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Adoption of Blockchain Technology in International Entrepreneurship: Strategic Framework for Managing Roadblocks

ABSTRACT

Blockchain technology (BCT) is emerging as a disruptive innovation in the increasingly globalised business ventures. It is believed to offer important benefits to international entrepreneurs, such as reducing transaction cost and risk of fraud, creating better transactional trust, and avoiding exploitation by business partners. However, BCT can bring changes to the business world only if it gets adopted by industries across all spectrums. International entrepreneurs are amongst the critical groups of adopters of BCT. Based on multiple theoretical perspectives, this paper identifies and categorizes key barriers to adopting BCT by international entrepreneurs. A survey of BCT field experts was conducted to validate 15 key barriers to BCT adoption. Furthermore, based on pairwise comparison data collection with three groups of international entrepreneurs from India and UK, a decision-making methodology was adopted to identify the relative importance and the causal relationships among the key barriers. This study develops a framework of strategic solutions to address barriers of BCT adoption by international entrepreneurs. This study offers stakeholders of BCT to better understand the patterns of BCT adoption by international entrepreneurs and will support the development of more targeted and multi-faceted BCT adoption strategies.

KEYWORDS: international entrepreneurship; blockchain technology; innovation adoption; barriers to adoption; decision-making methodology

MANAGERIAL RELEVANCE STATEMENT: This paper, focusing on the adoption of blockchain technology (BCT) in international entrepreneurship, offers practical insights for managers by providing them with knowledge about how to overcome critical barriers in

integrating the BCT into business practice. This research highlights the potential of BCT to transform business models, enabling businesses to achieve greater transparency, lower transaction costs and increased operational efficiencies. Managers and policy makers can leverage the strategic framework to systematically identify the root causes of barriers to BCT adoption and implement targeted strategies to mitigate their impact. Entrepreneurs and managers can use the strategic framework, and the understanding gained, to develop innovative business models that capitalize on emerging BCT opportunities, safeguarding against disruption and ensuring competitiveness. By offering a structured approach, this framework enables decision-makers to navigate the complexities of BCT adoption and ensure a smoother integration process.

I. INTRODUCTION

With the rise of digital connectivity and the spread of fund transferring across international boundaries, international investors are seeking the best business opportunities [1]. This fast-changing nature of international business in the constantly varying environment, primarily in the digital domain, has drawn significant research interest [2]. In recent years, blockchain technology (BCT) has emerged as an important disruptive innovation that has the potential to change ways of conducting international business [3]. Well-known BCTs that have created a buzz in the market are crypto currencies (Cryptos) [4], decentralized financial assets (DeFi), Non-Fungible Tokens (NFTs), as well as smart contracts. They are adopted by new entrepreneurial ventures of varying sizes ranging from proprietorship to umbrella organizations. It is reported that more than 30 million smart contracts have been deployed worldwide, spread across industries such as banking and financial services, energy, and real estate [5]. BCT is an online distributed ledger system-based technology that eliminates transaction intermediaries, provides virtual ledger systems and enables low cost and seamless transactions [6]. It is

regarded as an important future application due to its fundamental characteristics: decentralization, peer-to-peer transmission, anonymous transparency, record irreversibility, and transactional logic [7]. It is believed to offer important benefits such as reducing transaction cost, reducing risk of fraud and exploitation, and enhancing transactional trust.

However, BCT can bring change to the business world only if it gets adopted by industries across all spectrums and not limit itself to a particular stratum of application. Implementers need to widely assimilate and appreciate its benefits and shortcomings [8]. There is the need for a comprehensive analysis of BCT adoption while addressing multiple challenges, such as market influence of firms, traditional business models, and value generation [9].

However, the extant literature is mostly technical and does not discuss much about the adoption of BTC by international entrepreneurship. Few studies have examined the adoption of BCT but in different contexts, such as healthcare [10], operations management [11], and supply chain resilience [12]. None have covered international entrepreneurship. This is strange because BCT is mostly borderless, while more and more cases show how it is changing different activities of international firms [13]. Hence, proper understanding about BCT adoption in international entrepreneurship become urgent [14]. Given that the technical field related to BCT is yet to mature, better understanding of various barriers of adoption international entrepreneurs encounter will facilitate more effective development of BCT in the future. Hence, this study attempts to examine the barriers to adopting BCT by international entrepreneurs and to answer the following research questions:

RQ1. What are the potential barriers in adoption of BCT in international entrepreneurship?

RQ2. How can these barriers be categorised to enable effective resolutions?

This study follows the Technology Acceptance Model and adopts the "decision-making trial and evaluation laboratory" (DEMATEL) approach to find the cause-and-effect inter-relationship among barriers to BCT adoption in international entrepreneurship. This study aims

to identify and analyse barriers obstructing BCT's adoption through systematic identification, categorization, and prioritization.

Major contributions of this study are threefold. First, this study identifies key barriers to adopting BCT in the context of international entrepreneurship and hence pave the way to understand the patterns of wider adoption by international entrepreneurs. Second, this study discusses the causal relationships among key barriers and clarifies the relative importance of those barriers, a gap in the current literature [11], [12]. This allows the development of more targeted and multi-faceted BCT adoption strategies by entrepreneurs. Third, this study provides a strategic framework to address key barriers of BCT adoption in international entrepreneurship to facilitate better decision making in relation to more effective pathways for BCT development.

By spotlighting how international entrepreneurs evaluate, prioritise and ultimately overcome blockchain adoption barriers, this study enriches the international entrepreneurship discourse. It demonstrates that entrepreneurs' liability of smallness amplifies energy-cost and legal-infrastructure concerns, whereas their liability of newness enables faster cultural change once collaboration networks are in place. This duality explains why blockchain diffusion patterns in entrepreneurial ventures diverge from those observed in established firms and, therefore, why bespoke policy support is essential for international entrepreneurs.

The remaining part of the paper is structured as follows: Section 2 presents the literature review of theoretical underpinning and a discussion of barriers to BCT adoption identified from literature. Section 3 discusses the research methodology. Results of the study are presented in Section 4, which is followed by the Discussion of results in Section 5. Section 6 presents the conclusions and implications of the study.

II. LITERATURE REVIEW

Blockchain in International Entrepreneurship

International entrepreneurship is "the discovery, enactment, evaluation and exploitation of opportunities across national borders to create future goods and services" [15]. During the initial phases of BCT development, blockchain tokens were deemed as a way of raising funds through issuance of tokens that would replicate growth of the entrepreneurial venture and act like an ecosystem [16]. Raising funding for international entrepreneurial ventures through issuance of tokens utilizing BCT was an easy way of promising global crowdfunding projects under easier terms [17]. This development paved the way for early stage blockchain adopters, to raise funds from the market in an easier way.

However, BCT could have farfetched potential for international entrepreneurship beyond fund raising. There have been many observations on its suitability in other areas of application. For example, BCT have the potential to replace top-down control through consensus, open source, collective decision-making, and transparency [18]. Therefore, BCT can reshape the landscape of entrepreneurship and can become the bedrock for open innovation projects for value creation that can support innovators, entrepreneurs, and other potential stakeholders through seamless transactions and smart contracts [19]. Furthermore, BCT has the potential to bring significant impact on international entrepreneurship ecosystem. It offers standardized and secured cross-border transactions with enhanced security and increased operational efficiencies [20] through BCT's important role in supply chain management, research collaborations, and other important areas of international business [21].

However, BCT has its own challenges that particularly affect entrepreneurial firms that aim to leverage BCT's advantages in international business [22]. The possibility of adopting BCT is based on trust and robustness of the technology [23], which bring in the entrepreneurs' faith to employ BCT as the technical stratum of their venture. In order to promote the trust of the entrepreneurs on the implementation of BCT in their ventures, a better understanding of

potential adoption barriers within the current working culture of entrepreneurs will allow more effective design of business models and policies, and better promotion of BCT.

