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Sujata Seshadrinathan
S P Jain School of Global Management, sujatha.dbaon03006@spjain.org

Shalini Chandra
S P Jain School of Global Management, shalini.chandra@spjain.org

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Exploring Factors Influencing Adoption of Blockchain in Accounting Applications using Technology–Organization–Environment Framework

Sujata Seshadrinathan
(*S P Jain School of Global Management*)

Shalini Chandra
(*S P Jain School of Global Management*)

ABSTRACT

Blockchain is one of the most promising technological innovations of recent times, with the potential to change the very way information systems are used by the accounting function. It is however expected to be disruptive and yet to see high adoption rates. Identification of factors influencing the adoption is required to empower the accounting fraternity to harness the full potential of blockchains. This study is one of the first to inductively explore and develop an adoption model for blockchains as well as for accounting applications with theoretical groundings in the Technology-Organization-Environment (TOE) framework, which has been extended with a variable for trust. Triangulation of methods and data sources used in this study contributed to the depth of research and understanding. A comprehensive literature review was first conducted. Its results were further enhanced using the encoding methodology, based on which influencing factors were identified and a model for adoption was developed. A qualitative exploratory study was undertaken next on twelve organizations at the cusp of adoption for accounting applications. Eight significant factors influencing the adoption thus identified are: relative advantage, uncertainty, top management support, technology readiness, industry, regulatory environment, competitive pressure and trust.

The study contributes to revealing the relevance of blockchain to accounting while highlighting potential disruptions to enable better evaluation of the technology for adoption. The results may have limited generalizability, which may be overcome through a quantitative study in the future.

Keywords: blockchains, innovation adoption, blockchain adoption, accounting information systems, TOE framework, trust, encoding, triangulation, qualitative research

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INTRODUCTION

In a world empowered by technology, organisations that strive to remain at the forefront of their industries have emphatically recognised the benefits of adopting Information Systems (IS) innovations (Kamal, 2006; Oliveira and Martins, 2011). The latest breakthrough IS innovation expected to be as impactful as the internet itself is the blockchain technology (Lumineau *et al.*, 2020; Morabito, 2017). Blockchain is an implementation of Distributed Ledger Technology (DLT) offering the benefits of distributed yet concurrent and immutable databases that can be simultaneously shared and used by numerous participants without compromising on data integrity or security (Bonyuet, 2020). Blockchain is widely touted as the IS meant for accounting (Schmitz and Leoni, 2019; Vaidyanathan, 2017). It is expected to bring about a paradigm shift in the accounting profession by helping accountants get clarity over the over transaction history of their organisations without investing time and resources on maintaining and reconciling ledgers (Andersen, 2016; CAANZ and Deloitte, 2017; Sinha, 2020). Because of the benefits foreseen in accounting applications, blockchains are expected to bring about a positive disruption to the accounting industry (Bible *et al.*, 2017; ICAEW, 2018; Smith and Castonguay, 2020).

The accounting function, in any organisation, includes critical tasks such as recording, classifying, summarising and reporting monetary transactions and events and interpreting their results (Ghasemi *et al.*, 2011). Technological advancements have made the jobs of accountants more efficient and easier (Stefanou, 2006). Although with organisations relying on computerised systems to track and record financial transactions IT has made a considerable impact on the accounting industry (Ghasemi *et al.*, 2011), the research on the cusp of IS and accounting itself is relatively sparse (Granlund, 2007; Murthy, 2016).

Motivated by the immense potential of blockchain for the accounting industry and realising the dearth of research on this subject, we seek to explore the factors that influence the adoption of blockchain-based accounting systems.

The technology adoption decisions may depend on several inter-organisational and environmental factors in addition to the technological aspects (Chandra and Kumar, 2018).

This view was supported by the findings of diligent literature review and analysis conducted using encoding techniques. Hence, in this study, we explore the factors influencing blockchain adoption for accounting applications by theoretically grounding our research in the technology–organisation–environment (TOE)

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framework (Tornatzky and Fleischer, 1990). Our key research question is: *When examined through the lens of IS adoption research, what are the significant considerations that will influence the firm's adoption of blockchain-based accounting applications?*

The paucity of blockchain studies within the accounting context along with the relative novelty and rapid evolution of the technology makes it an exciting area for research. A triangulation approach of methods and data sources has been suggested as the most appropriate for a deeper understanding of such phenomenon (Baxter and Jack, 2008). We conducted the study in three phases. We first undertook a comprehensive review of the current state-of-the-art literature and research on the adoption of blockchain-based accounting systems. Our systematic approach of literature review here identifies the recurring themes as well as the key gaps in the existing body of knowledge, the results of which were analysed using the encoding mechanism. Next, innovation adoption studies and theories were reviewed. The findings were amalgamated with the output of encoding, to arrive at the proposed model. In the third stage, the theoretical model was confirmed with data collected via semi-structured interviews. Such a combination of findings from two or more rigorous approaches blended in triangulation such as in this study, presents more comprehensive and dependable results than approaches individually could (Thurmond, 2001).

This section has introduced the motivation, purpose and research overview of the study. In the next section, we present the relevant literature, outcome of the encoding process and discuss the theoretical framework developed in this study. The study's research design and methodology are presented next, followed by the study's main findings, propositions and conclusion. The last section highlights the contributions, limitations and future research avenues.

LITERATURE REVIEW

We started the analysis of the literature, with diligent sourcing of relevant research information from recommended scholarly databases such as ProQuest, EBSCOhost, Google Scholar, Association for Information Systems eLibrary, Science Direct, Emerald and publications of professional associations of accountants in USA, Canada, Australia, India etc. The papers and articles were selected from ISI Thomson and ABDC ranked journals. Numerous search words in varying combinations were used, including 'technology adoption', 'technology adoption models', 'TOE framework', 'cloud computing adoption', 'blockchain', 'blockchain adoption', 'trust', 'trust in IS', 'IS in accounting' and 'accounting systems research'. Articles and documents posted on the internet, ongoing research reports, white papers, etc. were considered for the study with a strict control on their

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source. Such articles were selected from sources such as IBM, Deloitte, PwC and other similar leading publishers and websites. Once substantial literature was selected, the encoding process in several iterations parallelly commenced.

