Original Article
ISSN (Online): 2582-7472

ShodhKosh: Journal of Visual and Performing Arts
June 2024 5(6), 141–152

UNDERSTANDING THE FACTORS INFLUENCING BLOCKCHAIN TECHNOLOGY ADOPTION IN MODERN ENTERPRISES

Pritam Arunrao Shinde [1], Dr. Satish Ubale [2]

[1] Assistant Professor, Pimpri Chinchwad University, Talegoan, Pune and Research Scholar, Matrix School of Management Studies, Pune, India
[2] Director and Research Centre Head, Matrix School of Management Studies, Pune, India

Corresponding Author
Pritam Arunrao Shinde,
281083ab@gmail.com

DOI
10.29121/shodhkosh.v5.i6.2024.1660

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

ABSTRACT

The research paper examines the factors influencing the adoption of blockchain technology in modern enterprises, focusing on both internal and external determinants. Conducted with a sample of 231 respondents from various industries, the study investigates how organizational culture, leadership support, technological infrastructure, training resources, communication, regulatory standards, competitive pressures, market maturity, partnerships, and customer expectations affect blockchain technology adoption. Using a quantitative methodology, data were collected through structured questionnaires, and hypotheses were tested using statistical techniques, including one-sample t-tests. The results reveal that internal factors such as organizational culture and leadership support significantly impact blockchain adoption. Concurrently, external factors like regulatory standards, competitive pressures, and customer demands also play a crucial role. The study highlights that organizations with supportive internal environments and those adept at navigating external pressures are more likely to successfully adopt blockchain technology. The findings suggest that a comprehensive approach, addressing both internal and external factors, is essential for effective blockchain integration. Implications for practice include the need for organizations to foster a supportive internal culture, ensure strong leadership, and stay responsive to external regulatory and market dynamics. Future research directions include exploring the long-term impact of blockchain adoption on organizational performance and investigating the integration of blockchain with other emerging technologies.

Keywords: Blockchain Technology, Adoption Factors, Internal Influences, External Influences, Organizational Culture, Leadership Support, Regulatory Standards, Competitive Pressures, Market Maturity, Customer Expectations

1. INTRODUCTION

Blockchain technology is a new digital breakthrough that is shaking up the corporate world. It has the ability to change the way many different businesses operate. Blockchain technology has a wide range of potential uses, signalling a new age of openness, efficiency, and safety in industries as diverse as healthcare, banking, and supply chain management. The implementation of blockchain technology within organisations is still a complicated and multi-faceted task, despite its promising potential and rising interest among stakeholders. To better comprehend the complex relationship between technology, organisation, and environment as it pertains to blockchain adoption in contemporary businesses, this

article aims to break down the elements impacting this process. In comparison to more conventional, centralised systems, blockchain technology—basically a distributed ledger that allows the recording of transactions across several nodes without the requirement for a single authority—offers several benefits. Everyone knows that technology has the ability to make data more accessible, secure, and reliable. But there is a maze of cultural, strategic, and technological obstacles to overcome on the way from legacy systems to blockchain-enabled frameworks. With an emphasis on how these businesses understand and go above these obstacles, this research intends to fill gaps in current frameworks and investigate the dynamics of blockchain adoption in organisational contexts. The fast development of digital technologies and their significant influence on company operations highlight the study's importance. Modern businesses are incorporating blockchain technology into their digital transformation plans because of its decentralisation promise and its capacity to produce transparent and irreversible records. However, there is a marked disparity in the adoption rates between industries and geographical areas. This dispersion suggests that there are fundamental variables that impact the choices made in relation to the implementation of the technology. Research on blockchain adoption has been fragmented, with most studies concentrating on specific issues like technological hurdles or organisational preparedness. To have a better grasp of the adoption phenomena, however, a complete model is required that incorporates several aspects, such as technical, organisational, and environmental elements. By looking at how perceived dangers and the changing nature of technology adoption play a part, the study also fills a significant need in the current literature. This study explores the effects of blockchain technology after acceptance and its integration into business systems over the long term, in contrast to most prior research that has concentrated on the early stages of adoption. This is all in an effort to give a more nuanced view of blockchain adoption by showing how first impressions and choices change as businesses learn more about the technology. In order to collect a wide range of opinions from specialists in the field, IT workers, and company executives, this study used a mixed-methods approach, combining quantitative surveys with qualitative interviews. Using this method, we can examine all the factors that affect blockchain adoption and come up with a better model that can be used for both theoretical and practical purposes in the corporate world. To sum up, this research adds to our theoretical knowledge of technology adoption and provides useful recommendations for businesses thinking about using blockchain technology. More informed strategic decision-making that matches with technical improvements and competitive needs of the current corporate environment may be achieved by identifying and analysing the essential elements impacting blockchain adoption.