This paper scrutinizes how such barriers pose a significant challenge in adopting BCT. By analysing barriers within the context of international entrepreneurship, we aim to dissect multiple organisational issues, which are unique to the international entrepreneurial landscape. The present study will explore the knowledge within international entrepreneurship and the factors that inhibit the adoption of BCT in their operations.

Theoretical Underpinning

Past researchers have extensively explored diverse factors that affect users' acceptance and adoption of new technologies through various theoretical frameworks, including the Technology-Organization-Environment (TOE) framework [24], the Diffusion of Innovation (DOI) theory [25], and the Institutional Theory [26]. TOE postulates that technology adoption is influenced by three main factors: technological, organizational, and environmental [24]. Technological factors include BCT's relative advantage, complexity, and compatibility with existing systems. Organizational factors, such as firm size, technological infrastructure, and top management support, determine whether a business adopts BCT [27]. Environmental factors, including competitive pressure, regulatory frameworks, and global industry trends, can influence BCT adoption decisions [28].

DOI explains technology adoption by emphasizing five key attributes: relative advantage, compatibility, complexity, trialability, and observability [29]. For instance, BCT has relative advantage in enhancing transparency, reducing fraud, and increasing efficiency in global transactions encourages adoption [30]. However, BCT's complexity and perceived incompatibility with traditional financial systems can act as barriers to adoption [31]. BCT can have limited trialability, due to high investment in ICT infrastructure and when complex pilot

tests are needed by businesses. Observability of BCT can stem from success stories from industry leaders, further shape international entrepreneurs' adoption decisions [32].

Institutional Theory can be used to integrate regulatory, normative, and mimetic pressures as key factors influencing BCT adoption [33]. Regulatory pressures, including compliance with cross-border trade policies, anti-money laundering laws, and cryptocurrency regulations, affect entrepreneurs' decisions [34]. Normative influences, such as industry associations, professional standards and stakeholder expectations, can provide guidance to BCT adoption. Additionally, mimetic behaviour, where firms imitate successful BCT adopters in the international market, can accelerate BCT diffusion [35].

Given the complexity and the emerging nature of BCT, we adopt all three theoretical underpinnings to offer a more comprehensive perspective to inform the identification and the analysis of different barriers to BCT adoption. This multidimensional approach enables a comprehensive understanding of effective integrate BCT into entrepreneurial business models.

Systematic Literature Review and Barriers to Adopting BCT in International Entrepreneurship

Based on the TOE framework, the DOI theory, and the Institutional Theory, we attempt to understand the barriers to adoption of BCT by international entrepreneurs. We conducted a systematic literature review to identify the barriers to BCT adoption through extensive literature search, summarization, and consolidation. We conducted a literature search in the Scopus database, focusing on peer-reviewed journal articles in English published between 2014 and 2025. We used search keywords, "blockchain", "technology adoption", "innovation adoption", "barriers", and "entrepreneurship". After careful screening, 30 relevant articles were selected. The barriers to adoption were identified based on their frequency of mention and relevance to international entrepreneurship with the assistance of NVivo software. Eventually, we have identified 16 key barriers that influence the adoption process, which span across various

technological, organizational, and environmental dimensions, shaping how businesses perceive and integrate BCT into their operations (see Table I).

Despite the numerous benefits of applying blockchains in various aspects of business, the BCT per se suffers certain types of lacunae. For instance, BCT is still too immature and unstable owing to various versions of blockchains in the market [36]. There could be issues of scalability, security and interoperability [37]. Although these issues are inherent to any emerging ICT technologies, issues to do with energy costs, investment escalation owing to installation costs, business goals and organizational policies could determine an entrepreneur's adoption of BCT [38]. There could also be barriers owing to lack of emulative business models due to the absence of collaboration and coordination [39]. The 16 commonly referred barriers to adoption of BCT in international entrepreneurship are discussed as follows.

<<Insert Table I. Here>>

In-stability of blockchain technology

BCT is commonly perceived as a mischievous, subversive, mysterious, and evasive commercial and financial instrument [40]. For example, there is huge variation in the market price of encrypt tokens. This creates a chicken and egg scenario, which conveyed the idea that a more significant number of participants would make the system stable since a more extensive user base would be less volatile owing to activity of one [40]. However, this created a pertinent adverse scenario of its early-stage adoption due to its volatility [41]. Another issue was the number of security breaches over blockchain networks. While BCT offers robust security against external threats, it still faces challenges from insider attacks involve manipulating the system by compromising nodes within the network. Hence, technological maturity of the underlying blockchain principles is yet to be attained [42].

Concerns on scalability in entrepreneurial ventures

The metrics on scalability have been defined under *"maximum throughput, latency, bootstrap time, and cost per confirmed transaction*" [43]. For blockchain-based transactions such as bitcoins, the maximum throughput has been observed to be seven transactions per second (TPS), while Visa has 4,000 TPS. This restricts growth prospects of scalability of blockchain operations [44]. Another issue is with respect to latency (defined as the time taken for a transaction to be confirmed). High volume of transactions and limited size of predefined blocks of the application of the blockchain lead to higher transaction latency [45]. The issue of scalability is one of the stumbling roadblocks to BCT application.

Concerns on security

BCT is a computer algorithm providing distributed communication in a peer-to-peer subscribers' network, providing transparent transaction among the parties [46]. Security of the blockchain algorithm depends on the strength and robustness of the cryptography used therein and is vulnerable to structural weakness and exploitation [47]. Therefore, data reliability is the main concern relating to integrating blockchains into entrepreneurial businesses.

Concerns on interoperability

Interoperability is an important basis of adoption of BCT in entrepreneurial ventures [48]. For instance, a smart contract based on a particular BCT should be cognizable while reading in other base technologies. This could be made available by forming common standards, which could render interoperability of blockchains possible on an industrial scale [49]. Adoption of common standards while framing smart contracts on an entrepreneurial frontier could have long-term positive consequences for the entire blockchain-entrepreneurial ecosystem.

High cost of electricity and infrastructure

A common point of contention about BCT would be the impact of energy prices on goods and services [38]. Backend support of specialized hardware and linked software are essential for implementing any BCT. However, the higher the processors' computing power, the higher the

cost of energy associated with the processing device [50]. In the long run, energy costs will outweigh hardware costs. Hence, availability of cheaper electricity and high cost of electricity will be a barrier for sustainable adoption of BCT across entrepreneurial ventures [51][52].

Resistance of conversion to a new system

Walsh et al. [53] proposed three attributes across various entrepreneurial ventures which will result in resistance to new BCT systems. First, the pace of technological development has surpassed consumer's demand, resulting in more advanced products that users might not require at present. Second, though technically advanced, BCT has inferior product qualities compared to other incumbents. Third, existing business models constrain the migration of an established process towards newer technologies [54].

Lack of awareness of the latest technologies

Although there has been considerable development in new technical skills among entrepreneurs, there is a significant gap between needs and skill availability in the market [55], especially for disruptive innovations like BCT. For any such disruptive innovation, the maximum benefit of its social implications can only be realized when the technology has adequate awareness amongst potential users [56].

High investment in installation of BCT

Investment in hardware and the related software is a major concern for entrepreneurs who are yet to develop full trust in BCT. For entrepreneurs, what matters is efficiency improving and cost reduction [57]. While there could be substantial cost reduction by removing different kinds of intermediaries owing to traditional mode of transactions, when compared to the utilization of BCT, the initial investment in installation is still significant. In Deloitte's 2018 Global Blockchain Survey, 37% of worldwide respondents indicated that implementation of BCT by either replacing or adapting to legacy systems was a major organizational barrier to greater investment in BCT [58].

