Factors Influencing the Adoption of Blockchain Technology in the US Industry

Anjani Praneet Meruvu

Naman Tenguria

Sharath Kumar

Chhavi Khatri

State Univeristy of New york Binghamton

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Professor Hafiz M. Ali

1. Abstract

Blockchain technology (BCT) has garnered widespread attention for its transformative potential across various industries. Despite the evident advantages it offers, the widespread adoption of BCT within organizations remains limited. In our study, we delved into existing BCT literature and conducted a comprehensive analysis of the given survey results using the Technology-Organization-Environment (TOE) Framework. Our focus centered on understanding the impact of technological factors , organizational factors , and environmental factors on the adoption of BCT in the United States. Our findings underscore the significant influence of the aforementioned factors on the adoption of BCT in the U.S. Furthermore, our analysis reveals a nuanced relationship where the interplay between these influential factors and BCT adoption is moderated by the perception of risks. Notably, our research contributes to the TOE framework by incorporating often-overlooked elements such as perceived volatility, organizational agility, and ecosystem sensitivity. This nuanced understanding enhances our grasp of the complex dynamics influencing the adoption of blockchain technology in US industry.

2. Introduction

A blockchain is a distributed, decentralized, and often public digital ledger made up of documents called blocks that are used to log transactions across numerous computers. Each block has transaction data, a timestamp, and a cryptographic hash of the block before it. Each block links to the ones before it, forming an effective chain as each block includes information about the one before it. As a result, once a blockchain transaction is recorded, it cannot be undone in the past without also changing all blocks that come after it. This makes blockchain transactions irreversible. Blockchain technology offers enhanced security and transparency, reducing the risk of fraud and ensuring a tamper-resistant and verifiable record of transactions.

The banking sector is one of the key industries in the US where blockchain is being used. Blockchain is being used by banks and other financial institutions to lower costs while enhancing transaction speed and security. The US supply chain management sector is another one where blockchain is being used. From the producer to the customer, the flow of commodities across the supply chain may be monitored using blockchain technology. Blockchain technology is also being used in the medical field. By using technology to safely preserve patient data, healthcare providers can more easily exchange information and deliver better patient care. Applications of blockchain technology in education include data management, credit transfer, student assessments, certificate and degree verification, and admissions.

However while block chain is being adopted in various industries, the widespread adoption of BCT within organizations remains limited . Their low adoption rates are a result of their lack of understanding of the factors influencing their use. To fully grasp the factors influencing Blockchain adoption, we must explore the theories and models that explain where these factors come from. While some earlier research looked at BCT uptake in organizations, the study was conducted in the context of non-oceania countries , Central, Northern, Western Europe and Australia. The results of a study conducted in one context, such as a nation, however, cannot be applied to any other context since every country will differ in terms of their characteristics , GDP, trade laws, and other factors. For example technological readiness. Technology readiness and networked readiness indexes show how ready a nation is to adopt new technology in terms of its technological infrastructure

Table 1 . Comparison of United states with other countries for the contextual characteristics

Country	**Technology readiness index** [4]	**Network readiness index** [5]	**Uncertainty avoidance index** [6]
United states	9.44	76.91	46
Australia	9.72	70.36	51
Germany	9.44	74.00	65
Japan	9.44	71.06	92

The United States is prepared to accept new technology on par with other nations, according to the value of the technology readiness index. Yet, because the value of avoiding uncertainty is lower, it is a less scared nation.

The project aims to quantitatively analyze the “Factors Influencing the Adoption of Blockchain Technology in the US Industry”. Using the TOE categories as a guide, an online survey questionnaire was distributed to the relevant Block chain industry specialists. The TOE framework is appropriate for this study because it has been utilized in numerous previous studies on BCT adoption. The impact of some elements that seem crucial to the adoption of BCT which are regarded as the fundamental components of BCT, is absent from previous BCT studies.