2. REVIEW OF LITERATURE

Beyond the prevailing technical emphasis, Janssen et al. (2020) investigate the complex nature of blockchain technology adoption, highlighting the necessity to examine institutional, commercial, and technical aspects. Their suggested paradigm, which is based on a thorough literature analysis, recognises the interconnectedness of these aspects and emphasises that technology adoption is a process. Businesses thinking about using blockchain technology and academics wanting to learn more about the complex processes of blockchain adoption will find this framework to be an invaluable resource.

Utilising survey data from 449 different sectors, Alazab et al. (2021) offer practical insights on the implementation of blockchain technology for supply chain

management. In order to assess the impact of trust-based innovation adoption strategies on blockchain acceptance, they combine well-established theoretical models (UTAUT, TTF, and ISS) with these methods. Their research shows that different models have different effects on adoption intentions, and that trust dynamics are more important than social influence within the UTAUT model when it comes to blockchain adoption.

Dehghani et al. (2022) employ a mixed-method approach, combining a quantitative survey with qualitative interviews and a thorough literature analysis, to study the variables impacting organisational intentions to embrace blockchain technology. While perceived technical instability and regulatory uncertainty have negative effects on adoption intentions, their analysis reveals important technological aspects like data quality and perceived interoperability that have favourable effects. The wider organisational environment impacting blockchain adoption may be better understood with this all-encompassing approach.

The reluctance to use blockchain technology in supply networks is the subject of Choi et al. (2020). Critical technical, organisational, and environmental obstacles that impede blockchain integration are identified by their research. Their use of structural equation modelling and confirmatory factor analysis sheds light on system-related governmental constraints and technological hurdles, giving a more nuanced picture of the opposition that businesses encounter when trying to implement blockchain technology into their supply chains in order to make them more sustainable.

In their study, Ghode et al. (2020) use grey relational analysis to rank the variables impacting blockchain technology adoption in supply chains according to expert opinions and literature studies. In order to help practitioners strategically use blockchain technology to improve the efficiency and trustworthiness of supply chain transactions, their study identifies important obstacles like interoperability, data transparency, and trust between organisations. The prioritisation process assists stakeholders in developing more efficient plans for implementing blockchain technology by highlighting the social, technical, and operational aspects of adoption obstacles.

By expanding the classic Technology-Organization-Environment (TOE) model to incorporate both new and old components, Malik et al. (2021) investigate the elements impacting the organisational adoption of blockchain technology in Australia. Their study takes into account a wide range of contextual elements, including technological ones like perceived advantages and compatibility, organisational ones like innovativeness and learning aptitude, and governmental ones like backing from the government and confusion about standards. They found that these correlations are moderated by perceived risks, which shows that blockchain adoption is complex in Australian organisational settings. This study adds to the TOE framework by including previously unconsidered factors, such as information transparency and disintermediation, providing a more holistic view of the dynamics of blockchain adoption.

Regarding non-technical elements in particular, Post et al. (2018) fill a gap in the literature by discussing the spread of blockchain technology. They find thirteen elements impacting the proliferation of blockchain technology using a grounded theory method and semi-structured expert interviews. Further study is necessary to confirm and build upon these characteristics, however these findings do provide the groundwork for future studies and applications. The findings of this study are crucial in illuminating the far-reaching effects of blockchain technology in many different sectors.

Using an expanded version of the Technology Acceptance Model (TAM), Sciarelli et al. (2022) look at what factors influence the adoption of blockchain technology by small and medium-sized enterprises. Their research highlights the importance of external characteristics like lower cost and better efficiency and security in influencing organisations' decisions to use blockchain. In order to offer a more complex picture of technology adoption in creative company settings, the study's results show that perceived utility is a strong predictor of blockchain use intentions.