Stringent policies of the entrepreneurial organization

For some established entrepreneurial ventures, stringent organizational policies can restrict the adoption of BCT due to stickiness of existing policy and strategies. For example, micromanagement and excessive control over decision-making can impede employees' ability to learn and grow through independent problem-solving and initiative-taking [59]. However, for newer entrepreneurial ventures, since organizational policies are more likely to be at a germination stage, they can be more agile to adopt BCT [60].

Ineffective organizational culture

Organisational culture is shaped by management commitment, policies and their implementation in the organization, as well as other factors, such as information sharing, encouragement of collaboration and awareness campaigns [61]. An effective organizational culture enhances trust which forms the bedrock for any kind of cultural establishment in the organization [62]. Conversely, a culture marked by hierarchy, bureaucracy and risk aversion, will restrict trust and hinder agile adoption and leads to suboptimal outcomes.

Lack of collaboration, coordination and cooperation

Cooperation plays an important role in establishing and making a symbiotic decision on adoption of newer technologies such as BCT [63]. Trust between the entrepreneur and other stakeholders is important in shaping the technology [64]. Collaboration, coordination, and cooperation should be based on the trust between the entrepreneur and other stakeholders. Lack of trust, and resulted lack of collaboration and coordination can hinder the adoption of BCT.

Lack of cultural compatibility between stakeholders

Limited compatible culture between stakeholders may hinder the adoption of BCT. Cultural differences can influence stakeholders' perceptions, leading to scepticism or a lack of trust in BCT [65]. In compatible culture with focus on trust and collaboration, stakeholders' attitudes

towards risk-taking can be facilitated [66]. However, some cultures may be inherently more risk-averse, preferring established systems over disruptive technologies like BCT.

Lack of legal infrastructure and regulatory support

Regulatory support for emerging entrepreneurial ventures helps to create better environment of BCT business functionality [67]. However, comprehensive regulatory support and legal infrastructure has yet to be realized concerning adoption by public institutions on a wider scale. It is observed that the absence of clear legal frameworks and regulations regarding BCT-based finance instruments created significant uncertainty for startups [68], which caused hesitation among investors and potential business partners, ultimately hindering wide adoption of BCT.

Lack of availability of successful business models

Successful business models involving applications of BCT in the non-IT and non-financial sectors are still rare today. Any successful business models would hasten the implementation of BCT across major sectors of the economy [69]. Successful business models could have ramifications in applications across various facets of entrepreneurial ventures.

Lack of economic incentive on implementation of BCT

Economic incentives, such as financial gain or prevention of financial losses, can be the major driving force for an entrepreneur to adopt new technologies [70]. Successful implementation of BCT potentially reduces future implementation costs, infrastructure costs and transaction costs [71]. However, due to the emerging nature of BCT, such economic incentives may not be obvious as yet, which can restrict the adoption of BCT by entrepreneurs.

High risk of business continuity in entrepreneurial ventures

Nowadays, international entrepreneurs are living in an increasingly volatile world where competition is becoming fierce. With increasingly globalized business activities, the focus of business continuity has shifted from individual firms to global supply chains [72]. Many entrepreneurs tend to be susceptible to disruptive innovations due to concerns about disruptions

to business continuity [73]. In this sense, the high risks of business continuity involved in the adoption BCT could hinder the adoption by entrepreneurs.

Mapping Barriers to Theoretical Constructs

The sixteen validated barriers can be conceptually mapped across the theoretical frameworks underpinning this study, namely, the TOE framework, DOI theory, and Institutional Theory. Within the TOE framework, barriers such as instability of BCT, concerns on scalability in entrepreneurial ventures, concerns on security, and concerns on interoperability fall under the technological context, as they directly relate to the operational and technical capabilities of the blockchain infrastructure. Organisational level barriers include resistance of conversion to a new system, lack of awareness of the latest technologies, ineffective organizational culture, high investment on installation of BCT, and lack of collaboration, coordination, and cooperation, each of which concerns internal decision-making, capabilities, and behavioural readiness. Environmental barriers encompass high cost of electricity and infrastructure, lack of legal infrastructure and regulatory support, and low economic incentive on implementation of BCT, all of which originate outside the firm and reflect environmental constraints.

From the DOI perspective, several barriers, such as instability of BCT, concerns on security, and low economic incentive on implementation of BCT reduce the perceived relative advantage of blockchain. Barriers like lack of awareness of the latest technologies, resistance of conversion to a new system, and high cost of electricity and infrastructure add to perceived complexity. Concerns on interoperability, and lack of availability of successful business models affect compatibility. Trialability and observability are undermined by concerns on scalability in entrepreneurial ventures and lack of availability of successful business models, while social system dynamics are disrupted by stringent policies of the entrepreneurial organization, ineffective organizational culture, lack of collaboration, coordination, and cooperation, and high risk of business continuity in entrepreneurial ventures.

From Institutional Theory perspective, the absence of legal infrastructure and regulatory support reflects regulative context imposed by policy gaps and inconsistent enforcement. Resistance of conversion to a new system, lack of awareness of the latest technologies, ineffective organization culture, and weak collaboration are related to expectations within professional networks and will shape the normative context. Whilst the absence of successful business models will shape the mimetic pressures or context for BCT adoption. This mapping highlights the necessity of an integrated theoretical model, as each perspective alone would be insufficient to explain the multifaceted and interrelated nature of BCT adoption barriers.

III. RESEARCH METHODOLOGY

The research process followed by the present study is shown in Figure 1. Possible barriers related to the adoption of BCT in international entrepreneurship are first identified through systematic literature review (see Table I). This study then uses a two-phase approach to validate relevant barriers to BCT adoption and identify the causal relationships among these barriers.

<<Insert Figure 1. Here>>

In the first phase, identified barriers were validated through a survey with BCT experts. To validate these barriers, a questionnaire survey was conducted for a period of two months. Due to the emerging nature of BCT, adoption of BCT is not wide enough to allow random sampling of entrepreneurs, thus a purposeful sample was used to collect a list of 140 field experts from India, including entrepreneurs with international collaborators or clients, industry professionals, heads of entrepreneurship departments from different universities, and research scholars who are believed to have knowledge about BCT.

A questionnaire was sent to the sample respondents in June 2022 through a Google form link. Respondents were asked to provide relevance rating of barriers to BCT adoption (identified at the literature review stage) using a Likert-type scale (ranging from 1 to 5, where 1 means not important and 5 means very important). A reminder email was sent to non-

responding participants in July 2022. By August 2022, a total of 110 completed responses were received, with a response rate of 78.57% (see Table II for the respondent profile). The sample size of 110 is considered high enough to validate barriers to BCT adoption [74]. The mean and standard deviation corresponding to each barrier of BCT is shown in Table III. Out of the 16 barriers, 15 barriers have mean scores equal to and higher than 3, which were retained for further analysis. One barrier (cultural compatibility between stakeholders), with a mean score of lower than 3, was removed, indicating it was not perceived as a significant barrier by respondents.

<<Insert Table II and Table III Here>>

In the second phase, the validated barriers were analysed to categorize into cause and effect by collecting pairwise comparison data from three groups of experts containing 10 international entrepreneurs from India and UK (see backgrounds of these entrepreneurs in Table IV) in the form of linguistic terms as mentioned in Table V. India, a fast-growing economy, is keen on blockchain adoption in its IT, finance, and supply chains sectors, while the UK is one of the leading countries in fintech and blockchain innovation with strong regulations. This dual-country approach ensures diverse insights into BCT adoption challenges, offering a comprehensive international view of barriers across different economic and regulatory environments. To analyse causal relationship among the validated barriers, the 15 barriers were further analysed based on "pythagorean fuzzy decision-making trial and evaluation laboratory method" (PF-DEMATEL) [75].