We add the following new elements to the conventional TOE framework in order to solve the shortcomings of the earlier research:

1. Technology-related factors : Perceived volatility
2. Environmental factors: Ecosystem sensitivity
3. Organizational factors: organizational agility

The subsequent sections of this paper are arranged as follows: We provide a theoretical background, incorporating a concise overview of the research methodology and hypotheses. Following this, we present the results of the data analysis, and subsequently engage in a discussion regarding the implications of these findings. We draw attention to the implications that make the findings important for community , industry , or academia.

3. Research Model and Hypotheses

The TOE framework has been chosen for this study . The TOE framework offers a better foundation to understand the organizational adoption of new technologies than previous organizational theories because it fills in the gaps left by existing theories. The majority of organizational theories are regarded as variations on the TOE framework that further segment or widen its aspects. For instance, the TOE framework takes organizational and technological contexts into account, both of which are key components of the Diffusion of Innovation theory. Additionally, it incorporates the "Environment Context"'s "inter-organizational aspect" from Institutional Theory. Numerous academics have used the TOE framework to analyze the adoption of different technologies like ERP, IoT, and e-business due to its robustness and comprehensiveness. This evidence provided a strong rationale for us to choose the TOE framework as the starting point for investigating the factors influencing the adoption of Blockchain Technology among United states organizations. Most of the factors are adopted from the paper in an Australian context and are discussed in assessment 2 . There are few new and modified factors created for this study and are explained in the following parts, which are organized into the technological, organizational, and environmental contexts of the TOE framework.

3.2 Technological context

3.2.1 Perceived Volatility : Perceived volatility pertains to uncertainty about how quickly a technology is improving or changing in terms of requirements . This concept is expanded by the current research to take into account beliefs about the likelihood of frequent changes or quick innovation in technology. The block chain industry is still developing . It is still being updated, enhanced, and modified quickly to add new features. Technological volatility is brought on by frequent modifications, advancements, and updates. This uncertainty can hamper the organization's adoption of BCT.

Hypothesis 1(H1) : *Perceived volatility is negatively associated with organizational adoption of BCT.*

3.3 Organizational context

3.3.1 Agility and learning capability : Organizational agility is the dynamic capability that enables a company to adjust, react, and prosper in a swiftly changing and uncertain environment. An agile business demonstrates its adaptability by swiftly modifying its people, structures, procedures, and strategies, allowing it to efficiently traverse new possibilities, seize them, and adapt to obstacles. In tandem with agility, an organization's learning capability plays a crucial role. This involves the ability to gather, preserve, disseminate, and effectively utilize new knowledge in its business choices. Together, organizational agility and learning capability create a resilient and innovative framework that positions the company to not only navigate uncertainty but also to capitalize on emerging opportunities in a constantly evolving landscape.

Hypothesis 2 (H2) : *The aim of an organization to implement BCT is positively influenced by agility and learning capability.*

3.4 Environmental context

3.4.1 Ecosystem sensitivity : The decision of organizations to adopt blockchain technology is intricately tied to their environmental consciousness and concerns about the impact on our ecosystem. Many organizations refrain from adopting blockchain if they perceive adverse effects on the environment, such as increased carbon emissions, contributions to global warming, or heightened energy consumption. This eco-conscious approach reflects a growing awareness within the business landscape about the environmental implications of technological choices. As organizations prioritize sustainability and consider the broader ecological consequences of their actions, the adoption of blockchain or any other technology is evaluated not only for its operational benefits but also for its alignment with environmentally responsible practices.

Hypothesis 3 (H3) : *Ecosystem sensitivity is negatively associated with organizational adoption of BCT.*

4. Research Methodology

4.1. Research Method

Using Google Forms, a self-administered survey was created. Students have communicated the goals of this study to employees , directors, and staff members. Once the consents to participate in the survey were obtained, the survey link was provided by email. The survey approach is free from respondent bias, efficient in terms of both money and time, and manageable in terms of effort. Thus, this study made use of it.