Within the framework of blockchain's influence on the Fourth Industrial Revolution, Kim andGim (2017) examine the elements influencing the desire to embrace the technology. Their empirical study among Korean IT professionals reveals the crucial roles of performance expectation and effort expectancy, which are impacted by features like security and economic efficiency. They utilised the Unified Theory of Acceptance and Use of Technology (UTAUT) for their study. The research highlights the need of organisations considering various technological aspects when planning the integration of blockchain technology, offering practical insights into its acceptance.

Blockchain technology adoption behaviours among SMEs in the tourist and hospitality sector are examined by Nuryyev et al. (2020), with an emphasis on cryptocurrency payments. Their study reveals important internal and external elements impacting adoption intentions using the Technology Acceptance Model (TAM). These aspects include social influence, management qualities, and strategic orientation. Their research gives important information for tourism stakeholders to help small and medium-sized enterprises (SMEs) stay competitive when they embrace new technology by highlighting the role of perceived utility and simplicity of use in moderating these impacts. This research shows that the hotel and tourist sectors have their own set of problems and possibilities when it comes to using blockchain technology.

Highlighting the intricate interaction of technical, organisational, and environmental aspects, the literature analysis has shed light on a broad spectrum of variables impacting the adoption of blockchain technology across different sectors and geographical situations. Researchers have greatly expanded existing models like TOE and TAM to include blockchain-specific criteria including interoperability, data quality, and perceived hazards (Malik et al., 2021; Dehghani et al., 2022). Despite these developments, there is still a lack of research on how these aspects interact with one another at various points in the history of blockchain technology's development in organisations. Without thoroughly analysing post-adoption dynamics and long-term integration issues, most research have either concentrated on initial adoption or theoretical model construction.

2.1. OBJECTIVES OF THE STUDY

1) To understand the impact of internal factors on Blockchain Technology Adoption in Modern Enterprises.
2) To understand the impact of external factors on Blockchain Technology Adoption in Modern Enterprises.

Hypotheses

H1: Internal factors have a profound impact on Blockchain Technology Adoption in Modern Enterprises.

H2: External factors have a significant impact on Blockchain Technology Adoption in Modern Enterprises.

3. RESEARCH METHODOLOGY

In this study, a quantitative research methodology was employed to investigate the impact of internal and external factors on blockchain technology adoption in modern enterprises. The research design included a structured survey that was distributed to 231 IT professionals and decision-makers across various industries known for their engagement with or interest in blockchain technology. The survey comprised both Likert-scale questions and multiple-choice items designed to quantitatively assess the perceptions and impacts of identified internal and external factors on the adoption process. Data from completed surveys were analyzed using statistical techniques, to test the hypotheses. Hypothesis 1 posited that internal factors—such as organizational culture, management support, and technological readiness—have a profound impact on blockchain adoption. Hypothesis 2 explored the influence of external factors, including regulatory environments, market pressure, and competitive dynamics. This methodological approach facilitated a nuanced understanding of how different dimensions influence the decision to adopt blockchain technology in organizational settings.

Data Analysis

Table 1

Table 1 Internal Factors

	Firmly Disagree		Disagree		Neutral		Agree		Firmly Agree	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Our organization's culture actively supports the adoption of innovative technologies like blockchain.	19	8.2%	20	8.7%	13	5.6%	60	26.0%	119	51.5%
There is strong leadership and management support for integrating blockchain technology within our business processes.	30	13.%	32	13.9%	3	1.30%	59	25.5%	107	46.3%
The technological infrastructure of our organization is well-suited to adopt blockchain technology.	26	11.3%	22	9.5%	11	4.8%	51	22.1%	121	52.4%
Our organization provides sufficient training and resources to facilitate the adoption of blockchain technology.	24	10.4%	16	6.9%	14	6.1%	61	26.4%	116	50.2%
The communication within our organization effectively promotes understanding and support for blockchain technology adoption.	21	9.1%	18	7.8%	17	7.4%	43	18.6%	132	57.1%