Blockchains and Accounting

Blockchain is a distributed database of records, an immutable public ledger of all transactions or digital events that have been executed and shared among participating parties (Chou *et al.*, 2021; Crosby *et al.*, 2016). Instead of keeping data of any IS centralised in a traditional ledger, independent computers, referred to as nodes are used in an integrated manner to record, synchronise and share individual transactions in their respective electronic ledgers (Appelbaum and Smith, 2018; Reddick *et al.*, 2019). By implementing the triple-entry book keeping system, blockchain technology holds the potential to bridge the gap between the expected and implemented IS in accounting (Bonyuet, 2020; Schmitz and Leoni, 2019). It has the ability to transform accounting in all its stages, such as recording, reporting, analysis, and interpretation (Sinha, 2020; Kokina *et al.*, 2017). As an open, distributed ledger for recording transactions between two parties efficiently, in a verifiable and permanent way (Appelbaum and Nehmer, 2020; Iansiti and Lakhani, 2017), blockchain is essentially a technology designed for bookkeeping and accounting applications (Foxley, 2019). A shared ledger with concurrent data updates, immutability and an audit trail make it a solution that would also address the challenges of the current accounting systems IS. Hence apart from the benefits, blockchains also strike one as being a perfect antidote for the shortcomings of bookkeeping and accounting applications (Foxley, 2019).

Scholars are however being cautious since blockchains are expected to disrupt most existing practices, procedures and controls in the domain (Andersen, 2016; Woodside *et al.*, 2017).

The key features of blockchains explicitly addressing the requirements of the accounting function are: immutability (no one can modify/alter records, once verified and approved) (Pilkington, 2016), security (of personal data and information) (Kosba *et al.*, 2016), trust (Mendling *et al.*, 2017), speedy transactions (through digital content distribution enabling information availability to all stakeholders without replication) (Condos *et al.*, 2016) and mitigation of risk and frauds (through smart contracts, digital rights management controlling access permissions and user roles) (Rückeshäuser, 2017).

Blockchains came to be recognised by the reticent accounting practice very early on, as it was apparent from the beginning that the technology exemplified a good accounting IS (ALSaqa *et al.*, 2019; Deloitte, n.d.).

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Various professional bodies of accountants around the world, including the Association of Chartered Certified Accountants (ACCA), American Institute of Certified Public Accountants (AICPA), Institute of Chartered Accountants of India (ICAI) and Chartered Accountants Australia and New Zealand (CA ANZ), have published detailed information material on the innovation. They also conduct courses on the subject to create awareness among their members. Majority of big players in IT, such as the IBM Linux foundation, have teams of engineers, leading technologists and cryptography and mathematics experts, working on projects in the advanced stages of blockchain-based solutions. In 2018, with the technology spreading to nearly every industry, the financial sector accounted for over 60% of the market value of blockchains worldwide, where banking was the industry with the highest distribution of blockchain market value (Liu, 2020). The 'Big 4'audit and accounting majors (Deloitte, Ernst & Young, KPMG and PricewaterhouseCoopers) have heavily invested in blockchain adoption and research (Woodside *et al.*, 2017). In August 2016, blockchain experts from the Big 4, came together with the AICPA to establish a distributed ledger consortium and discuss an accounting industry collaboration to compose blockchain standards (Del Castillo, 2016).

The Encoding Process

Given the novelty of the blockchain technology and the lack of studies focusing on blockchain adoption in organizations despite its high potential, we used the encoding methodology to enhance the literature review and discern contextualised determinant factors (Hong *et al.*, 2013) influencing the adoption of blockchains by the accounting industry. This is particularly useful in situations like in our study where clear theoretical directions are absent as yet (Strauss and Corbin, 1990). Encoding channelizes studies where the technology is new, constantly evolving and has not gathered enough research attention yet (Morgan and Conboy, 2013). Although encoding techniques are used in the grounded theory approach, many studies in IS, choose to use only the coding methods suggested therein as part of the overall methodology, to enhance data analysis (Shiau and George, 2014). Robust research models and prototypes are developed based on literature classification through the codes thus obtained (Chang *et al.*, 2008; Yang and Tate, 2012).

The encoding process comprises of three stages described as open coding, axial coding, and selective coding. *Open coding* is the initial phase of analysis where a phenomenon is classified after careful examination of literature (Chang *et al.*, 2008). It involves identifying categories, subcategories, and properties in the data,

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which is done by thoroughly reading through the literature and conceptualising all incidents in the data (Shiau and George, 2014). Codes were generated from keywords, concepts presented in technical papers, analysis of the abstract, key findings, contributions etc. (Yang and Tate, 2012). Overall, 66 such codes were identified in the literature selected for the study. *Axial coding*, which follows open coding, involves carefully examining the literature for conditions, context, action or interactional strategies and consequences (Strauss and Corbin, 1990). It is a process wherein deduction, induction, constant questioning, and comparison are made to connect subcategories and categories identified in open coding (Chang *et al*.2008). We analysed the initial 66 codes in the axial coding stage and identified eight distinct categories within them. *Selective coding* is the final stage which aims to obtain one or more core categories, each representing one of the main phenomena being researched (Shiau and George, 2014). Selective coding is done by going over data already coded during the open and axial coding stages, and identifying groups within them (Strauss and Corbin, 1990). This is done till theoretical saturation which is the point where no further core categories emerge (Strauss and Corbin, 1990). Selective coding led to the emergence of explicit dimensions of characteristics of technology adoption, into which the previously identified eight codes were classified.

The TOE framework was identified as the theoretical guide by the outcome of the encoding process (as seen in Table I) to conceptualise a framework for adoption of blockchain-based accounting systems.

Table I. Encoding Principles of the Research Framework

Open Coding (Keywords)	**Axial Coding (Adoption Criteria)**	**Selective Coding (Categories)**
Advantage, benefits, utility, revolutionary, useful, secure, additional functionality, efficiency, reliable, easier	Relative Advantage	**Technology**
Paradigm shift, unknown, new, novelty, controls, changes needed, adaptable, usable, loss of control, knowledge gap, fear of change, similar, barriers, radical change, data inconsistency, ambiguity	Uncertainty	
Bearing cost, effort, collaborate, manage, management, managers, facilitate, communicate	Top Management Support	**Organisation**

Hybrid systems, continuum, hardware compatibility, staff reskilling, ability to change	Technology Readiness	
Industry, function, name of specific industry, domain requirements	Industry	**Environment**
Cost-efficient, reduced cost, compete, competition, an edge over the competition, enhanced image	Competitive Pressure	
Governance, regulations, legal, law, government, global standards, legal certainty, protection, interactions with the government	Regulatory Environment	
Safekeeping, disintermediation, risk, trusted, trust, validity, dependable, integrity	Trust	**Trust**

Technology Adoption Models and the TOE framework

Technology adoption models were reviewed, using the findings of the encoding process as a guideline. Within the domain of IS research, technology adoption has been extensively studied. Robust models for understanding and predicting variables influencing adoption behaviour have been presented at both individual and organisational levels (Gangwar *et al.*, 2014). The IS adoption theories consider different units of analysis ontologically described as a user or micro-level, the firm or meso-level and the market/innovation or macro-level (Alshamaila *et al.*, 2013). Since our study focuses on the adoption of blockchains for the accounting functions, we opt for a meso-level research based on the organisation level IS adoption process.