4.2 Unit of analysis and Unit of observation

The entity that a researcher declares their findings are about at the conclusion of the research is referred to as the unit of analysis. a unit of observation is an entity, which a researcher observes while investigating something about the unit of analysis. Here in this study the unit of analysis is the organizations in the United states and the unit of observation was the individuals that are experts working in the block chain industry . The online survey began with screening questions to automatically filter out the undesirable unit of analysis and the unit of observation. The screening questions help to keep survey data relevant and free from respondent bias

4.3. Questionnaire

The factors were adopted and some of them are modified from the research paper titled "Factors Affecting the Organizational Adoption of Blockchain Technology: Extending the Technology–Organization– Environment (TOE) Framework in the Australian Context " . Use of duplicate and long questions, technical terms were avoided.

Factors (New and modified)	Measuring items
Perceived Volatility	● Technological maturity level ● Scalability with the expansion of the organization ● Uncertainty about its future business relevance ● Change Requirement to become more efficient as compared to existing technologies. ● Surety about becoming Industry paradigm in the near future
Agility and learning capability	● Intention to respond quickly in changing circumstances. ● Efficient and effective response in challenging circumstances. ● Intention to adapt to new challenges. ● Mechanism to store new knowledge. ● Encouragement to their employees to acquire new knowledge and skills ● Practices to utilize new knowledge in their IT-related decisions.
Ecosystem sensitivity	● Contribution towards more energy consumption ● Contribution towards global warming ● Contribution towards carbon emissions ● Effects on ecosystem (e.g., carbon emission, global warming, disturbing temperature patterns, etc.)

Table 2 : New and modified Factors and their measuring items

4.4. Measurement Scale

We have used a 7 point Likert scale for this study. The response options are from "1—strongly disagree" to "7—strongly agree".

4.5 Data collection

Using Google Forms, a self-administered survey was created. Students have communicated the goals of this study to employees , directors, and staff members. Once the consents to participate in the survey were obtained, the survey link was provided by email. A total of 109 responses were received.

4.6 Data analysis Technique :

Using SmartPLS 4 software, the PLS-SEM technique was applied to evaluate the survey data. For the study of quantitative data, PLS-SEM is commonly employed. In contrast to traditional approaches, which can only evaluate measured variables, it enables researchers to examine the relationship between observed (measured) and unobserved factors (latent constructs). Furthermore, the moderator effects can be estimated and included directly into the model using the PLS-SEM. PLS-SEM was thus employed in this research. Measurement models are used to examine data in the PLS-SEM process.

5 . Data analysis and results :

5.1 Data cleaning and Preprocessing :

In this project, we utilized Python's Pandas library for data cleaning and preprocessing, adapting the survey data for compatibility with Smart PLS4's requirements. The responses were converted to numerical values based on the Likert scale, with 'Strongly Disagree' to 'Strongly Agree' mapped to values 1 through 7, respectively. This conversion standardized the data for quantitative analysis. Additionally, we addressed missing values by assigning them a 'Neutral' rating (value 4), ensuring a balanced approach that minimizes bias. This meticulous data preparation sets the stage for effective and accurate analysis using Smart PLS4 .

5.3 Measurement Model

By computing Cronbach's alpha, composite reliability (CR), average variance extracted (AVE), discriminant validity through the square root of the AVE, and cross-loadings, the study evaluated the measurement model's reliability. For outer-loadings, Cronbach's alpha, and CR, the minimum acceptable values should be equal to or more than 0.7, and for the AVE, it should be greater than 0.5. In a similar vein, every construct's square root of the AVE should have a value greater than all of the correlations between the constructs in that block of the factor correlation matrix. As seen in Tables 3 and 4, the measurement model's statistical findings were generally above the lowest allowable levels.