<<Insert Table IV. Here>>

One of the main advantages of DEMATEL is its ability to identify the causal relationships between different criteria in a decision-making problem [76]. This is important because it allows decision-makers to better understand underlying dynamics of the problem and make more informed decisions. By identifying the causal relationships between criteria, DEMATEL

also allows decision-makers to identify the criteria that have the greatest impact on the final decision and focus their efforts on these criteria. Moreover, DEMATEL uses the eigenvector method to calculate the relative importance of each criterion [77], which is a more accurate and reliable method for determining the relative importance of different factors in a decision-making problem.

IV. ANALYSIS and RESULTS

A. Pythagorean Fuzzy Set Theory

Fuzzy sets are introduced to tackle uncertainty and biases in decision-making. In fuzzy set, membership function is characterized by a membership value ranging from 0 to 1 [78]. Many recent developments have happened in fuzzy sets wherein researchers [79] proposed Intuitionistic fuzzy sets (IFS), which include both memberships as well as non-membership functions with a sum less than or equal to one. So, IFS has the advantage of more preciseness compared with the fuzzy set. However, in the real situation, sum of the membership function and non-membership function may be higher than one as well, and IFS fails to deal with such cases. As a solution, Yager [80] proposed a new fuzzy set called the Pythagorean fuzzy set (PFS), which can handle the sum of membership functions greater than 1, but their squared sum should be less than 1. IFS includes data points lying under the line $X + Y \leq 1$, whereas PFS includes all data points lying in the area $X^2 + Y^2 \leq 1$. Hence, the range of PFS is higher than IFS. Therefore, this study adopts PFS for data analysis, and the linguistic terms along with the PFS number are presented in Table V.

<<Insert Table V. Here>>

B. Pythagorean DEMATEL

Decision-making is a usual process where experts use their experience and knowledge to make decisions. Multi-criteria Decision-making (MCDM) approaches [81] are widely used in a variety of decision-making problems such as prioritization of factors and making causal

relationships [74]. Among available MCDM methods, one most widely used method is DEMATEL, which is an approach to analyse roadblocks, challenges, and drivers, and making a causal model. Studies comparing DEMATEL with other MCDM techniques, such as CRITIC-TOPSIS and VIKOR, have found DEMATEL more effective in structuring cause-and-effect relationships, particularly in multi-dimensional problems [82]. Additionally, research in environmental decision-making and risk assessment highlights DEMATEL's advantage over AHP and ANP in integrating expert opinions under uncertainty [83]. Therefore, DEMATEL is an effective method as it categorizes factors in the cause-and-effect group and provides a relationship between the cause-group and effect-group factors [74]. Moreover, it makes a digraph that provides structural model of the factors, and it is possible to identify the most driving and most dependent factors. The traditional DEMATEL method is not very suitable for real-time decision-making since it is sometimes impossible to handle vagueness and uncertainty in decision-making approaches. Instead, PFS can be integrated with the normal DEMATEL to handle vagueness and uncertainty [75] So, this study uses PF-DEMATEL to analyse barriers to BCT adoption in international entrepreneurships.

The step-by-step procedure of PF-DEMATEL can be found in the Supplementary File of this paper. The final step of the PF-DEMATEL approach aims to categorise the barriers into the cause-and-effect group with the help of the total relation matrix. The total relation matrix indicates the driving nature and dependent nature of the barriers to help categorising barriers in cause-and-effect groups. From the total relation matrix, row (R) and column (C) values are summed. To categorize the barriers in the cause-and-effect group, the (R-C) value is calculated. Positive value of (R-C) indicates that row values are higher than the column value, which means the barrier is more related to the cause barrier and is impacting other barriers. Likewise, negative (R-C) value indicates that column values are higher than the row value, which means the barrier is more related to the effect barrier and will come in the effect group. Hence, positive

value of (R-C) shows the cause group, whereas negative value of (R-C) shows the effect group. The interpretation of barriers in cause-and-effect group is such that cause group barriers are the major concern which has high impact on effect group barriers, which means if the cause group barriers are handled, effect group barriers will be addressed automatically. The values of 'R', 'C','R+C,' and 'R-C' are shown in Table VI.

<<Insert Table VI. Here>>

A causal diagram has been constructed to display the relationship between different barriers and their effects on the adoption of BCT in international entrepreneurship. The x-axis of the diagram represents the R+C values which indicate the total effect, while the y-axis shows the R-C values which indicate the net effect. Positive R-C values indicate that there are net cause barriers, while negative R–C values indicate net effect barriers.

<<Insert Figure 2. Here>>

Figure 2 shows the cause barrier and effect barrier for adoption of BCT in international entrepreneurship. All barriers positioned above the horizontal line are cause barriers, and those below the horizontal line are effect barriers. Seven out of these 15 barriers (B2, B3, B4, B7, B8, B9, and B14) are net effect barriers with negative R-C values. Remaining eight barriers are categorized as cause type (positive R-C). These are in-stability of BCT (B1), high cost of electricity and infrastructure (B5), resistance of conversion to a new system (B6), ineffective organizational culture (B10), lack of collaboration, coordination, and cooperation (B11), lack of legal infrastructure and regulatory support (B12), lack of availability of successful business models (B13), and high risk of business continuity in entrepreneurial ventures (B15). They are playing more critical roles to enable the adoption of BCT. Within these eight barriers, high cost of electricity and infrastructure (B5) has emerged to be an important cause group barrier with the highest (R+C) value. This suggests that out of all the cause-effect barriers B5 is the most sensitive one and is highly connected with the other barriers. Moreover, in-stability of BCT

(B1), lack of collaboration, coordination and cooperation (B11), lack of availability of successful business models (B13), and resistance of conversion to a new system (B6), also stand out because their relations score (R-C) is very high (1.202, 1.096, 0.922, and 0.856 respectively). Therefore, these barriers are relatively important from the perspective of an entrepreneurial setup, deserving special attention from policymakers, technologists, academicians.

Based on the above analysis, ranking of critical barriers to BCT adoption in international entrepreneurship is as follows: high cost of electricity and infrastructure (B5) > stringent policies of the entrepreneurial organization (B9) > lack of collaboration, coordination and cooperation (B11) > resistance of conversion to a new system (B6) > low economic incentive on implementation of BCT (B14) and so on, as illustrated in Table VI.

<<Insert Figure 3. Here>>

Figure 3 illustrates influence map of the relationship between the cause group barriers and their influence on the effect group barriers. A threshold limit of influence was defined to eliminate the fringe causal links with respect to the total relation matrix [84]. The mean and standard deviation of values of the total relationship matrix were observed as 0.0175 and 0.0891 respectively. Threshold limit was calculated by adding one standard deviation with the mean value, which came out to be 0.1066 [85]. As a result, only those important links are shown which have scores higher than 0.1066. Accordingly, three barriers with values less than the threshold value (0.1066) namely, concerns on scalability in entrepreneurial ventures (B2), concerns on security (B3), and lack of legal infrastructure and regulatory support (B12), are not represented in the influence map as they have the least amount of influence on themselves and other barriers.