The survey data reveals a significant positive inclination towards the adoption of innovative technologies like blockchain within the organizational culture. A majority of the respondents, representing 77.5% (179 out of 231), agree or firmly agree that their organization's culture actively supports such initiatives. This high level of agreement underscores the progressive nature of the organizational culture towards embracing new technologies, which could be a crucial factor in the successful implementation of blockchain. In terms of leadership and management support for integrating blockchain technology, the data indicates a strong backing, with 71.8% (166 out of 231) of the participants agreeing or firmly agreeing. This substantial support from leadership is critical as it often translates into allocation of resources and strategic direction necessary for the technology's adoption. However, a notable 26.9% (62 out of 231) expressed disagreement, highlighting some level of reservation or perceived lack of commitment at the managerial level which could represent potential internal resistance or a gap in conveying the strategic importance of blockchain technology to all levels of management. Regarding the suitability of the technological infrastructure for blockchain adoption, over three-quarters of the respondents, or 74.5% (172 out of 231), feel that their infrastructure is well-prepared to handle such advanced technology. This suggests that the organizations surveyed have potentially invested in updating their IT systems or already possess a robust technological base, which is a fundamental prerequisite for blockchain integration. The provision of training and resources necessary for blockchain technology adoption also seems to be adequate according to the survey responses, with 76.6% (177 out of 231) agreeing or strongly agreeing that their organization facilitates this adoption through sufficient training and resources. This indicates a proactive approach in equipping employees with the necessary skills and knowledge, which can significantly smooth the transition process and ensure effective utilization of blockchain technologies. Finally, the effectiveness of communication within organizations concerning the support for blockchain technology adoption appears to be strong, as evidenced by 75.7% (175 out of 231) of participants agreeing or strongly agreeing. Effective communication is crucial for fostering an understanding of the benefits and operational changes associated with blockchain technology, and this high level of agreement suggests that organizations are successfully informing and engaging their employees in the blockchain adoption process.

Table 2

Table 2 External Factors

	Firmly Disagree		Disagree		Neutral		Agree		Firmly Agree	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Regulatory standards and legal frameworks in our industry influence our organization's decision to adopt blockchain technology.	31	13.4%	18	7.8%	20	8.7%	75	32.5%	87	37.7%
Competitive pressure from within the industry motivates our organization to adopt blockchain technology.	31	13.4%	20	8.%	8	3.5%	52	22.%	120	51.9%
The maturity of blockchain technology markets significantly	14	6.1%	41	17.7%	23	10.0%	65	28.1%	88	38.1%

impacts our organization's adoption decisions.										
Partnerships and collaborations with external entities drive our organization towards adopting blockchain technology.	22	9.5%	19	8.%	16	6.9%	71	30.7%	103	44.6%
Customer demand and expectations play a crucial role in our organization's decision to integrate blockchain technology.	20	8.7%	23	10.0%	17	7.4%	32	13.9%	139	60.2%

The survey responses indicate that regulatory standards and legal frameworks play a notable role in shaping the organization's decision to adopt blockchain technology. Approximately 70.2% (162 out of 231) of participants either agree or firmly agree that these external factors significantly influence their organization's blockchain adoption decisions. This finding underscores the importance of compliance with industry regulations and legal considerations in the adoption process, suggesting that organizations may weigh regulatory risks and benefits heavily when considering new technologies. Competitive pressure within the industry is another significant external factor motivating blockchain adoption. Over 74.4% (172 out of 231) of respondents agree or firmly agree that such competitive dynamics drive their organization's decision to integrate blockchain technology. This high level of agreement reflects the notion that staying ahead of competitors and leveraging new technologies to gain a competitive edge are key motivators for organizations. The maturity of blockchain technology markets also impacts adoption decisions, as reflected in the responses of 66.2% (153 out of 231) of participants who agree or firmly agree with this statement. This indicates that the development stage and overall acceptance of blockchain technology in the market are critical factors influencing organizations. Companies are likely to adopt blockchain technologies when they perceive these technologies as being more established and reliable, thus reducing perceived risks associated with early adoption. Partnerships and collaborations with external entities also play a significant role in driving blockchain technology adoption, as supported by 75.3% (174 out of 231) of the respondents who agree or firmly agree. This suggests that forming strategic alliances and engaging with external partners can facilitate blockchain adoption by providing additional resources, expertise, or market validation, thereby easing the integration process. Lastly, customer demand and expectations are crucial factors in the decision to adopt blockchain technology, with a substantial 74.1% (171 out of 231) of participants agreeing or firmly agreeing. This high percentage underscores the importance of aligning technological adoption with customer needs and preferences, highlighting that meeting or exceeding customer expectations can be a strong driver for integrating blockchain technology.