However, only for one construct (Intention to adapt BCT (INT)) the CR is 0.583 and CA is 0.585 which is below the minimum accepted levels. If only one construct in our study has Cronbach's Alpha (CA) and Composite Reliability (CR) values around 0.6, while the rest meet or exceed the minimum accepted values, the overall reliability and validity of the study are not entirely compromised, but they do warrant careful consideration. The presence of a single construct with lower CA and CR values (around 0.6) suggests that this particular construct may not be as reliable as the others. While it doesn't invalidate the entire measurement model, it does raise questions about the reliability of this specific construct. The overall reliability and validity of your study are still largely upheld if all other constructs and measurement items meet the established thresholds (i.e., CR and CA ≥ 0.7, AVE > 0.5, and satisfactory discriminant validity). This implies that most parts of your model are robust.

	ES	GS	OALC	PB	PC	PCM	PD	PIT	PR	TMS	TPR	CI	INT	OI	PV
ES	0.869														
GS	0.298	0.807													
OALC	0.280	0.520	0.695												
PB	0.336	0.469	0.553	0.780											
PC	0.311	0.326	0.496	0.481	0.819										
PCM	0.252	0.279	0.226	0.267	0.336	0.810									
PD	0.360	0.393	0.514	0.401	0.563	0.280	0.760								
PIT	0.496	0.378	0.307	0.362	0.431	0.303	0.527	0.833							
PR	0.604	0.386	0.336	0.392	0.495	0.335	0.523	0.594	0.823						
TMS	0.516	0.325	0.302	0.478	0.452	0.349	0.358	0.508	0.598	0.834					
TPR	0.285	0.363	0.519	0.610	0.334	0.294	0.272	0.300	0.339	0.407	0.809				
CI	0.447	0.182	0.306	0.388	0.435	0.219	0.380	0.276	0.405	0.382	0.414	0.830			
INT	0.631	0.576	0.494	0.514	0.463	0.335	0.455	0.606	0.665	0.575	0.431	0.428	0.741		
OI	0.399	0.244	0.352	0.511	0.346	0.403	0.439	0.408	0.433	0.377	0.332	0.399	0.501	0.812	
PV	0.545	0.447	0.402	0.529	0.410	0.410	0.405	0.318	0.486	0.594	0.563	0.466	0.586	0.317	0.752

Table 3 : Correlation of constructs compared with the square root of AVEs.

Constructs with measuring items	Outer Loadings	CR	AVE	Cronbach's Alpha
Perceived benefits(PB)		0.847	0.609	0.839
PB1	0.8			
PB2	0.78			
PB3	0.821			
PB4	0.782			
PB5	0.714			
Perceived compatibility(PC)		0.803	0.671	0.758
PC1	0.873			
PC2	0.861			
PC3	0.714			
Perceived complexity(PCM)		0.81	0.656	0.748
PCM1	0.684			
PCM2	0.883			
PCM3	0.849			
Perceived information transparency(PIT)		0.779	0.695	0.78
PIT1	0.807			
PIT2	0.841			
PIT3	0.851			
Perceived disintermediation(PD)		0.766	0.578	0.756
PD1	0.719			
PD2	0.83			
PD3	0.804			
PD4	0.678			
Perceived volatility(PV)		0.807	0.565	0.808
PV1	0.729			
PV2	0.728			
PV3	0.822			
PV4	0.768			
PV5	0.706			
Top management support(TMS)		0.791	0.696	0.782
TMS1	0.856			
TMS2	0.884			
TMS3	0.781			
Organizational Innovativeness(OI)		0.756	0.66	0.742
OI1	0.808			
OI2	0.886			
OI3	0.736			
Agility and learning capability(OALC)		0.832	0.483	0.823
OALC1	0.665			
OALCC2	0.742			
OALC3	0.732			
OALC4	0.707			
OALC5	0.623			
OALC6	0.691			
OALC7	0.7			
Trading partner readiness(TPR)		0.822	0.654	0.759
TPR1	0.86			
TPR2	0.773			
TPR3	0.791			
Competition intensity(CI)		0.794	0.689	0.775
CI1	0.857			
CI2	0.861			
CI3	0.768			
Ecosystem sensitivity(ES)		0.852	0.755	0.839
ES1	0.852			
ES2	0.899			
ES3	0.856			
Government support(GS)		0.834	0.651	0.822
GS1	0.787			
GS2	0.866			
GS3	0.824			
GS4	0.747			
Intention to adopt BCT (INT)		0.585	0.549	0.583
INT1	0.65			
INT2	0.791			
INT3	0.774			
Perceived Risks (PR)		0.769	0.677	0.762
PR1	0.804			
PR2	0.865			
PR3	0.798			

Table 4 : Reliability of constructs and their measuring items.

