

# Can blockchain technology moderates corporate waqf perceived behaviour? In search of underpinning theories

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**Abstract:** The aim of this research is to investigate whether blockchain can be a disruptive technology to shift the traditional waqf concept from an individual-based behavioural concept to business-valued culture. The research examines existing verified behavioural technology theories in understanding the possible effect of blockchain technology as a Corporate Waqf fundraising platform on SME's perceived behaviour. The research evaluates the quality of empirical analysis from the relevant theories and highlights the research gaps to identify suitable underpinning theories. Three hybrid theories were reviewed and analysed to develop the conceptual framework, namely: 1) firm's technology adoption using Electronic Data Interchange Model (EDI) 2) corporate social responsibility using Triple Bottom Line Theory (TBL) and 3) behavioural intention using Theory of Planned Behaviour (TPB). Future recommendation is to integrate the underpinning theories in the recommended conceptual framework in predicting the effects of waqf blockchain technology on the SME's perceived behaviour. The development of this framework is applicable to other relevant SME's technology adoption behaviour patterns in forecasting the Corporate Waqf contribution to socio-economic sustainable outcomes. Implications for research and practice are discussed.

**Keywords:** Corporate Waqf; Blockchain Technology; SMEs Perceived Behaviour; Technology adoption.

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## 1. Introduction

The Islamic philanthropy known as waqf was once an economic tool to generate income and wealth for the altruism benefit of the Ummah which was successfully governed during the early era of Islam (Omar et al., 2018; Abdullah, 2018; Dursun, 2019). Due to multifocal challenges affecting the waqf ecosystem in the modern capitalism era which was discussed in a substantial body of literature (Çizakça, 2016; Abdullah, 2018; Mohamed et al., 2017), a new mechanism known as Corporate Waqf was introduced and recently researched to generate income from waqf socio-economic activities to improve the wellbeing of the community (Omar et al., 2018; Mohsin, 2019; Saad, 2019; Kasri & Hilmi, 2020).

The productive waqf known as Corporate Waqf is a workable hybrid fundraising model that combines the dynamics of both the investment returns in business operations and waqf as the enabling perpetual endowment operated using Islamic techniques (Mohsin, 2014; Hasbullah et al., 2016; Çizakça, 2016; Saad et al., 2017). Corporate Waqf is one of the new concepts in the waqf system perceived to be a promising innovative charitable method

in the waqf system. It is confined by the amount of liquid money, shares, profit, dividends by founder(s) such as companies, corporations, organisations or institutions, and the dedication of its usufruct in perpetuity to the welfare of society (Mohsin, 2014). Generally, Corporate Waqf is the industrialization of waqf in the framework of modern business and corporate activities and the benefit allocation derivatives are from the share investment dividend, membership fees and reinvestment dividend (Hasbullah et al., 2016).

Corporate Waqf is seen as a workable tool in providing the solution to the financial challenges in the development of waqf properties. Nonetheless, most of the data being studied on the innovative mechanism is from the perspective of individual perceived behaviour and the result is inaccurate to predict the organization's behaviour (Hasbullah et al., 2016; Bahara, 2017; Daud 2018). The believing of waqf as an individual act based on Hadith Muslim (1631), al-Nasa'i (3651), al-Tirmizi (1376) dan Abu Daud (2880), has not been cultivated as an institutional culture nor has it directly been observed as an economic generating tool (Daud, 2018). Nonetheless, the advancement of the economy with the extended methodological principles of Islamic jurisprudence (Uşūl al-fiqh) allows the concept of Corporate Waqf and acknowledged the acceptance of technologically innovative mechanism application, within the permissible degrees in serving the public interest (Maslaha) (Abdullah, 2018).

Presently, there is a wide interest in the study of technology adoption studies using blockchain in both practice and academia scenarios (Glaser & Bezenberger 2015). Thus far, only a small number of research emphasis on blockchain effects toward charitable activities such as Corporate Waqf (Thas Thaker et al, 2018; Ghazali & Ismail, 2019, Azganin, 2019). Further lacking is in the studies of the effect of waqf blockchain technology from the standpoint of the SME's perceived behaviours (Hassan et al., 2020; Ajibabe, 2018).