As shown in Figure 3, high cost of electricity and infrastructure (B5) is the most sensitive barrier as it has more links with other barriers. Hence, cost of electricity and infrastructure

becomes a core barrier that will affect the development of other barriers to BCT adoption. Three other barriers — instability of BCT (B1), lack of collaboration, coordination, and cooperation (B11), and resistance of conversion to a new system (B6) — have the highest relational cause power (R-C). They are shown at the bottom of the influence map, indicating that they are the critical barriers that influence other barriers. More importantly, lack of collaboration, coordination, and cooperation (B11) have significant influence on a good number of other barriers, including high cost of electricity and infrastructure (B5), low economic incentive on implementation of BCT (B14), high risk of business continuity in entrepreneurial ventures (B15), concerns about interoperability (B4), stringent policies of the entrepreneurial organization (B9), lack of awareness of the latest technologies (B7), lack of availability of successful business models (B13) and resistance of conversion to a new system (B6). Therefore, effective collaboration and coordination within the entrepreneurial ecosystem is essential to ensure a synergistic decision on adopting BCT.

C. Sensitivity Analysis

To check the robustness of the result, a sensitivity analysis was conducted. In the original analysis we kept equal weights for all three groups of experts. As a part of the sensitive analysis, we changed the weights of experts (expert 1 from 0.3 to 0.6 in 5 cases, with an increment of 0.1 in each case) and see how the results are deviating from the original results (see Table VII). After changing the weights of experts group, we re-calculated the ranking of barriers in each case, and the results of sensitivity analysis is presented in Figure 4. The relatively small fluctuation in ranking of barriers is showing that the results are stable, with only slight changes in ranking for B1, B10, and B13 in only one case for each. Hence, robustness of the original finding is supported.

<<Insert Table VII and Figure 4. Here>>

V. DISCUSSION

Based on the above analysis, major barriers (cause group) to adoption of BCT in international entrepreneurship are identified (B1, B5, B6, B10, B11, B12, B13, B15). These findings complement and extend earlier work by Kouhizadeh et al. [61] and Janssen et al. [9], who identified similar categories of barriers but did not quantify their inter-dependence or relative salience. In contrast to Clohessy & Acton's organisational focus [27], our results underscore that technical energy costs (B5) now constitute the system's most influential driver, reflecting recent escalations in hardware and electricity prices. Findings of this study underscore the pivotal roles played by these barriers in shaping the landscape of BCT adoption among international entrepreneurs, echoing previous studies of Awa et al. [86]. It shows the need for policymakers and industry leaders to address these challenges directly through targeted interventions, recognizing the need for tailored regulatory support, cost-effective solutions and a collaborative ecosystem, to facilitate successful integration of BCT within entrepreneurial ventures. Echoing Awa et al. [86], this study highlights these barriers as key focal points for consideration and emphasizes the importance of developing context-specific strategies to overcome these barriers. Understanding of these cause group barriers will allow stakeholders of BCT to better design strategies to develop and promote BCT among international entrepreneurs. Potential strategies to tackle these barriers are discussed below.

High cost of electricity and infrastructure: Energy-intensive BCT increases maintenance and infrastructure costs [87] and can slow down technology adoption by entrepreneurs with smaller budgets. Since this barrier has more linkages with other barriers, it needs to be treated as a priority. Energy-efficient practises, alternative energy sources (such as wind and solar), government incentives and tax levies can lessen the effects and create a more sustainable and cost-effective business climate for adoption [88].

Lack of collaboration, coordination, and cooperation: As Tiwari et al. [89] also discussed, BCT deployment requires vast collaboration between entrepreneurs, technology providers,

regulators and other stakeholders beyond a single firm's value chain. Standardised protocols and governance frameworks are needed at the ecosystem level to enable interoperability and regulatory certainty [90]. As Chowdhury et al. [91] suggested, knowledge sharing between different entities and stakeholders in the ecosystem is needed to allow trust building and more effective collaborations to enhance BCT adoption. To overcome "lack of collaboration", initiatives like R3 Corda and Hyperledger can foster industry-wide consortia, enabling organizations to share knowledge, standardize practices, and co-develop blockchain solutions.

Resistance of conversion to a new system: In line with Gong et al. [92], change-averse entrepreneurs may be hesitant to use BCT as they are more likely to have a lack of BCT knowledge and hence more concerns over data security, system integration, interoperability, legal and regulatory uncertainties. In this sense, adequate trainings and awareness raising programmes are needed to allow entrepreneurs to better appreciate the long-term benefits of BCT [93].

Lack of availability of successful business models: Strong business models can help entrepreneurs better appreciate the benefits of BCT. However, because of the lack of successful business models beyond cryptocurrency, entrepreneurs may struggle to analyse financial sustainability and ROI [94] and duplicate successful blockchain-based business concepts [95]. They will thus struggle to convince stakeholders to integrate BCT effectively into operations and value propositions [96]. Therefore, more successful business models and use cases are needed to better showcase the benefits of BCT adoption.

Instability of BCT: As Sinha and Roy [97] also advocated, entrepreneurs typically face compatibility, interoperability and technical incompetency challenges with new technologies. BCT can be expensive to buy, install and learn. Although early adoption can provide first mover advantage, entrepreneurs must weigh the pros and cons of BCT and devise risk-management measures [98]. Thus, the organizational strategy should focus on evaluating system

compatibility, managing technical challenges, and devising risk-management measures [99]. Stability and consistency of BCT in real business scenarios are needed to ensure wider adoption.

Ineffective organizational culture: Cultural factors that affect the adoption of BCT include resistance to change [100], bureaucratical decision-making [101], risk aversion [102], technical incompetence [103], segregated departments [104], and lack of incentives [105]. In this sense, we consent to Corsi and Prencipe [106] that fostering a culture of change and innovation, promote open communication and teamwork is important. Previous studies have demonstrated how "ineffective organizational culture" can be addressed through targeted training and pilot projects [107]. We further suggest that trainings should be conducted to showcase successful implementations of BCT as well as to gain mutual understanding of pros and cons of BCT adoption, and to encourage transparency and collaboration between departments. Adequate investment in inhouse BCT experts and creation of incentives for BCT adoption can also help to overcome BCT adoption barriers.

High risk of business continuity in entrepreneurial ventures: Entrepreneurs may confront business continuity challenges when adopting BCT [91]. Network dependency [2], interoperability [108], legal and regulatory uncertainty [109], transition and migration issues [110], cost and vendor risks, can impose major risk concerns of entrepreneurs. In line with Crovini et al. [111], entrepreneurs should prioritise risk management and develop detailed planning through engaging with specialists and diversifying stakeholder networks to mitigate these risks and assure business continuity.

Lack of legal infrastructure and regulatory support: Decentralisation of BCT makes compliance to traditional regulations more difficult. Currently, technology may outstrip regulators, delaying licences and permissions. Jurisdictional disparities and lack of harmonisation make cross-border transactions and global growth of BCT difficult [112]. Therefore, entrepreneurs need legal and regulatory help to utilise BCT. As Moin et al.

advocated [113], these include clear blockchain-specific legal frameworks and policy guidelines in terms of IP protection and cyber security, to allow easy compliance and easy access to support. Entrepreneurs should actively engage with the authorities to seek legal counsel and stay updated about regulation development [114]. In the meanwhile, regulators should also involve entrepreneurs into the discussion of regulation designs and policy making.

This study's central findings on barriers to BCT adoption in the context of international entrepreneurship beckon a more comprehensive exploration of their implications across multiple domains. Based on the above discussion, a strategic framework for successful adoption of BCT in international entrepreneurship is shown in Figure 5. This framework shows the main barriers to BCT adoption, and also potential strategies to reduce these barriers. This framework also offers a lens to scrutinize the dynamics of technology adoption [115], shedding light on how entrepreneurial entities navigate the complexities of embracing BCT.