H1: Internal factors have a profound impact on Blockchain Technology Adoption in Modern Enterprises.

Table 3

Table 3 One-Sample Test						
	TV=3					
	t	df	Sig	Diff	95% CI	
					L	U
Our organization's culture actively supports the adoption of innovative technologies like blockchain.	12.242	230	.000	1.03896	0.8717	1.2062
There is strong leadership and management support for integrating blockchain technology within our business processes.	8.1	230	.000	0.78355	0.5929	0.9742
The technological infrastructure of our organization is well-suited to adopt blockchain technology.	10.263	230	.000	0.94805	0.766	1.1301
Our organization provides sufficient training and resources to facilitate the adoption of blockchain technology.	11.285	230	.000	0.99134	0.8183	1.1644
The communication within our organization effectively promotes understanding and support for blockchain technology adoption.	12.189	230	.000	1.06926	0.8964	1.2421

The one-sample t-test results provide significant insights into the impact of internal factors on blockchain technology adoption, supporting the hypothesis that internal factors profoundly influence this process. Firstly, the statement "Our organization's culture actively supports the adoption of innovative technologies like blockchain" yielded a t-value of 12.242 with a p-value of 0.000. The mean difference was 1.03896, with a 95% confidence interval ranging from 0.8717 to 1.2062. This result indicates a strong agreement among respondents that their organization's culture is highly supportive of adopting new technologies, including blockchain. The substantial t-value and low p-value signify that this perception is significantly higher than the neutral value of 3, confirming that organizational culture plays a crucial role in facilitating blockchain adoption. Secondly, the statement "There is strong leadership and management support for integrating blockchain technology within our business processes" produced a t-value of 8.100 and a p-value of 0.000. The mean difference of 0.78355, with a 95% confidence interval of 0.5929 to 0.9742, shows that respondents strongly agree that leadership and management are supportive of blockchain integration. This result highlights the importance of leadership in driving blockchain adoption, underscoring its critical role in the successful implementation of such technologies. The statement "The technological infrastructure of our organization is well-suited to adopt blockchain technology" had a t-value of 10.263 with a p-value of 0.000. The mean difference of 0.94805, and the 95% confidence interval ranging from 0.7660 to 1.1301, suggest that respondents believe their organization's technological infrastructure is adequately prepared for blockchain adoption. This significant finding supports the hypothesis that internal technological readiness is a key factor in the adoption of blockchain technology. For the statement "Our organization provides sufficient training and resources to facilitate the adoption of blockchain technology," the t-value was 11.285 with a p-value of 0.000. The mean difference of 0.99134, with a confidence interval from 0.8183 to 1.1644, indicates that respondents agree that their organization offers adequate training and resources for blockchain adoption. This result underscores the importance of organizational support in terms of training and resources, reinforcing the internal factors' impact on the successful adoption of

blockchain technology. Lastly, the statement "The communication within our organization effectively promotes understanding and support for blockchain technology adoption" showed a t-value of 12.189 and a p-value of 0.000. The mean difference of 1.06926, with a confidence interval from 0.8964 to 1.2421, suggests strong agreement that internal communication is effective in supporting blockchain technology adoption. This finding highlights the critical role of effective communication in fostering an environment conducive to adopting new technologies. Overall, these results strongly support the hypothesis that internal factors have a profound impact on blockchain technology adoption in modern enterprises. The significant t-values and p-values across all statements confirm that organizational culture, leadership support, technological infrastructure, training and resources, and communication are crucial internal factors influencing the adoption of blockchain technology.

H2: External factors have a significant impact on Blockchain Technology Adoption in Modern Enterprises.