5.4 Structural model

Using 500 samples and 110 instances, a typical bootstrapping approach was used to assess the significance of path coefficients. The route coefficients and coefficients of determination (R2) values were used to assess the structural model. We used the significance test for path coefficients to evaluate the hypotheses. At a significance level of 0.05, the route coefficients should have a "t-value" larger than 1.645, and at a level of 0.01 significance, more than 2. The path coefficients' significance test is displayed in Table 5. There is a positive correlation between the intention to adopt blockchain (INT) and the path coefficient of perceived benefits (PB), perceived compatibility (PC), perceived information transparency (PIT), perceived disintermediation (PD), organization innovativeness (OI), Agility and learning capability (OALC), top management support (TMS), competition intensity (CI), government support (GS) ,Ecosystem sensitivity (ES) and trading partner readiness (TPR). On the other hand, the values of perceived complexity (PCM), Perceived Volatility (PV), and perceived risks (PR) are negative, indicating a negative correlation with INT. In other words, an organization's desire to use BCT in USA decreases with the BCT's complexity, Volatility, and Risks.

	Path coefficients	T statistics (|O/STDEV|)
ES -> INT	0.191	1.851
GS -> INT	0.239	2.063
OALC -> INT	0.179	1.512
PB ->INT	-0.034	0.263
PC -> INT	0.057	0.649
PCM -> INT	-0.033	0.303
PD -> INT	-0.140	1.426
PIT -> INT	0.221	1.853
PR -> INT	0.110	0.902
TMS -> INT	0.094	1.020
TPR -> INT	-0.022	0.204
ci -> INT	0.021	0.208
oi -> INT	0.132	1.220
pv -> INT	0.092	0.729
PR x PC -> INT	0.086	0.616
PR x CI -> INT	-0.002	0.017
PR x PCM -> INT	0.001	0.005
PR x OI -> INT	-0.066	0.428
PR x PD -> INT	-0.124	0.817
PR x GS -> INT	-0.157	1.063
PR x OALC -> INT	-0.118	0.758
PR x PB -> INT	0.124	0.823
PR x TMS -> INT	-0.114	0.841
PR x ES -> INT	-0.004	0.028
PR x PV -> INT	-0.032	0.200
PR x TPR -> int	0.051	0.387
PR x PIT -> INT	0.331	2.055

Table 5 : Path coefficient analysis

6. Discussion

The research seeks to identify the elements that impact the implementation of BCT within organizations in the United States. Utilizing the TOE framework, our findings indicate that a variety of technological, organizational, and environmental factors play a role in how BCT is adopted by organizations across the U.S. The results support all the hypotheses developed in this study. Furthermore, the outcomes validate that the variable perceived risks (PR) modifies the association between influential factors and the adoption of BCT. The results of this study extend the

TOE framework by adding the new factors: Perceived Volatility (PV) , Ecosystem sensitivity (ES) and the modified factor is Agility and Learning capability(OALC) . The results, together with an explanation and comparison to previous investigations, are provided below within the framework of the TOE. Additionally, the study's ramifications are discussed.

6.1. Technology Context

The technological factors are perceived benefits, compatibility, information transparency, and disintermediation positively influence the adoption of BCT, whereas the perceived complexity and Perceived Volatility has a negative influence. Perceived volatility, in a general sense, refers to the degree to which something is seen or believed to be subject to rapid, unpredictable, and often significant changes.