<< Insert Figure 5. Here>>

Taken together, these findings contribute to theory by clarifying how technological, organisational and environmental barriers interact in an international entrepreneurial setting. Managerially, they suggest that chief priorities should be (i) procurement strategies for renewable or low-cost energy, (ii) consortium-building to share infrastructure expense, and (iii) early engagement with regulators to reduce legal uncertainty. Practically, the strategic framework in Figure 5 operationalises these priorities into a staged implementation roadmap, guiding entrepreneurs from pilot trials through full-scale deployment while preserving business continuity.

VI. CONCLUSION and IMPLICATIONS

BCT's intrinsic value transcends mere technological prowess. Its potential lies in the empowerment of international entrepreneurship through heightened security, reduced transactional costs and streamlined operational processes [116]. Adoption of BCT by

international entrepreneurs could bring numerous benefits such as seamless transactions, lower transaction costs, and transparency in business processes. However, the journey towards unlocking these benefits is coupled with multifaceted barriers unique to the entrepreneurial landscape, necessitating a deeper exploration into the confluence of BCT and international entrepreneurship.

To encourage more effective adoption of BCT by international entrepreneurs, it is crucial to identify and understand barriers to its adoption. This study draws on multiple theoretical perspectives to present the identification and evaluation of 15 barriers to BCT adoption in international entrepreneurships. Though 15 barriers were validated through the survey, only 8 were categorized as cause group barriers, which need to be treated as priorities. This study offers a strategic framework for more successful BCT adoption by international entrepreneurs.

A. Theoretical Implications

The present study advances the understanding of BCT adoption within the domain of international entrepreneurship by integrating multiple theoretical perspectives, including the TOE framework, the DOI theory, and the Institutional Theory. By systematically identifying and categorizing key barriers to BCT adoption, this research deepens the comprehension of the intricate dynamics influencing BCT implementation in international entrepreneurships. This contribution is crucial as it not only extends prior research efforts but also establishes a robust foundation for future inquiries into overcoming these barriers and fostering seamless BCT integration.

A key theoretical contribution of this study lies in its quantitative exploration of the interrelationships among these key barriers, offering a novel framework that prioritizes their relative importance. Unlike previous research that primarily employed qualitative or conceptual analyses [117], [118], this study leverages empirical methodologies to assess how technological, organizational, and environmental factors shape BCT adoption in international

entrepreneurships. This study, therefore, aligns with and extends the TOE framework by systematically evaluating the extent to which BCT's relative advantage, complexity, and compatibility influence adoption decisions [119]. Additionally, by considering regulatory, normative, and mimetic pressures [120], this research enriches the use of Institutional Theory in technology adoption studies, providing insights into how compliance requirements, industry norms, and competitive imitation influence BCT adoption among international entrepreneurs.

Furthermore, the study transcends the conventional confines of BCT applications solely within the cryptocurrency market and explores its adoption across diverse sectors, including supply chain management, international trade, and financial services. By doing so, it broadens the applicability of DOI theory [25], illustrating how innovation diffusion factors enhance the adoption of BCT solutions beyond financial transactions.

By integrating these theoretical perspectives, this research provides a comprehensive, multi-dimensional understanding of how and why international entrepreneurs adopt BCT. This holistic approach ensures that the study not only identifies barriers but also highlights pathways for facilitating blockchain diffusion in international markets, setting a foundation for future empirical research on BCT adoption in a global context.

B. Managerial and Practical Implications

The identified barriers span a comprehensive spectrum encompassing technological aspects, resource considerations, policy and regulatory dimensions, and organizational cultural factors. This nuanced taxonomy not only enriches the theoretical underpinning of BCT adoption, but also presents a practical guide for stakeholders, offering insights into tailored interventions and strategies to foster a more conducive environment for BCT adoption.

The findings provide a blueprint for strategic interventions, especially for entrepreneurial firms, who have already implemented or are thinking of implementing BCT, to address the identified barriers and develop multi-faceted strategies that encompass not only technological

considerations but also economic, social and organizational factors. By spotlighting the hurdles faced by smaller entities in embracing BCT, entrepreneurs can develop tailored solutions that address resource limitations, financial constraints, and risk aversion prevalent among these firms. Practitioners can use the strategic framework developed in this study to shorten the route of adoption in various entrepreneurial ventures.

This study also provides specific directions for policymakers, regulators and technologists, to create a suitable environment by understanding the lacunae in the blockchain ecosystem. Our study underscores the imperative for policymakers to institute a conducive ecosystem for BCT adoption among international entrepreneurs. The identified barriers necessitate policy interventions focused on incentivizing technological innovation, alleviating financial constraints, and streamlining regulatory frameworks to foster a climate conducive to technological assimilation for entrepreneurial ventures. Strategically, this study's revelations prompt a re-evaluation of the support provided to entrepreneurial firms. Normatively, it advocates for a paradigm shift in policy frameworks, urging policymakers to cultivate an environment that nurtures technological innovation and encourages the adoption of BCT among entrepreneurial venturing into international markets.

Managers and policy makers can leverage the strategic framework (Figure 5) to systematically identify the root causes of barriers to BCT adoption and implement targeted strategies to mitigate their impact. By offering a structured approach, this framework enables decision-makers to navigate the complexities of BCT adoption and ensure a smoother integration process. Additionally, Figure 5 presents a simplified approach for the journey of BCT adoption, making it easier for entrepreneurs to understand and apply BCT solutions effectively.

There are several limitations in the study which would deserve future research. First, validation of the barriers was based on a purposive sample to reach knowledgeable BCT experts

due to the emerging and limited cases of BCT adoption. However, this sampling approach may limit the statistical generalisability of the findings. As BCT is fast developing around the world, future study could extend the sample of international entrepreneurs to develop more generalizable models of barriers to adoption. Second, although this study included a wide range of sectors to source the expert respondents, future study could analyse the impact of BCT adoption in sector-specific scenarios. Third, the present study has only laid a foundation by identifying and categorizing the key barriers to BCT adoption. Further empirical studies with wider practitioner groups are needed to examine these barriers in detail and to theorize the barriers to BCT adoption by international entrepreneurs.

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TABLE I. Barriers to BCT adoption

No	Barriers to BCT adoption in entrepreneurship	References
1	In-stability of BCT	[41], [121]
2	Concerns on scalability in entrepreneurial ventures	[44], [45]
3	Concerns on security	[10], [122], [123]
4	Concerns on interoperability	[11], [48], [49]
5	High cost of electricity and infrastructure	[38], [50], [51]
6	The resistance of conversion to a new system	[53], [54]
7	Lack of awareness of the latest technologies	[12], [55], [56]
8	High investment on installation of BCT	[124], [125]
9	Stringent policies of the entrepreneurial organization	[60], [124]
10	Ineffective organizational culture	[62], [126], [127]
11	Lack of collaboration, coordination, and cooperation	[39], [63], [64]
12	Lack of cultural compatibility between stakeholders	[65], [128]
13	Lack of legal infrastructure and regulatory support	[67]
14	Lack of availability of successful business models	[69], [129]
15	Low economic incentive on implementation of BCT	[70], [71]
16	High risk of business continuity in entrepreneurial ventures	[72], [130]

TABLE II. Profile of survey respondents (n=110)

Description	Details	Responses	Percentage
Age Group	20-25 years	0	0%
	26-31 years	23	20.91%
	32-37 years	56	50.91%
	38-45 years	22	20%
	Above 45	9	8.18%
Gender	Male	84	76%
	Female	26	24%
	Others	0	0%
Current position	CEO/COO/CIO	4	3.57%
	Managing Director / Executive Director	8	7.14%
	SVP/VP/AVP	11	11.61%
	Manager/Consultant	23	20.54%
	Specialist/Analyst/Engineer	44	38.39%
	Supervisor/Coordinator	6	5.36%
	Academia	14	13.39%
Work experience (In years)	Less than and equal to 5	25	22.73%
	6-10	10	9.09%
	11-15	43	39.09%
	16-20	19	17.27%
	More than 20	13	11.82%
Sector	Energy sector	6	5.45%
	Food & Beverages	13	11.82%

