintech-banking services where these findings are in line with prior existing literature as in (Choithani et al., 2024). The outcomes of second hypothesis motivate top management of banks to increase consumers' cybersecurity awareness toward various type digital attacks and scientists in cybersecurity algorithms to develop new model of security regarding fintech-banking services. Moreover, the findings of the third hypothesis disclosed that cybersecurity awareness has a capacity to positively influence intention to use of fintech-banking services among consumers in Jordan where these findings are in line with prior relevant literature as in (Alhanatleh et al., 2024). These findings encourage banks managements to provide a comprehensive gaudiness of using fintech-banking services in terms of cybersecurity awareness. Finally, the findings of the fourth hypothesis indicated that intention to use provides an enormous role on consumers' net benefit of using fintech-banking services among consumers on Jordan where these findings are in line with previous existing literature as in (Roh et al., 2024). The findings of the fourth hypothesis suggest that adopting artificial intelligence tools within fintech-banking services provides many benefits for consumers such as enhancing their immersive experiences, saving cost of services, reducing their effort to conduct banking and financial services, engaging them in designing fintech-banking services, and gaining a new value.

This study has multiple challenges and limitations. Firstly, this study performed in Jordanian banks that there are various bank environments such as commercial and Islamic. Future trends may applied the same model with taking attention toward the role of bank type. In addition to, the results of this study should be generalized. Future works may use various methodologies such as multi- longitudinal and time series approaches to popularize the outcomes of this study. Adding other factors to the study model expects to provide other contributions in the field of this research like blockcahin capabilities, metaverse, cloud computing. Finally, consumers' behavior considers as changeable thing that need to investigate with various models and theories. Future works may investigate consumers' value co-creation, loyalty and various others.

## 6. Conclusion

The primary objective of this research is to provide new insights regarding the use of fintech-banking services from consumers net benefit perspectives in Jordan. The outcomes of this study contribute various theoretical and practical implications regarding financial industry literature and fintech-banking services. Theoretically, this study considers from few works that investigates the role of artificial intelligence capabilities to discover net benefit of using fintech-banking services among consumers in Jordan. In similar fashion, connecting cybersecurity awareness with artificial intelligence capabilities and intention to use provides a new theoretical vision to decide the real benefits of using fintech-banking services among consumers in Jordan. Practically, the outcomes revealed that deploying artificial intelligence application among fintech-banking services provide benefits and enhance consumers' experiences. The findings also confirmed that managements of banks in Jordan should be realized that cybersecurity awareness considers as stressor factor for increasing fintech-banking services usage and keeping consumers more confident. In addition, the results supported that cybersecurity awareness assists in arising the rate of artificial intelligence adoption among fintech-banking services in Jordan. Finally, the findings discovered that developing fintech-banking services within Jordanian banks expects to benefit consumers in terms of their future usage trends.

## References

1. Nguyen, L. T., Duc, D. T. V., Dang, T. Q., & Nguyen, D. P. (2023). Metaverse banking service: Are we ready to adopt? a deep learning-based dual-stage sem-ann analysis. *Human Behavior and Emerging Technologies*, 2023.
2. Alshurafat, H., Arabiat, O., & Shehadeh, M. (2024). The intention to adopt metaverse in Islamic banks: an integrated theoretical framework of TAM and religiosity intention model. *Journal of Islamic Marketing*.
3. Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS quarterly*, 157-178.
4. Limna, P., Kraiwanit, T., Siripipattanakul, S., Limna, P., Kraiwanit, T., & Siripipattanakul, S. (2023). The relationship between cyber security knowledge, awareness and behavioural choice protection among mobile banking users in Thailand. *International Journal of Computing Sciences Research*, 7, 1133- 1151.
5. Rajkhowa, B., & Das, A. (2020). Impact of artificial intelligence on customer experience. *International Journal Of Recent Technology And Engineering*, 9.
6. Alhanatleh, H. (2020). Assessing Open Source Software Success in Learning Management Systems Context in Jordan: Applied of an Integration of Technology Acceptance Model and Information Systems Success. *International Journal of Scientific Research and Management*, 8(10), 90-109.
7. Cohen, L., Manion, L., & Morrison, K. (2017). *Research methods in education*. routledge.
8. Morgan, D. L. (1996). Focus groups. *Annual review of sociology*, 22(1), 129-152.
9. Belanche, D., Casaló, L. V., & Flavián, C. (2019). Artificial Intelligence in FinTech: understanding robo-advisors adoption among customers. *Industrial Management & Data Systems*, 119(7), 1411-1430.
10. Mbaidin, H., Sbaee, N., AlMubydeen, I., Chindo, U., & Alomari, K. (2024). The role of AI integration and governance standards: Enhancing financial reporting quality in Islamic banking. *Decision Science Letters*, 13(1), 83-98.
11. Ashta, A., & Herrmann, H. (2021). Artificial intelligence and fintech: An overview of opportunities and risks for banking, investments, and microfinance. *Strategic Change*, 30(3), 211-222.
12. Met, İ., Kabukçu, D., Uzunoğulları, G., Soyalp, Ü., & Dakdevir, T. (2020). Transformation of business model in finance sector with artificial intelligence and robotic process automation. *Digital business strategies in blockchain ecosystems: Transformational design and future of global business*, 3-29.
13. Dantsoho, M. A., Ringim, K. J., Hasnan, N., & Kura, K. M. (2021). Moderating Role of Bank Reputation on the Relationship between Artificial Intelligence (AI) Quality, Satisfaction and Continuous Usage Intention of