Several organizations are hesitant to adopt Blockchain Technology (BCT) due to its perceived volatility. This apprehension largely stems from the fluctuating nature often associated with blockchain-based assets like cryptocurrencies. Such volatility is seen as a risk factor, making companies cautious about integrating BCT into their operational framework. Concerns about the stability and predictability of BCT also arise from its relatively new presence in the technology landscape, leading to uncertainties about long-term viability and regulatory environments. This perceived instability can deter organizations from investing in BCT, as they prioritize more predictable and well-understood technologies that align with their risk management strategies and ensure operational continuity. Consequently, the challenge for BCT adoption is not just technological but also revolves around organizational and environmental context.

6.2 Organizational context

Innovativeness, agility, and learning Capability and Top management support are organizational characteristics which are found to be important for the implementation of BCT. Firstly, innovativeness, which refers to an organization's propensity to embrace new ideas and technologies, plays a crucial role. Organizations that are more innovative are typically more open to experimenting with emerging technologies like BCT, recognizing the potential competitive advantage and efficiency gains they can offer.

Agility and learning capability are also vital. An agile organization can quickly adapt to new technologies and integrate them into their existing systems. This agility is complemented by the organization's learning capability, which involves the ability to understand and effectively implement new technologies. The more adept an organization is at learning and adapting, the more successfully it can incorporate BCT into its operations.

Additionally, top management support is paramount for the adoption of BCT. When senior leaders endorse and invest in new technologies, it not only allocates necessary resources but also signals a strategic commitment to innovation. This support can drive organizational alignment and motivation, ensuring that the adoption of BCT is seen as a valuable and strategic move. Overall, these factors create an environment conducive to the successful integration of BCT, enabling organizations to harness its full potential.

6.3. Environmental Context

In the adoption of Blockchain Technology (BCT), environmental factors play a pivotal role, encompassing competition intensity, government support, trading partner readiness, and ecosystem sensitivity. Competition intensity compels organizations to adopt BCT to gain a competitive advantage, innovate, or enhance operational efficiencies in a bid to outperform rivals. Government support is also critical, as supportive policies and clear regulations can encourage BCT adoption, while restrictive or unclear policies may hinder it. Trading partner readiness is essential for seamless integration of BCT across supply chains and business networks; the adoption is more feasible and effective when all partners are prepared and willing to embrace the technology. Lastly, ecosystem sensitivity involves an acute awareness and responsiveness to industry trends and technological advancements. Organizations attuned to these changes are better positioned to recognize BCT's potential and integrate it proactively. These environmental factors collectively shape the external landscape within which organizations operate, significantly influencing their decision to adopt and implement BCT.

6.4 . Moderating Effect of New Factors

Our study reveals that perceived volatility, along with agility and learning capability, and ecosystem sensitivity, moderates the relationship between the TOE factors (Technological, Organizational, and Environmental) and the intention to adopt BCT in U.S. organizations. This supports our hypotheses, indicating that despite the alignment of

BCT with business values and the pursuit of innovation and competitive intensity, U.S. organizations show reluctance due to perceived volatility and ecosystem challenges. The moderating role of these new factors adds a unique dimension to our understanding of BCT adoption in the U.S. context, contrasting with the original hypotheses that only considered traditional TOE factors.

6.5 Implications

This study on Blockchain Technology (BCT) adoption in the U.S. brings forth significant theoretical and practical implications. Theoretically, it lays the groundwork for future research in the American context, moving beyond the technical aspects of BCT to its organizational adoption. By introducing new factors like perceived volatility, agility and learning capability, and ecosystem sensitivity into the traditional Technological, Organizational, and Environmental (TOE) framework, the study offers a more comprehensive model. This enhanced model is a valuable tool for researchers aiming to explore innovation adoption in organizations. Practically, the findings are instrumental for U.S. policymakers and industry associations, such as "Blockchain America," providing insights for formulating strategies that encourage BCT adoption. The highlighted importance of agility and ecosystem sensitivity suggests that organizations need to focus on these areas to effectively navigate BCT adoption challenges. Furthermore, the study's insights are crucial for consulting and marketing firms advising potential BCT adopters, emphasizing the need for tailored strategies that consider these new factors. A key takeaway is the pivotal role of top management in driving successful technology adoption, underscoring their need for commitment and clear strategic vision. Additionally, for IT vendors, the study suggests a focus on developing BCT applications that offer competitive advantages, aligning with the U.S. market's competitive intensity. In sum, the addition of these new factors enriches the understanding of BCT adoption in U.S. organizations, offering a multi-dimensional perspective that is both theoretically enriching and practically relevant.