	Manufacturing	5	4.55%
	IT & Consulting	35	31.82%
	Logistics & Supply chain	12	10.91%
	Aerospace	4	3.64%
	Hospitality & Tourism	3	2.73%
	Agribusiness	6	5.45%
	Finance & Banking	7	6.36%
	Cosmetics	5	4.55%
	Academia	14	12.73%
	Energy sector	6	5.45%

TABLE III. Descriptive statistics of barriers to BCT adoption

Barriers	**Mean**	**SD**
In-stability of BCT	3.009	0.837
Concerns on scalability in entrepreneurial ventures	3.164	0.848
Concerns on security	3.236	1.159
Concerns on interoperability	3.064	0.966
High cost of electricity and infrastructure	3.373	1.069
The resistance of conversion to a new system	3.282	0.992
Lack of awareness of the latest technologies	3.418	1.048
High investment on installation of BCT	3.409	1.073
Stringent policies of the entrepreneurial organization	3.327	1.054
Ineffective organizational culture	3.164	1.049
Lack of collaboration, coordination, and cooperation	3.064	0.887
Lack of cultural compatibility between stakeholders	*2.955*	*0.846*
Lack of legal infrastructure and regulatory support	3.218	1.107
Lack of availability of successful business models	3.00	0.924
Low economic incentive on implementation of BCT	3.009	1.049
Risk of business continuity	3.236	1.078

TABLE IV. Details of entrepreneurial experts

Group	**Expert**	**Sector**	**Work Experience**	**Education Qualification**
1	1	Information Technology	Over 10 years of advising SMEs on blockchain integration. International client experience.	Master's in computer science, Blockchain Technologies Specialization
	2	E-commerce	9 years implementing blockchain in e-commerce for SMEs. Focus on international transactions.	MBA, E-commerce specialization
	3	International Business	10 years of leveraging blockchain for optimizing international trade for SMEs.	Master's in international business
	4	Logistics and Supply Chain	12 years of implementing blockchain in supply chain for SMEs. International logistics focus.	PhD in Supply Chain Management
2	5	Environmental Sustainability	7 years implementing blockchain for SMEs to promote international environmental sustainability.	Bachelor's in environmental science, Certified Blockchain Sustainability Professional
	6	Legal and Compliance	15 years specializing in blockchain regulations for international businesses. Legal advisory.	Juris Doctor (JD) with a focus on Technology Law

	7	Cybersecurity	8 years ensuring security of blockchain implementations for SMEs. International expertise.	Bachelor's in Cybersecurity
3	8	Finance and Banking	8 years of analysing and implementing blockchain solutions for SMEs. International projects.	Bachelor's in finance, Certified Blockchain Professional
	9	Human Resources	11 years integrating blockchain in HR processes for SMEs. International talent management.	PhD in Human Resource Management
	10	Healthcare	13 years utilizing blockchain for data security in healthcare. International healthcare SME experience.	Doctor of Medicine (MD) with a focus on Healthcare Informatics

TABLE V. Pythagorean fuzzy set and linguistic terms used in the study, Source: [75]

Linguistic terms	**Pythagorean fuzzy number**
"Very low influence (VLI)"	$(.15, .85)$
"Low influence (LI)"	$(.25, .75)$
"Moderate low influence (MLI)"	$(.35, .65)$
"Medium influence (MI)"	$(.50, .45)$
"Moderate high influence (MHI)"	$(.65, .35)$
"High influence (HI)"	$(.75, .25)$
"Very high influence (VHI)"	$(.85, .15)$

TABLE VI. Categorisation of barriers into the cause-and-effect group

Barriers	**R**	**C**	**R+C**	**Rank**	**R-C**	**Cause/Effect**
High cost of electricity and Infrastructure (B5)	1.254	0.72	1.973	1	0.534	Cause
Stringent policies of the entrepreneurial organization (B9)	0.412	1.145	1.557	2	-0.733	Effect
Lack of collaboration, coordination, and cooperation (B11)	1.244	0.148	1.392	3	1.096	Cause
The resistance of conversion to a new system (B6)	1.034	0.178	1.212	4	0.856	Cause
Low economic incentive on implementation of BCT (B14)	0.535	0.644	1.18	5	-0.109	Effect
Lack of availability of successful business models (B13)	0.916	-0.006	0.91	6	0.922	Cause
In-stability of BCT (B1)	0.99	-0.211	0.779	7	1.202	Cause
Ineffective organizational culture (B10)	0.726	0.035	0.761	8	0.69	Cause
High investment on installation of BCT (B8)	-0.13	0.514	0.385	9	-0.644	Effect
Lack of awareness of the latest technologies (B7)	-0.333	0.571	0.238	10	-0.904	Effect
High risk of business continuity in entrepreneurship ventures (B15)	0.102	-0.092	0.009	11	0.194	Cause
Concerns on scalability in entrepreneurship ventures (B2)	-0.664	0.528	-0.137	12	-1.192	Effect
Lack of legal and regulatory support (B12)	-0.026	-0.43	-0.455	13	0.404	Cause
Concerns on interoperability (B4)	-0.97	0.435	-0.535	14	-1.405	Effect
Concerns on security (B3)	-1.144	-0.232	-1.376	15	-0.911	Effect

TABLE VII. Expert Group weighting for sensitivity analysis

Scenario	Case 1	Case 2	Case 3	Case 4	Case 5
Expert group 1 weight	0.33	0.3	0.4	0.5	0.6
Expert group 2 weight	0.33	0.35	0.3	0.25	0.2
Expert group 3 weight	0.33	0.35	0.3	0.25	0.2