For firm-level adoption studies Diffusion of Innovation (DOI) theory (Rogers, 2003) and Technology-Organisation-Environment (TOE) framework (Tornatzky and Fleischer, 1990), are widely recommended analytical bases (Bhattacharya and Wamba, 2015; Gutierrez *et al.*, 2015; Picoto *et al.*, 2014; Ramdani *et al.*, 2013; Scupola, 2009; Stratopoulos *et al.*, 2018). Blockchain adoption research so far has been mostly based on secondary data. Their suggestions include a blockchain maturity model for its adoption (Wang *et al.*, 2016) and synthesised adoption models based on DOI (Woodside *et al.*, 2017), Davis' (1989) Technology Acceptance Model (TAM) (Kawasmi *et al.*, 2020) and an integrated DOI-TAM

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model (Lou and Li, 2017). The TOE framework has been recommended by scholars to study the adoption of IS in accounting (Stefanou, 2006) as well as to study the adoption of blockchains (Clohessy *et al.*, 2019; Dai and Vasarhelyi, 2017). The TOE framework (Tornatzky and Fleischer, 1990) was thereby found the most appropriate for the study.

The TOE framework posits a theoretical foundation for empirically investigating factors explaining the influence of the firm context on the adoption of innovations which categorising the influencing factors into three context groups: technological, organisational, and environmental (Baker, 2011; Tornatzky and Fleischer, 1990). *Technological context* represents the internal and external technologies related to the organisation. Such technologies may already be in use at the firm or may be available in the marketplace though not currently in use. Technologies here refer to equipment, processes or practice. *Organisational context* is related to the resources and the characteristics of the firm like the size of the firm, managerial structure etc. *Environmental context* refers to the arena in which a firm conducts its business. It is related to the surrounding elements such as industry, government policies, competitors, etc. Notably, the encoding process resulted in factors that mapped with the TOE model with an additional aspect of *trust*. Table II presents a classification matrix similar to previous studies (Chang et al., 2008) that was developed to map blockchain literature.

This outcome has been contextualised with the elements in the TOE framework to achieve the research objective of synthesising adoption criteria.

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Table II. Classification of Previous Studies

	Scholarly Reference	Technological Factors		Organisational Factors		Environmental Factors			Trust
		RA	UN	MS	TR	IN	RE	CP	TT
1	AlSaqa *et al* ., 2019	√	√	√	√	√	√		√
2	Andersen, 2016	√	√		√	√	√		√
3	Appelbaum and Nehmer, 2020	√	√	√	√	√	√		√
4	Appelbaum and Stein Smith, 2018	√	√		√	√			√
5	Bible *et al* ., 2017	√	√	√	√	√	√	√	√
6	CAANZ and Deloitte, 2017	√	√	√			√	√	√
7	Clohessy *et al.*, 2019	√	√	√	√	√	√	√	√
8	Crosby *et al.*, 2016	√	√		√	√	√		√
9	Dai and Vasarhelyi, 2017	√	√	√	√	√	√	√	√
10	Guo and Liang, 2016	√		√		√	√	√	√
11	Hawlitschek *et al.*, 2018	√	√		√	√	√		√
12	ICAEW, 2017	√		√			√	√	√
13	Kawasmi *et al.*, 2020	√	√	√	√	√	√	√	√
14	Kokina *et al.*, 2017	√		√		√	√	√	√
15	Lindman *et al.*, 2017	√	√		√	√	√		√
16	Lou and Li, 2017	√	√	√	√	√		√	
17	Morabito, 2017	√	√	√	√	√	√	√	√
18	Pilkington, 2016	√	√	√	√	√	√	√	√
19	Reddick *et al.*, 2019	√	√	√			√		√
20	Schmitz and Leoni, 2019	√	√		√	√	√	√	√
21	Schneider, 2021	√	√	√		√	√	√	√
22	Schuetz and Venkatesh, 2019	√	√		√	√	√		√
23	Shrier *et al.*, 2016	√			√	√	√	√	√
24	Sinha, 2020	√	√		√			√	√
25	Smith and Castonguay, 2020	√	√	√	√	√	√	√	√
26	Stratopoulos, 2018	√	√		√	√	√	√	
27	Swan, 2015	√	√		√	√			
28	Vaidyanathan, 2017	√	√	√	√	√	√	√	√
29	Wang *et al.*, 2016	√	√	√			√		√
30	Woodside, *et al.*, 2017	√	√	√	√	√		√	√
31	World Economic Forum, 2016	√		√	√	√	√	√	√

RA - Relative Advantage, UN - Uncertainty, MS - Top Management Support, TR Technology Readiness, IN - Industry, RE - Regulatory Environment, CP - Competitive Pressure, TT – Trust

The TOE Framework for Adoption of Blockchains by Accounting Firms

Blockchain-based accounting is highly recommended for adoption (ICAEW, 2018; Vaidyanathan, 2017). At the same time, it is also expected to be disruptive (Nowiński and Kozma, 2017) and perceived as challenging by all the stakeholders of the adoption process (ICAEW, 2018). The encoding process was used to identify adoption factors for the specific context of accounting applications (Johns, 2006). The decision to adopt an IS innovation from a firm's perspective would need an examination of divergent modalities that exist in terms of managerial, organizational, technological, environmental, and individual factors (Ghobakhloo *et al.*, 2011). Table III enlists the key studies for adoption of different technologies guided by the TOE framework. We mapped and synthesized the Tables I, II and III as per the encoding process to conceptualise and propose a TOE framework for adoption of blockchain-based accounting systems (see Figure 1).

Table III. Examples of TOE-Based Studies

Authors	**IS Innovation**	**Technological Context**	**Organisational Context**	**Environmental Context**
Ramdani *et al.*, 2009	Enterprise Systems	**Relative Advantage**, Compatibility, Complexity, Trialability, Observability	**Top Management Support**, **Organisational** R**eadiness**, IS experience, Size	**Industry**, Market Scope, **Competitive Pressure**, External IS support
Scupola, 2009	e-Commerce	E-Commerce **Relative Advantage**, (Barriers and Benefits), E-commerce Related Technologies	CEOs Characteristics and **Top Management Support**, Employees IS knowledge and Attitude, Resource Constraints	**Role of Government** (indirect), Technology Support Infrastructure
Ghobakhloo *et al.*, 2011	e-Commerce	Perceived **Relative Advantage**, Perceived Compatibility, Cost	Information Intensity, CEO's knowledge, CEO's Innovativeness, Business Size	**Competition**, Buyer/Supplier Pressure, Support from technology Vendors
Alshamaila *et al.*, 2013	Cloud Computing	**Relative advantage**, **Uncertainty**, Geo-restriction, Compatibility, Complexity, Trialability	Size, **Top management support**, Innovativeness, Prior IT experience	**Competitive Pressure, Industry**, Market scope, Supplier efforts and external computing support