Table 4

Table 4 One-Sample Test

	TV=3					
	t	df	Sig.	Diff	95% CU	
					L	U
Regulatory standards and legal frameworks in our industry influence our organization's decision to adopt blockchain technology.	8.027	230	.000	0.7316	0.552	0.9112
Competitive pressure from within the industry motivates our organization to adopt blockchain technology.	9.514	230	.000	0.90909	0.7208	1.0974
The maturity of blockchain technology markets significantly impacts our organization’s adoption decisions.	8.736	230	.000	0.74459	0.5767	0.9125
Partnerships and collaborations with external entities drive our organization towards adopting blockchain technology.	10.789	230	.000	0.92641	0.7572	1.0956
Customer demand and expectations play a crucial role in our organization's decision to integrate blockchain technology.	11.929	230	.000	1.06926	0.8926	1.2459

The one-sample t-test results shed light on the influence of external factors on blockchain technology adoption, affirming the hypothesis that these factors significantly impact adoption decisions in modern enterprises. The statement "Regulatory standards and legal frameworks in our industry influence our organization's decision to adopt blockchain technology" demonstrated a t-value of 8.027 with a p-value of 0.000. The mean difference was 0.73160, with a 95% confidence interval ranging from 0.5520 to 0.9112. This result indicates a strong agreement among respondents that regulatory standards and legal frameworks play a critical role in their organization's decision to adopt blockchain technology. The significant t-value and low p-value underscore the importance of compliance and regulatory considerations in the adoption process. For the statement "Competitive pressure from within the industry motivates our organization to adopt blockchain technology," the t-value was 9.514 with a p-value of 0.000. The mean difference of 0.90909, with a confidence interval from 0.7208 to 1.0974, shows that respondents perceive competitive pressure as a significant motivator for blockchain

adoption. This finding highlights the role of industry competition in driving organizations to integrate new technologies, reinforcing the impact of external market pressures. The statement "The maturity of blockchain technology markets significantly impacts our organization's adoption decisions" produced a t-value of 8.736 and a p-value of 0.000. The mean difference was 0.74459, with a 95% confidence interval from 0.5767 to 0.9125, indicating that the maturity of blockchain technology markets is a crucial factor in adoption decisions. This result suggests that the development and stability of blockchain markets influence organizations' willingness to adopt the technology. For the statement "Partnerships and collaborations with external entities drive our organization towards adopting blockchain technology," the t-value was 10.789 with a p-value of 0.000. The mean difference of 0.92641, with a confidence interval ranging from 0.7572 to 1.0956, signifies that external partnerships and collaborations are significant drivers of blockchain adoption. This finding emphasizes the role of external relationships in facilitating the integration of blockchain technology. Finally, the statement "Customer demand and expectations play a crucial role in our organization's decision to integrate blockchain technology" yielded a t-value of 11.929 with a p-value of 0.000. The mean difference was 1.06926, with a confidence interval from 0.8926 to 1.2459, demonstrating that customer expectations are a key factor influencing adoption decisions. This result underscores the importance of aligning technology adoption with customer demands to meet market expectations. Overall, these results strongly support the hypothesis that external factors significantly impact blockchain technology adoption in modern enterprises. The significant t-values and low p-values across all statements confirm that regulatory standards, competitive pressure, market maturity, external partnerships, and customer demands are pivotal external influences on the adoption of blockchain technology.

4. FINDINGS

The findings reveal a robust influence of external factors on blockchain technology adoption within modern enterprises. The analysis underscores that regulatory standards and legal frameworks are pivotal in shaping organizations' decisions to adopt blockchain technology. With a t-value of 8.027 and a significant p-value, it is evident that compliance with regulations and adherence to legal requirements are central to the adoption process. Additionally, competitive pressure from within the industry emerged as a significant motivator, as indicated by a high t-value of 9.514. This suggests that the drive to stay competitive and keep pace with industry developments strongly influences organizations to integrate blockchain technology. The maturity of blockchain technology markets also plays a crucial role, with a t-value of 8.736 reflecting that the development stage and stability of the technology market significantly affect adoption decisions. The findings thus highlight the importance of both regulatory and market conditions in influencing the decision-making process regarding blockchain adoption.

Furthermore, the study shows that partnerships and collaborations with external entities are crucial drivers of blockchain technology adoption, as evidenced by a t-value of 10.789. This finding emphasizes the role of strategic alliances and external collaborations in facilitating the integration of blockchain technology. Customer demand and expectations also emerged as a critical factor, with a t-value of 11.929 indicating that aligning technology adoption with customer needs is essential for organizations. The significant p-values across all statements reinforce the hypothesis that external factors—regulatory standards, competitive pressures, market maturity, external partnerships, and customer demands—have a profound

and substantial impact on blockchain technology adoption. These findings suggest that enterprises must navigate a complex landscape of external influences to successfully adopt and implement blockchain technology.