- e-Banking Services. *Central Asia and the Caucasus*, 22(5), 311-329.
14. Mhlanga, D. (2020). Industry 4.0 in finance: the impact of artificial intelligence (ai) on digital financial inclusion. *International Journal of Financial Studies*, 8(3), 45.
  15. Parthiban, E. S., & Adil, M. (2023). Examining the Adoption of AI based Banking Chatbots: A Task Technology Fit and Network Externalities Perspective. *Asia Pacific Journal of Information Systems*, 33(3), 652-676.
  16. Law, S. W. (2024). Financial Inclusion and Virtual Bank in the Era of Digitalization: A Regulatory Case Study in Hong Kong. In *Financial Inclusion, Technology and Virtual Banking: A Theoretical Perspective* (pp. 25-39). Singapore: Springer Nature Singapore.
  17. Aldarmi, A. A. (2024). Fintech Service Quality of Saudi Banks: Digital Transformation and Awareness in Satisfaction, Re-Use Intentions, and the Sustainable Performance of Firms. *Sustainability*, 16(6), 2261.
  18. Jameaba, M. S. (2024). Digitalization, emerging technologies, and financial stability: challenges and opportunities for the Indonesian banking sector and beyond. *Emerging Technologies, and Financial Stability: Challenges and Opportunities for the Indonesian Banking Sector and Beyond* (April 26, 2024).
  19. Alhanatleh, H., Khaddam, A., Abudabaseh, F., Alghizzawi, M., & Alzghoul, A. (2024). Enhancing the public value of mobile fintech services through cybersecurity awareness antecedents: A novel framework in Jordan. *Investment Management and Financial Innovations*, 21(1), 417-430.
  20. Kanungo, S. (2024). Consumer Protection in Cross-Border FinTech Transactions. *International Journal of Multidisciplinary Innovation and Research Methodology*, ISSN: 2960-2068, 3(1), 48-51.
  21. Bhat, S. A., Islam, S. B., & Mir, M. F. (2024). Consumers' attitude toward biometric banking services: an empirical evaluation of determinants and outcomes. *Journal of Financial Services Marketing*, 1-17.
  22. Jafri, J. A., Amin, S. I. M., Rahman, A. A., & Nor, S. M. (2024). A systematic literature review of the role of trust and security on Fintech adoption in banking. *Heliyon*.
  23. Aloulou, M., Grati, R., Al-Qudah, A. A., & Al-Okaily, M. (2024). Does FinTech adoption increase the diffusion rate of digital financial inclusion? A study of the banking industry sector. *Journal of Financial Reporting and Accounting*, 22(2), 289-307.
  24. Alt, R., Fridgen, G., & Chang, Y. (2024). The future of fintech—Towards ubiquitous financial services. *Electronic Markets*, 34(1), 3.
  25. Karaki, B. A., & Al-Kasasbeh, O. M. A. R. (2024). Analyzing the Banking Sector-Fintech Companies Nexus in Jordan. *WSEAS Transactions on Business and Economics*, 21, 280-287.
  26. Oladipo, J. O., Okoye, C. C., Elufioye, O. A., Falaiye, T., & Nwankwo, E. E. (2024). Human factors in cybersecurity: Navigating the fintech landscape. *International Journal of Science and Research Archive*, 11(1), 1959-1967.
  27. AL-Dosari, K., Fetais, N., & Kucukvar, M. (2024). Artificial intelligence and cyber defense system for banking industry: A qualitative study of AI applications and challenges. *Cybernetics and systems*, 55(2), 302-330.
  28. Choithani, T., Chowdhury, A., Patel, S., Patel, P., Patel, D., & Shah, M. (2024). A comprehensive study of artificial intelligence and cybersecurity on bitcoin, crypto currency and banking system. *Annals of Data Science*, 11(1), 103-135.
  29. Jawhar, S., Miller, J., & Bitar, Z. (2024, February). AI-Driven Customized Cyber Security Training and Awareness. In *2024 IEEE 3rd International Conference on AI in Cybersecurity (ICAIC)* (pp. 1-5). IEEE.
  30. Nadella, G. S., & Gonaygunta, H. (2024). Enhancing Cybersecurity with Artificial Intelligence: Predictive Techniques and Challenges in the Age of IoT. *International Journal of Science and Engineering Applications*, 13(04), 30-33.
  31. Benjamin, L. B., Amajuoyi, P., & Adeusi, K. B. (2024). Marketing, communication, banking, and Fintech: personalization in Fintech marketing, enhancing customer communication for financial inclusion. *International Journal of Management & Entrepreneurship Research*, 6(5), 1687-1701.
  32. Alhanatleh, H. M. (2021). The effect of electronic banking services usage on clients electronic loyalty. *Int. J. Hum. Capital Urban Manage*, 6(4), 461-476.
  33. Roh, T., Yang, Y. S., Xiao, S., & Park, B. I. (2024). What makes consumers trust and adopt fintech? An empirical investigation in China. *Electronic Commerce Research*, 24(1), 3-35.
  34. Awang, Z. (2014). A handbook on SEM for academicians and practitioners: step by step practical guides for the beginners (Vol. 2 First). *Perpustakaan Negara Malaysia: MPSW Rich Resources*.
  35. Raza, I., & Awang, Z. (2021). Knowledge-sharing practices in higher educational institutes of Islamabad, Pakistan: an empirical study based on theory of planned behavior. *Journal of Applied Research in Higher Education*, 13(2), 466-484.

36. Talwar, S., Dhir, A., Kaur, P., Zafar, N., & Alrasheedy, M. (2019). Why do people share fake news? Associations between the dark side of social media use and fake news sharing behavior. *Journal of retailing and consumer services*, 51, 72-82.
37. Hermida, R. (2015). The problem of allowing correlated errors in structural equation modeling: concerns and considerations. *Computational Methods in Social Sciences*, 3(1), 5-17.
38. Brown, T. A. (2015). *Confirmatory factor analysis for applied research*. Guilford publications.