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Borgman *et al.*, 2013	Cloud computing	**Relative Advantage**, Technology Complexity, Technology Compatibility	Firm size, **Top Management Support**, IT expertise of business users	**Competition Intensity, Regulatory Environment**
Ramdani *et al.*, 2013	Enterprise Systems	**Relative Advantage**, Compatibility, Complexity, Trialability, Observability	**Top Management Support**, **Organisational Readiness**, ICT experience, Size	Industry, Market Scope, **Competitive Pressure**, External ICT support
Oliveria *et al.*, 2014	Cloud computing	Relative Advantage-Security concerns, Cost Savings, Complexity, Compatibility, **Technology readiness**	**Top Management Support**, Firm Size	**Competitive Pressure, Regulatory Support**
Gangwar *et al.*, 2015	Cloud computing	**Relative Advantage,** Compatibility, Complexity	Organisational competency, **Top Management, Training and education**	**Competitive Pressure**, Trading partner support
Gutierrez *et al.*, 2015	Cloud computing	**Relative Advantage**, Complexity, Compatibility	**Top Management Support**, Firm Size, **Technology Readiness**	**Competitive Pressure**, Trading Partner Pressure
Chandra & Kumar, 2018	Augmented Reality in e-commerce	Technological competence, **Relative Advantage**	Decision-makers knowledge, Financial Strength, **Top Management Support**	Consumer Readiness, **competitive pressure**
Siew *et al.*, 2020	Computer-assisted audit tools and techniques	**Relative Advantage**, Compatibility, Complexity, Observability, Trialability (Control Variables)	Firm size, **Top Management Commitment**, Employees' IT Competency	Clients' AIS Complexity, **Competitive Pressure**, Perceived Level of Professional Body Support
Note: Factors that emerged from the encoding process have been highlighted				

The identified influencing factors were mapped into a proposed model for studying the adoption further in the qualitative semi-structure interviews stage of method and data triangulation implemented in the study.

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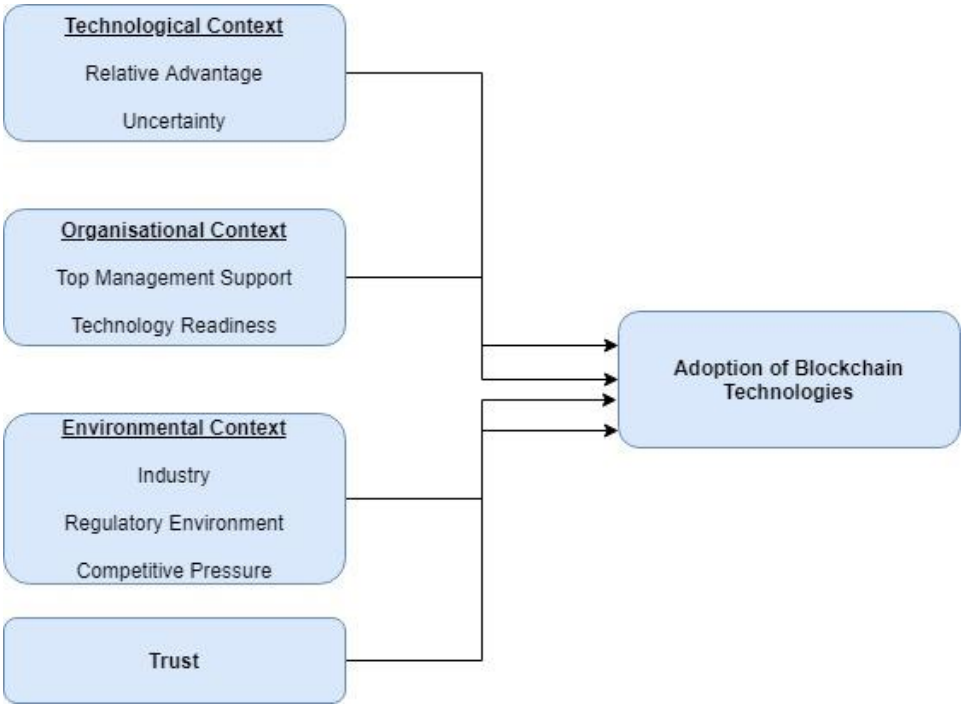

Figure 1. The TOE Framework for the Adoption of Blockchains by Accounting Firms

Technological Context

The technological context of the TOE model includes the internal and external technologies relevant to the firm, thus encapsulating both the current practices and equipment internal to the firm as well as the externally available technologies that the firm seeks to adopt (Oliveira and Martins, 2011). For effective adoption, the firm should consider the technologies on the market vis-à-vis the technology it is currently using in its operation. The two key factors studied under the technological context are *relative advantage* and *uncertainty.*

Relative advantage is the degree to which it is perceived that the new system will be providing greater benefits for firms as compared to the current systems (Rogers, 2003). Relative advantage and its impact on IS adoption has been widely investigated in IS innovation adoption studies (e.g. see (Ghobakhloo *et al.*, 2011; Low *et al.*, 2011; Ramdani *et al.*, 2013; Ramdani and Kawalek, 2007). It has been found significant in most cases when studied, proving that the probability of innovation adoption increases when businesses perceive a relative advantage it (Alshamaila *et al.*, 2013; Oliveira *et al.*, 2014).

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Blockchain-based systems will present a structure that will meet most of the expectations from an exemplary accounting system, along with offering solutions to some of the most long-standing challenges of the current IS in accounting (Appelbaum and Smith, 2018; Vaidyanathan, 2017). The benefits that accrue to the accounting function when using blockchain-based IS are indeed considerable as compared to the current systems (Schmitz and Leoni, 2019; Sinha, 2020).

Uncertainty is defined as the extent to which the results of using innovation can be guaranteed (Ostlund, 1974; Fuchs, 2005). Adoption of new technology always causes concerns as it involves risk and uncertainty (Razi and Madani, 2013). It is inherent in IT innovations because its novelty renders the technological knowledge base incomplete, as well as raising concern regarding use consequences (Jalonen and Lehtonen, 2011). Uncertainty has been found to be a significant barrier for innovation adoption (Rogers, 2003, p. 436). Apart from the general lack of scholarly attention to IS innovation adoption for accounting, the apprehension regarding blockchain within the accounting fraternity can be directly attributed to the uncertainty regarding the technology and outcome of its adoption (Shrier *et al.*, 2016; Sinha, 2020; World economic forum, 2016).