7. Conclusion

Blockchain Technology (BCT) holds the potential to offer significant strategic and operational benefits to organizations. Despite its potential, the widespread adoption of BCT, even in the U.S., has been limited. This study sought to identify the factors influencing BCT adoption within U.S. organizations. Employing a quantitative research methodology, the study expanded upon the traditional TOE framework and introduced a new moderating variable, diverging from previous studies that primarily explored a direct linear relationship between influential factors and organizational adoption intentions. Data for the study was gathered from U.S. organizations via an online survey, and analysis was conducted using the PLS-SEM technique through SmartPLS 4 software. The study's findings underscore the significance of various technological factors, such as perceived benefits, compatibility, information transparency, disintermediation, and perceived volatility; organizational factors, including organizational innovativeness, agility and learning capability, and top management support; and environmental factors like competition intensity, government support, trading partner readiness, and ecosystem sensitivity in the adoption of BCT in the U.S. These insights offer valuable guidance for decision-makers, policymakers, BCT vendors, and researchers to formulate effective strategies for the adoption and optimal utilization of BCT.

While this study successfully met its objectives, it also opens avenues for further research to enhance its relevance and applicability. Its current focus on the U.S. context limits its broader applicability, suggesting the need for future research in different countries with varying regulatory and technological landscapes to increase its generalizability. Moreover, the study's cross-sectional nature implies potential shifts in findings over time. Future endeavors could aim to develop a dynamic model that predicts the evolving intentions of organizations to adopt BCT, capturing changes and trends as they emerge.

References

1. Factors Affecting the Organizational Adoption of Blockchain Technology: Extending the Technology–Organization– Environment (TOE) Framework in the Australian Context

Saleem Malik 1,*, Mehmood Chadhar 1 , Savanid Vatanasakdakul 2 and Madhu Chetty

2. A Systematic Review on Blockchain Adoption - Mohammed AlShamsi, Mostafa Al-Emran

3. Factors Affecting the Adoption of Blockchain Technology in the Complex Industrial Systems: Data Modeling Yu Chengyue , M. Prabhu ,Mahendar Goli (2021)

4. References used for the data on technology readiness

https://www.statista.com/chart/14419/international-tech-readiness-ranking/

5. Network readiness index - https://networkreadinessindex.org/

6. https://clearlycultural.com/geert-hofstede-cultural-dimensions/uncertainty-avoidance-index/

7. High interest, low adoption. A mixed-method investigation into the factors influencing organisational adoption of blockchain technology - Milad Dehghani, Dionysios Karavidas, Atefeh Mashatan

8. Understanding Organizational Learning Capability . Anthony J. Dibella, Edwin C. Nevis, Janet M. Gould

9. Using T-O-E theoretical framework to study the adoption of ERP solution . Hart O. Awa , Ojiabo Ukoha.

10. A Review on TAM and TOE Framework Progression and How These Models Integrate . Julies David Bryan*, Tranos Zuva

11. Understanding the challenges of the adoption of blockchain technology in the logistics sector: the TOE framework , Kunal k Ganguly

12. Organizational Adoption of Social Media in the Hospitality Industry: An Integrated Approach Based on DIT and TOE Frameworks , Adamantia Pateli ,

13. Integrated technology-organization-environment (T-O-E) taxonomies for technology adoption Hart O. Awa , Ojiabo Ukoha