5. CONCLUSIONS

The study provides significant insights into the factors influencing blockchain technology adoption in modern enterprises, distinguishing between internal and external influences. The findings affirm that internal factors such as organizational culture, leadership support, technological infrastructure, training resources, and communication significantly impact the adoption of blockchain technology. Organizations with a supportive culture, strong leadership, and adequate technological and training resources are more likely to embrace blockchain innovations. On the other hand, external factors—regulatory standards, competitive pressures, market maturity, partnerships, and customer demands—also play a crucial role. The study underscores that compliance with regulations, staying competitive, collaborating with external entities, and addressing customer expectations are key drivers behind blockchain adoption. These results substantiate the hypothesis that both internal and external factors profoundly impact the decision-making process regarding blockchain technology.

The findings have several practical implications for enterprises considering blockchain technology adoption. Organizations should focus on creating a conducive internal environment by fostering a supportive culture, ensuring strong leadership, enhancing technological infrastructure, and providing comprehensive training resources. Effective communication strategies should also be implemented to promote understanding and support for blockchain initiatives. Externally, companies must navigate regulatory landscapes, stay abreast of industry developments to remain competitive, and seek strategic partnerships that can facilitate blockchain adoption. Addressing customer demands and expectations is also crucial, as aligning technology with customer needs can drive successful implementation. These implications suggest that a balanced approach, addressing both internal and external factors, is essential for successful blockchain adoption.

Future research could explore the longitudinal effects of blockchain technology adoption on organizational performance and competitive advantage. Investigating how internal and external factors evolve over time and their impact on the sustainability of blockchain initiatives would provide valuable insights. Additionally, examining the role of emerging trends and technologies in the blockchain ecosystem could offer a more comprehensive understanding of its adoption dynamics. Comparative studies across different industries or regions could highlight unique challenges and opportunities related to blockchain technology. Finally, further research could focus on the integration of blockchain technology with other digital innovations, such as artificial intelligence and the Internet of Things, to understand how these technologies can collectively influence organizational strategies and operations.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

None.

REFERENCES

Alazab, M., Alhyari, S., Awajan, A., & Abdallah, A. B. (2021). Blockchain technology in supply chain management: an empirical study of the factors affecting user adoption/acceptance. Cluster Computing, 24(1), 83-101.

Choi, D., Chung, C. Y., Seyha, T., & Young, J. (2020). Factors affecting organizations' resistance to the adoption of blockchain technology in supply networks. Sustainability, 12(21), 8882.

Dehghani, M., Kennedy, R. W., Mashatan, A., Rese, A., & Karavidas, D. (2022). High interest, low adoption. A mixed-method investigation into the factors influencing organisational adoption of blockchain technology. Journal of Business Research, 149, 393-411.

Ghode, D., Yadav, V., Jain, R., & Soni, G. (2020). Adoption of blockchain in supply chain: an analysis of influencing factors. Journal of Enterprise Information Management, 33(3), 437-456.

Janssen, M., Weerakkody, V., Ismagilova, E., Sivarajah, U., & Irani, Z. (2020). A framework for analysing blockchain technology adoption: Integrating institutional, market and technical factors. International Journal of Information Management, 50, 302-309.

Kim, J., & Gim, G. (2017). A study on factors affecting the intention to accept blockchain technology. Journal of Information Technology Services, 16(2), 1-20.

Malik, S., Chadhar, M., Vatanasakdakul, S., & Chetty, M. (2021). Factors affecting the organizational adoption of blockchain technology: Extending the technology–organization–environment (TOE) framework in the Australian context. Sustainability, 13(16), 9404.

Nuryyev, G., Wang, Y. P., Achyldurdyyeva, J., Jaw, B. S., Yeh, Y. S., Lin, H. T., & Wu, L. F. (2020). Blockchain technology adoption behavior and sustainability of the business in tourism and hospitality SMEs: An empirical study. Sustainability, 12(3), 1256.

Post, R., Smit, K., & Zoet, M. (2018). Identifying factors affecting blockchain technology diffusion.

Sciarelli, M., Prisco, A., Gheith, M. H., & Muto, V. (2022). Factors affecting the adoption of blockchain technology in innovative Italian companies: an extended TAM approach. Journal of Strategy and Management, 15(3), 495-507.