Organizational Context

The organizational context includes descriptive features about the organization itself, such as scope and managerial structure (Oliveira and Martins, 2011). Given the nature of blockchain technology and the dimensions of its adoption, the aspects of *top management support* and *technology readiness* have been highlighted by scholars as being very critical for the organizational adoption of Blockchain technology for the accounting function (Dai and Vasarhelyi, 2017; Kokina *et al.*, 2017).

Top management support is one of the most influential and often repeated factors in a firm's adoption of IS, which has been studied in several dimensions across research (Chandra and Kumar, 2018; Ray, 2016). The top management of a firm is directly in control of overcoming any internal barriers and resistance to change (Sangster *et al.*, 2009). It influences the integration of resources, activities, and the reengineering of processes in case of IS adoption (Gutierrez *et al.*, 2015). When lacking, it can be a significant inhibitor of the adoption process (Picoto *et al.*, 2014). Managing the various aspects of adoption, including the allocation of the necessary resources, standardization, and architectural integration, would be critical (Wang *et al.*, 2016).

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Adoption of blockchain-based accounting systems is expected to cause a paradigm shift, impacting the IS usage, storage, and processes (Morabito, 2017; Smith and Castonguay, 2020), which increases the possible influence of top management support.

Technology readiness introduced by Parasuraman (2000) is defined as the propensity to embrace new technology as influenced by several factors. The technological readiness of a firm encompasses the attitude and ability of technical infrastructure as well as IT human resources to incorporate the new technology, and its influence on the adoption decision (Oliveira *et al.*, 2014; Razi and Madani, 2013; Xu *et al.*, 2009; Zhu *et al.*, 2006). Organizations with high technological readiness are aware of potential as well as limitations of the current IT infrastructure and are willing to provide adequate training to build the capability required to adopt the new IS (Gutierrez *et al.*, 2015). Since blockchain-based accounting systems are expected to cause a paradigm shift (CAANZ and Deloitte, 2017), thorough domain knowledge of blockchains is critical for its adoption, thereby making technology readiness a relevant factor (Appelbaum *et al.*, 2017; Chou *et al.*, 2021).

Environmental Context

The environmental context refers to the factors and characteristics of the ecosystem in which the firm does business (Tornatzky and Fleischer, 1990). In the context of the adoption of IS, it refers to the influence of the surroundings and situations, which includes its industry and competitors, in which a firm conducts its business (Oliveira *et al.*, 2014). For the effective adoption of new technology from the environmental point of view, the firm must consider an integrated view of the industry, which includes its competitors, as well as the prevailing regulatory environment (Chandra and Kumar, 2018). The three factors found relevant under the environmental context were the *industry* in which the firm operates, *regulatory environment* and *competitive pressure.*

Industry in which the firm operates influences the adoption of IS innovations (Levenburg *et al.*, 2006; Alshamaileh *et al.*, 2012). When there is a positive outlook in the industry towards adopting an IT innovation, it significantly influences the firm to adopt it as well (Chang *et al.*, 2008; Oliveira and Martins, 2010; Ramdani and Kawalek, 2007). Scholars also opine that firms in rapidly growing industries tend to innovate more rapidly (Baker, 2011). Like most technology paradigms, blockchains have a specific industry which will benefit the most from its implementation (Shrier *et al.*, 2016; Swan, 2015).

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The nature of data recording, reporting and taxation in accounting changes depending on the industry. Some innovations have a more pronounced impact on a particular industry compared to others (Baker, 2011).
This seems incredibly right in the context of blockchains impacting the accounting industry (Lumineau *et al.*, 2020), making it relevant for the study.

Regulatory environment refers to the framework of rules and regulations, and legal requirements, placed on a firm by the government, along with policies that govern and encourage an IS to propagate in the industry (Scupola, 2009). Government regulations can either play a positive or negative role in the adoption of an innovation (Baker, 2011). The regulatory environment for a particular industry or innovation, can, for instance, support it by providing cost or price advantages and by introducing regulation that force firms adopt specific technology standards. On the contrary, governments can also pass constraining regulation like data security constraints, adversely impacting innovation adoption (Borgman *et al.*, 2013; Oliveira *et al.*, 2014). Government regulations and the environment defined by it, are of prime importance in our context (Guo and Liang, 2016; Lippert& Govindrajulu, 2006; Morabito, 2017). The adoption of blockchains may even foster compliance with regulatory requirements, thereby creating a case for a positive regulatory environment (Crosby *et al.*, 2016; Nowiński and Kozma, 2017).

Competitive pressure is the extent to which firms perceive themselves threatened by their counterparts within their industry or substitute sector (Ghobakhloo et al., 2011). Previous studies have identified competitive pressure as one of the most important predictors (Oliveira et al., 2014; Ramdani et al., 2013); and empirically proved that it is a very significant factor in IS adoption (Gutierrez et al., 2015). Conversely, the non-adoption of an IT innovation that is adopted by other firms in the industry may result in competitive disadvantage (Ismail and Ali, 2013). Competitive pressure may play a significant role in the adoption of blockchain-based accounting applications (Deloitte, n.d.; Pilkington, 2016; Schmitz and Leoni, 2019). The adoption of such cutting-edge technology will have a substantial effect on its competitiveness from the perspective of business growth along with enhancing the organizations' prestige, thus improving processes and reducing costs (Guo and Liang, 2016). Scholars opine that the primary purpose for which any firm invests in innovative technology is to differentiate its position in the market and to create a sustainable advantage over its competitors (Chandra and Kumar, 2018).

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Trust (TT)

In any distributed transaction network, there are intermediaries present to reduce transaction uncertainty, by instituting regulations that restrict the participants from engaging in opportunistic behaviour and provide guidelines for acceptable transaction behaviour (Pavlou and Gefen, 2004).

Blockchains are considered to be the apt solution for shared, distributed networks where participants need to trust the validity of the actions that are recorded. The use of peer-to-peer network technology combined with cryptography is the distinguishing feature of blockchain technology. This combination enables parties who are unknown to each other to conduct transactions on a blockchain without requiring a traditional trusted intermediary (Bible *et al.*, 2017; Pilkington, 2016; Schmitz and Leoni, 2019). In a blockchain the participants nodes do not assume trust on each other, instead the system relies on a complex consensus process whereby the nodes agree on a version of the "truth" or the validated transaction to be recorded (Woodside *et al.*, 2017). This makes the removal of 'central authority' record-keeper intermediaries, whose role is to keep the system trustworthy, possible (Wang *et al.*, 2016). In an accounting environment, the role of this trusted third-party to validate, safeguard and preserve transactions (Crosby *et al.*, 2016), is of particular relevance and hence trust emerged as a significant factor in the encoding process. The process of consensus ultimately establishes a single, but distributed, agreed history for each transaction or record and thereby a trusted chain of records: a blockchain (Appelbaum and Nehmer, 2020; Lemieux, 2016). Significantly in the context of technology adoption also, due to the lack of complete information, a leap of faith in the form of trust is essential when committing to new technology (Bahmanziari *et al.*, 2003). Previous studies based on the TOE framework have found the inclusion of trust in respect of technology adoption necessary and significant (e.g. Lippert & Govindrajulu, 2006; Sila, 2013).