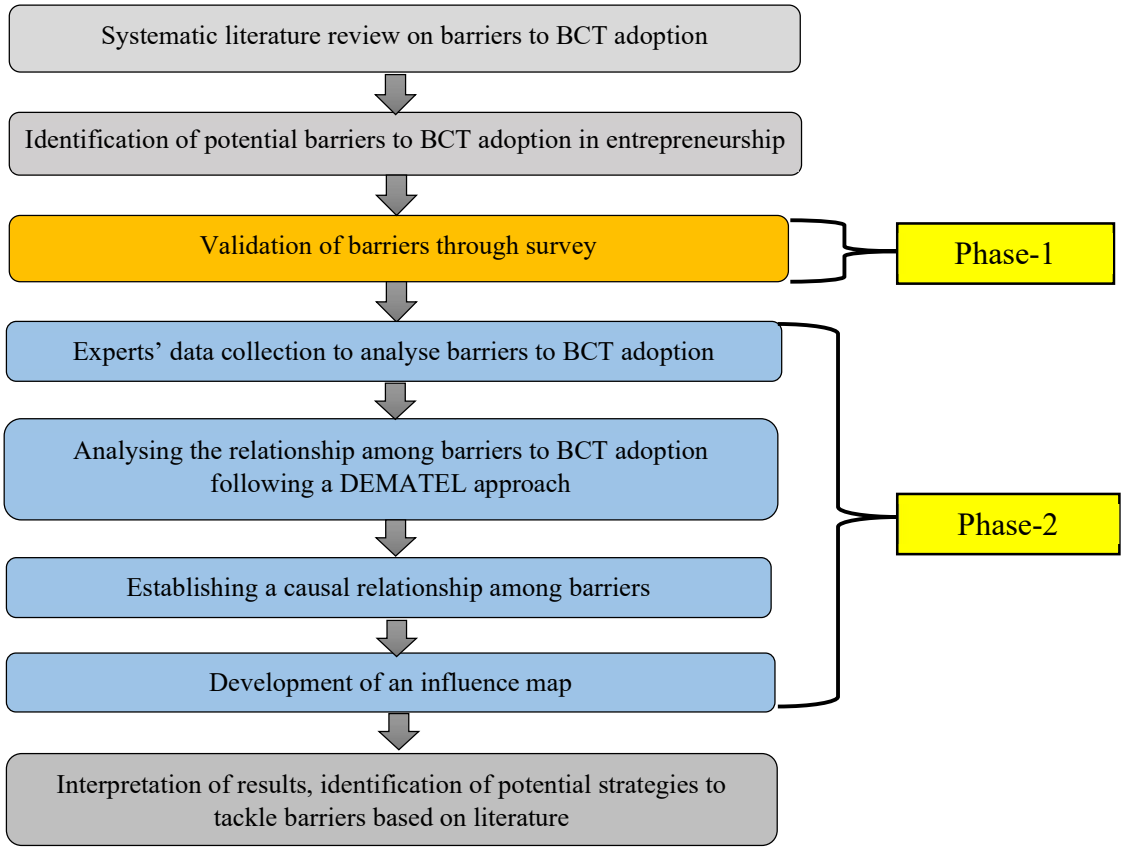

Fig. 1. Research process

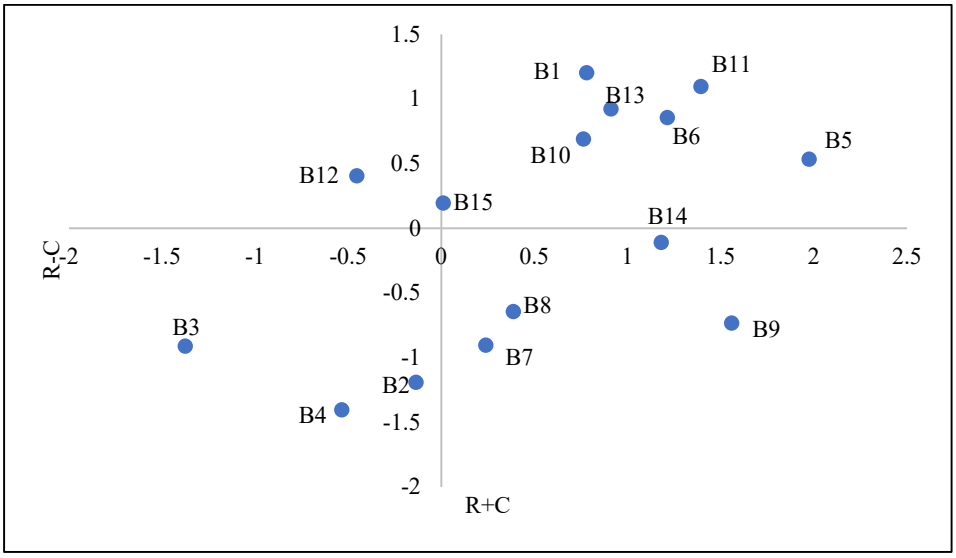

Fig. 2. Cause-and-effect diagram

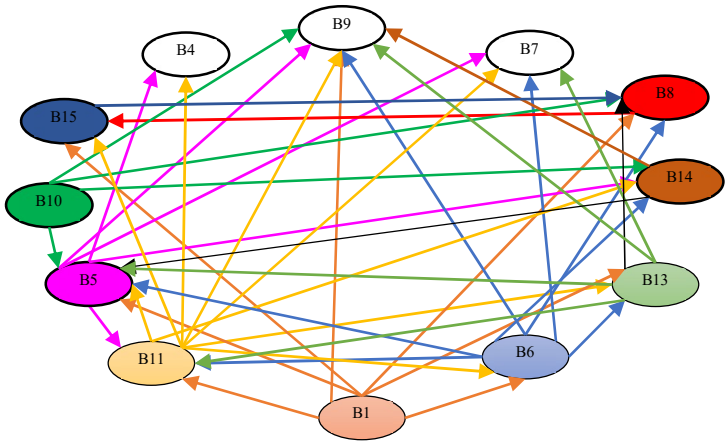

Fig. 3. Influence map of barriers to BCT adoption in international entrepreneurship

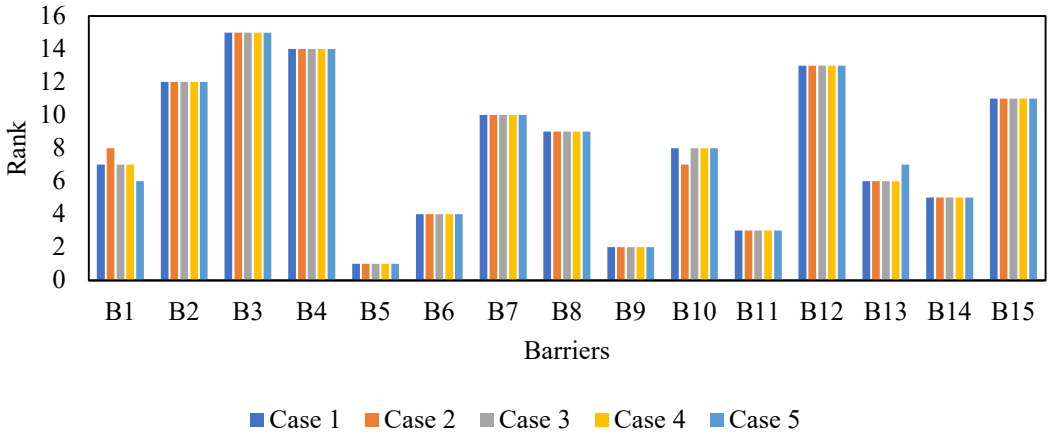

Fig. 4. Changes in barriers' ranking from the sensitivity analysis

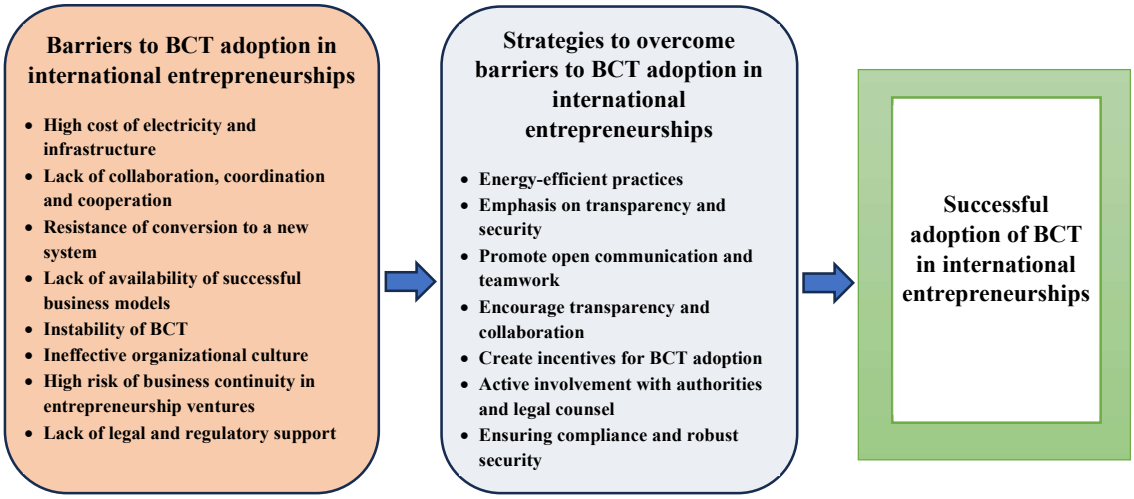

Fig. 5. Strategic framework of blockchain technology adoption in international entrepreneurship