METHODOLOGY

Research Design

The choice between inductive and deductive approach is a very crucial step towards answering the research question of a study (Saunders et al., 2019). This research aims to examine the influencing factors and extent of their influence on accounting firms' decision to adopt blockchains.

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Therefore, this paper ontologically considers the firm as the unit of study. Epistemologically since this research is inductive and exploratory, qualitative research was deemed most appropriate (Creswell and Poth, 2018). This enables more in-depth insights into the underlying factors and lays the foundations for an explanatory quantitative study in the future. Triangulation in research refers to the use of more than one approach to researching a phenomenon with the objective of increasing confidence in the findings (Thurmond, 2001) . Research method triangulation was utilised while first carrying out a literature review whose results were analysed with encoding, followed by qualitative semi-structured interviews. Further, data triangulation (Baxter and Jack, 2008; Woodside et al., 2017) was used to increase dependability of findings. Secondary data was analysed in literature review while qualitative semi-structured interviews were conducted to collect primary data.

The first stage of the research was executed by conducting a thorough literature review while contextualising the factors to IS adoption for accounting and formalising the results using encoding methods (Hong et al., 2013). Primary data collection for empirical study using interviews as the data collection method was deemed most appropriate for exploring the TOE factors as this gives the necessary depth and flexibility (Creswell and Poth, 2018). Previous research has successfully used semi-structured interviews within an inductive qualitative study as it facilitates exploring all the factors and records the communication of all stakeholders while studying innovation adoption process (e.g. Al-Hujran et al., 2018; Alshamaila et al., 2013; Scupola, 2009).

Data Collection and Analysis

This study uses semi-structured interviews as the primary data collection tool (Mojtahed *et al.*, 2014), to confirm the variables obtained through the encoding process and validate the theoretical framework proposed in Figure 1. It gave the participants the flexibility to discuss the key factors they recognised as critical subjectively enabling us to reduce bias. It was also done in response to the frequent criticism that research based on the TOE framework tend to pick and choose from a list of attributes that have been empirically tested on other IS innovations (Ramdani and Kawalek, 2007). The transcript of the interview was prepared partly based on previous studies (Alshamaila *et al.*, 2013). It was reviewed and tested on two initial participants. The output was used to revise the final interview script, which is presented in the Appendix. The first part of the interview included questions on the firm's background and then moved on to the level of awareness about blockchains, and the impact of TOE factors on its adoption for accounting.

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Scholars place blockchains adoption in the early adopter category (Stratopoulos *et al.*, 2018) based on Rogers' (2003) categorization. Purposive sampling was used to identify leading practitioners, thought process leaders and key staff involved in making the decision to adopt (Given, 2008). The firms in the study were accordingly selected from IT majors, Big 4, consulting majors as well as enterprises engaged in core accounting activity in order to give a comprehensive understanding of the issue. All the firms selected have a global presence and business outlook. The interviewees were from senior management positions so that the firm-level opinions could be dependably extracted (see Table IV). Interviews conducted in the interviewees' offices or over video calls lasted approximately one hour. Interviews were recorded with the permission of the participants and transcribed immediately afterward. Transcripts were sent to the interviewees for confirmation and refinement if needed. Management and analysis of the data thus collected were performed based on the procedures suggested by Miles and Huberman (1994). Accordingly, the analysis consisted of three simultaneous flows of activity: data reduction, data display and conclusion drawing and verification. The analysis data was summarised and simplified with the objective of condensing or reducing it (Robson, 2002). Data display during this process focused upon organising and assembling the information into a form from conclusions can be extracted (Miles and Huberman, 1994).

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Table IV. Firms Taking Part in the Study

No	Industry	Position of interviewee	Adoption stage	Recommend for Adoption
F1	Accounting, Audit, Advisory Major	Director – Operations	Shortly adopting, Consulting for adoption use cases	Yes (Strong)
F2	IT Consulting Major	Manager- Operations	Adopted, Projects under development	Yes (Strong)
F3	Bank	Head- Digital Innovation	Shortly adopting	Yes (Strong)
F4	Corporate Investment Bank-Major	Senior Internal Auditor – Tech	Shortly adopting	Yes (Strong)
F5	IT Consulting Major	Managing Director – Strategies	Adopted, Projects under development	Yes (Strong)
F6	IT Major	Head – Blockchain Services	Adopted, Projects under development	Yes (Strong)
F7	Business School	Director – Fintech	Do not intend to adopt	No
F8	IT Software – DLT	Founder	Created blockchain solutions, clients have already adopted	Yes (Strong)
F9	IT Major	VP & Practise Leader – Blockchain and Cybersecurity	Adopted, Projects under development	Yes (Strong)
F10	Accounting, Audit, Advisory Big 4	Director -Blockchain operations	Adopted, Consulting for adoption use cases	Yes
F11	IT Software Solutions	CMO	Adopted, Projects under development	Yes (Strong)
F12	IT Major	Senior Manager – Impact Science & Supply chain	Adopted, projects under developments	Yes

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FINDINGS AND DISCUSSION

Technological Factors

Relative advantage was a significant factor for the adoption of blockchain-based accounting systems stated by all the interviewees. The possibility of integrated systems, which present near real-time accounting positions and causing multiple reconciliations to become redundant is a major advancement for accounting IS (F1, F2, F3..,-F12). A ledger with a tamper-proof (immutable) audit trail presents an ideal accounting system where costs will be significantly lower (F2, F10).

The current system according to F5 "*is built more than 25 years back, not made for a connected world…was built specifically for silo companies which will see a paradigm shift now in integrated systems*". Features of blockchains have been accorded due credit as holding the possible solution to most of the accounting requirements as well as shortcomings of the current systems (F9, F11, F12). This was stated as the reason for most of the adoption as well as recommendation for adoption.

Uncertainty around blockchains was highlighted as a critical factor hindering its adoption (F3, F5 and F6). Accounts of any enterprise are held as very confidential information. The disruptive effect of blockchains stemming from a shared ledger that everyone in the system can view is leading to a perception of loss of control over the accounts (F1, F3, F9, F10, F11 and F12). However, F8 opined that this would no longer be a concern in a technologically empowered accounting function. F1 opined "*There is going to be some uncertainty in terms of people, process and technology, since for the first time core accounting data at the entry level itself is going to be exposed to the world*", while also expressing the belief in the existence of mitigation possibilities for every uncertainty or vulnerability.
Summarising, the technological factors of relative advantage and uncertainty are significant for blockchain adoption by accounting firms. The role of the relative advantage of blockchain-based accounting over the current IS used in accounting is well established. However, the perception of a paradigm-shifting, disruptive influence, and lack of knowledge, is causing a sense of uncertainty. Uncertainty complicates a firm's adoption decision, and the success of adoption will depend on how it resolves over time (Ulu & Smith, 2009). A considerable apprehension, mostly due to the lack of precedent and understanding, regarding the applicability of blockchains has been sensed among the accounting fraternity (Appelbaum and Smith, 2018). Our findings in the technological context are in agreement with

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previous studies with relative advantage having a positive effect (Borgman et al., 2013; Morgan and Conboy, 2013) and uncertainty having a negative effect (Alshamaila et al., 2013) on the adoption of blockchain technologies for accounting. The following two propositions emerge from the findings.

Proposition 1: Relative advantage will have a positive influence on the adoption of blockchain-based accounting applications.

Proposition 2: Uncertainty will have a negative influence on the adoption of blockchain-based accounting applications.

Organisational Factors

Top management support was suggested by the interviewees to be a critical factor in determining the adoption as well as the successful implementation of blockchain technologies for accounting applications. It is essential in the stages leading to adoption since it can determine how successful the adoption is (F7, F11). Nowadays, IS are well evaluated and checked for relevance and usability before adoption, which in a firm is mandated by the management (F1, F5). Proof-of-concept, business use case and security testing are being done as part of the evaluation because the stakes are very high (F3-F6).

Technology readiness of the firm's infrastructure as well as manpower was clearly recognised as necessary factors for successful adoption (F1,F2,F3,F4, F5,F6, F10) and both must be sufficiently prepared to adopt any innovation. Given the nature of information and processes in accounting, the relevance of this factor significantly increases (F2, F4). Only when infrastructure is ready, and people are reskilled to work with blockchains can the firm hope to shift to the new technology (F7, F11, and F12). Firms are treading with caution. They are trying out pilots and implementing in a small scale in order to ensure technology readiness before committing to the whole system since they recognise blockchains are very different and also expected to be disruptive (F6, F9).

Summarising, the organisational factors of top management support and technology readiness are significant for the firms' adoption of blockchain-based systems. The adoption effort has to be mandated by the top management. In agreement with previous studies, we found this factor to be very significant since, the attitude of employees towards adoption, availability of resources for it, and the general atmosphere in the firm during adoption are directly impacted by it (Chang *et al.*, 2008; Kamal, 2006; Siew *et al.*, 2020). The necessary upskilling of accounting and technical support staff will create a positive influence. Our finding here corroborates with studies that have recommended specific attention to be paid to

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these factors, to achieve a more successful adoption (Oliveira *et al.*, 2014). The following two propositions emerge from organisational factors.

Proposition 3: Top management support will have a positive influence on the adoption of blockchain-based accounting applications.

Proposition 4: Technology readiness will have a positive influence on the adoption of blockchain-based accounting applications.

Environmental Factors

Industry-specific adoption is critical for technology like blockchains. It is built for an ecosystem, not for one individual company, and the industry will be the single major factor influencing adoption (F4, F5, F12). Its features and application do not suit the requirements of all industries, nor is it needed in all industries (F1, F5, and F12). One of the inputs was that the industry would also influence government policies and support (F3). Blockchains have been successfully adopted in the accounting functions of stock exchanges and banks (F5).

Regulatory environment as facilitated by the government will determine whether there is an ecosystem working towards the technology being adopted or if the adoption is being discouraged (F8, F9). In the case of blockchains, a governmental undertaking is needed for making adoption happen (F4, F5, and F10). F3 remarked that while the government has to support with polices "*No one is going to question technology, use cases may be questioned. Accounting is not a use case that will get stuck in this*". Bitcoins and cryptocurrencies being looked at with suspicion, even being banned in some countries (F11) but blockchains particularly in the accounting domain are already finding government and regulatory support (F6). F12 emphasised that regulatory concerns will be the single most influencing factor affecting the adoption of blockchain technologies in accounting.

Competitive pressure is one of the main reasons for the adoption of IT innovations (F2, F6, and F11). Blockchains being touted as a paradigm shift in accounting will have heightened influence of this factor that will drive firms to be among the first to adopt it (F7, F12). Fear of losing out on the early adopter edge may even cause companies to whom the technology is not relevant to adopt (F1, F5). The efforts among the accounting fraternity, particularly the ones being made by associations like ACCA and ICAI, are indicative of the competitive influence (F3, F9). F6 stated that one effect of competitive pressure is that in case of blockchains for accounting, structures and access permissions will need to be carefully designed since "*competitors coming on to the same platform may not always be acceptable*".

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Summarising, the environmental factors of industry, regulatory environment, and competitive pressure are significant for the firms' adoption of blockchain-based systems. Blockchain technology features should be evaluated to check for suitability for the industries' requirements. Since it is not a standalone technology, it will benefit only industries were immutable shared ledgers can be gainfully employed. The regulatory framework in a country or industry, similarly, may work in favour of the adoption of blockchain-based accounting systems or against it. Significantly there is an assurance of governments and regulations being favourable to adoption and even leading efforts towards it. The competitive environment in the industry in which a frim operates, plays a critical role in influencing an organisation's decision to adopt.

All of the significant motivators for the adoption of innovative IS such as accommodating business growth, improving business processes and reducing business operating and administrative costs, in a highly competitive marketplace (Chang *et al.*, 2008; Ramdani *et al.*, 2013), are being recognised as the reasons for the adoption of blockchain-based accounting systems. Findings regarding the environmental factors lead to the following propositions.

Proposition 5: The Industry in which a firm operates will have a positive influence on the adoption of blockchain-based accounting applications.

Proposition 6: Regulatory environment will have a positive influence on the adoption of blockchain-based accounting applications.

Proposition 7: Competitive pressure will have a positive influence on the adoption of blockchain-based accounting applications.

Trust

Blockchain is an integrated system without a third party managing the ledger. The view of trust in the system is ultimately going to change, which becomes more relevant where accounting is concerned (F2, F3, F11). F9 expressed concern stating, "*lack of trust in new technologies has led accountants to maintain additional sets of records, leading to further confusions and reconciliations*". However, it is also noted that by now, the accounting industry is used to technology and users of IS trust the systems (F4, F5, F6). Business users do not care much about the exact architectural details of the technology, as long as they are reasonably assured of the data confidentiality and dependability of the outcome (F12, F10). F8 emphatically stated the process as "*when consensus is reached,*

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reconciliation is achieved, and both the parties are given the transaction receipt by the trustless third party, which is a completely neutral IT algorithm".

Prior research suggests that trust is an important criterion influencing technology adoption and must be incorporated into IS innovation adoption studies (Bahmanziari *et al.*, 2003; Chandra *et al.*, 2010). Among studies based on the TOE model, Trust in service provider has been proposed as an environmental factor (Lipper & Govindarajulu, 2006). Trust between peers plays a crucial and complex role in virtually all sharing economy interactions (Hawlitschek *et al.*, 2018). An immutable ledger ensures a single version of the truth that helps build trust in the stored information (Schuetz and Venkatesh, 2019).

We find trust and the altered outlook to it in a blockchain to be a significant factor affecting the perception and adoption of blockchain-based accounting systems, and hence position it our model as suggested by Sila (2013). This led us to the following proposition:

Proposition 8: Trust will have a positive influence on the adoption of blockchain-based accounting applications.

A complete summary of our interview findings and propositions emerging from the encoding process and interviews conducted for this study is shown in Table V.

Table V. Summary of Findings and Propositions

Factors	Support	Supported by	Propositions
Technology			
Relative Advantage	Supported	1-12 (All)	*Proposition 1: Relative advantage will have a positive influence on the adoption of blockchain-based accounting applications.*
Uncertainty	Supported	1,2,3,5,6,7,8,9, 11,12	*Proposition 2: Uncertainty will have a negative influence on the adoption of blockchain-based accounting applications.*
Organisation			
Top Management upport	Supported	1-12 (All)	*Proposition 3: Top Management Support will have a positive influence on the adoption of blockchain-based accounting applications.*
Technology Readiness	Supported	1-12 (All)	*Proposition 4: Technology Readiness will have a positive influence on the adoption of blockchain-based accounting applications.*

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Environment			
Industry	Supported	1-12 (All)	*Proposition 5: The Industry in which a firm operates will have a positive influence on the adoption of blockchain-based accounting applications.*
Regulatory Environment	Supported	1-12 (All)	*Proposition 6: Regulatory Environment will have a positive influence on the adoption of blockchain-based accounting applications.*
Competitive Pressure	Supported	1,2,3,4,5,6,7,8, 9,11,12	*Proposition 7: Competitive Pressure will have a positive influence on the adoption of blockchain-based accounting applications.*
Trust	Supported	1-12 (All)	*Proposition 8: Trust will have a positive influence on the adoption of blockchain-based accounting applications.*

CONCULDING REMARKS, IMPLICATIONS AND LIMITATIONS

Blockchain technologies have the potential to change the way the world perceives accounting IS. This study is one of the first attempts to research adoption of blockchain-based accounting application. We have used data and methods triangulation to explore and develop a model, with the theoretical underpinnings of IS adoption. The findings of the literature review were enhanced using encoding, to discern the factors that would impact the adoption the most. The TOE framework mapped closely with the critical influencing factors identified literature review. We then used qualitative semi-structured interviews to analyse, corroborate and provide deeper insights into the factors identified. Eight corresponding propositions have been presented. This study is also one of the first to investigate blockchain adoption using primary data and confirming the findings via semi-structured interviews. The results provide new, engaging perspectives into the adoption.

In addition to addressing very critical research gaps, the study presents some important implications for both research and practice. *First,* a conceptual model for the adoption of blockchain technology for accounting applications has been put forth based on qualitative data collected. *Second,* the TOE framework has been successfully applied to a study of IS adoption dynamics for accounting IS. *Third,* the encoding process recommended by the grounded theory approach has been used to efficiently synthesise the prolific literature, thereby providing a base for future

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research to do the same. The adoption of IS for accounting applications needs diligent application, along with consideration of factors that are unique to the function and play a determining role in its success (Sangster *et al.*, 2009). *Fourth*, apart from the accounting fraternity, practical insights provided will be of use to IS and blockchain technologists, developers and vendors of IS for accounting at the cusp of a disruptive wave of state-of-art technology.

The technological factors to be evaluated and mitigated, the organisational factors to be enhanced, and the environmental factors to be attended to, are elucidated providing the much-needed guidelines for strategy development towards the successful adoption of blockchains. This will improve confidence and greatly aid the management of innovation adoption. *Fifth*, the TOE model has been extended with trust, and its role has been explained. All prospective adopters, users as well as developers of blockchain technologies would do well to pay attention to its "trustless" architecture and seek to find its impact on the existing processes. The clarity and direction provided by the study may also contribute to the recognition of the capabilities of blockchains and its proliferation in the accounting industry. *Sixth*, this study sets the agenda for deeper exploration of adoption dynamics for blockchain technologies among the research scholars.

This study, however, does have some limitations. We have studied the adoption of blockchain-based accounting systems qualitatively, using semi-structured interviews. Although this brings along all the benefits of an inductive study, it does limit the generalisability of the findings. Future research can expand this to include more participants; different stakeholders (IT managers, accountants) even extend it to other industries. Studies based on other theoretical lenses like the UTUAT and DOI can also present new insights. Adoption dynamics and significant factors influencing it can also change dynamically over time as blockchains further mature (Kawasmi *et al.*, 2020). Nonetheless, this study corroborates the findings of previous TOE framework-based studies for blockchain adoption. It offers new insights for IS adoption by the accounting industry, thereby being of interest to stakeholders in all associated functions.

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APPENDIX

Semi-Structured Interview Script Outline

General & Background information

1. Can you please tell us about your firm's background?
2. What are the main challenges/benefits of the current format of accounting followed in most companies?

Level of IS Innovations Adoption & Use in the Accounting Function:

3. What IS innovations have been adopted in the accounting function?
4. How these were IS innovations selected and evaluated for adoption?
5. How relevant and useful have these IS innovations been to the accounting applications?
6. What IS innovations does accounting need? Why?
7. How effective do you think accounting applications would be in using new IS innovations?
8. What are the challenges faced while accounting functions use new IS innovations?
9. How aware are the accountants and the accounting function on the whole, of DLT and Blockchains?
10. Will BC technology work for the accounting function? (Yes/No)
11. Please justify your answer above.
12. What benefits do you see accruing out of BC adoption for accounting?

Impact of TOE Factors on Blockchain Adoption

13. According to you, what are the technical factors that will impact/influence the decision to adopt BC for accounting?
14. How will the following technical factors affect BC adoption?
15. Relative advantage, uncertainty
16. According to you, what are the organizational factors that will impact/influence the decision to adopt BC for accounting?
17. How will the following organizational factor
18. Top management support, tech readiness
19. According to you, what are the environmental factors that will impact/influence the decision to adopt BC for accounting?
20. How will the following environmental factors affect BC adoption?

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21. Industry, regulatory environment, competitive pressure
22. Will trust influence this adoption? What will be its role?
23. Any other factors, advantages or concerns you would like to add to the list?
24. Would you recommend the adoption of BC technologies for accounting applications?

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