Blockchain or Distributed Ledger Technology ("DLT") is a virtual platform to store and control the history of transactions dealing among users of the platform, connected or chained with the network known as blocks (Mohamed & Lahsasna, 2020). It is believed that blockchain technology can create a digital ledger that solves various challenges of computing system features such as transparency, security, trust, traceability, decentralization, cost effective measures (Rashid, 2018). Theoretically, blockchain technology seems to be the solver to many of the obstacles faced by the current corporate waqf management in its liquidity and governing capabilities (Mohsin & Muneeza, 2019).

Blockchain technology has been studied previously on certain aspect mostly technical (Barnes and Xiao, 2019; Benítez-Martínez et al., 2020; Boateng, 2020) as well as on certain application component such as cryptocurrencies (Beik et al., 2019; Mohsin & Muneeza, 2019; Ayedh, et al., 2020) and Syariah law (Tanjung et al., 2020, Elasrag, 2019; Mohamad, 2018), management (Zulaikha & Arif Rusmita, 2019); and information system (Elasrag, 2019; Glaser, 2017). It was observed by Rashid (2018) that there was a shortage of expert system that lays out the socio-economic advantage of blockchain as well as a valid analysis of the effect of the technological behavioural ecosystems and the application scenarios impose a prevailing issue for practitioners and researchers (Mohamad, 2018). Further, Rashid (2018) and Omar et al. (2018) call for an analysis of various firm's behavioural determinants using blockchain technology, suggesting a practical science research approach on the effect of technology adoption.

The aim of this research is to investigate whether blockchain can be a disruptive technology to shift the traditional waqf concept from an individual-based behavioural concept to SMEs business-valued culture. This study attempts to bridge the gap by focusing on the level methodological analysis at the meso-level of organization, which is distinct from the previous studies that uses individual micro-level assessment. Since most of the contemporary Islamic jurists have agreed to recognize Corporate Waqf contributors at the level of institution entity rather than individual capacity, this study

has extended the scope of knowledge on the behavioural study of technology adoption from the corporate perspective. Since the principal business of SMEs are mainly focusing on the benefits or favourable returns to the company, this study attempts to investigate the predictive outcome of the technology rather than focusing on the behaviour of an individual's system user of the technology.

### 1.1 Conceptual Framework

The essence of this study is to investigate the role of waqf blockchain technology as the innovative mechanism to influence SMEs perceived behavioural factors affecting the contemporary concept of Corporate Waqf. Several theories are being analysed and consumed as the relevant underpinning theories in this research. This study proposes a hybrid model in examining the technology adoption prediction, validated in the field by integrating three underpinning theoretical frameworks: 1) firm's technology adoption using EDI Model 2) corporate social responsibility using TBL Theory and 3) behavioural intention using TPB.

Based on the underpinning theories, EDI model by Iacovou (1995) enable the development of interorganizational networks similar to the functions of blockchain technology. EDI framework as a backbone of blockchain, has been founded to explain on SMEs behaviour of 1) perceived benefits, 2) organization-technology readiness and 3) perceived to influence the company's technology adoption. Since the sustainable benefits of CSR mentioned pronouncedly using TBL theory mainly focuses on profits (corporates), people (society) and planet (environment), this research integrates the benefits as perceived corporate benefits, perceived social benefits and perceived environmental benefits.

Thus, the independent variables of SME's perceived behaviour in this study integrated from the hybrid underpinning theories consisting factors of Perceived Corporate Benefits, Perceived Social Benefits, Perceived Environmental Benefits, Perceived Organizational E-Readiness and Perceived External Pressure. The behavioural prediction of the independent variables with the blockchain technology as the moderator is analysed using intentional behaviour recommended by TPB theory by suggesting the dependent variable of SME's Corporate Waqf intention. The conceptual framework of this research is shown in figure 1.

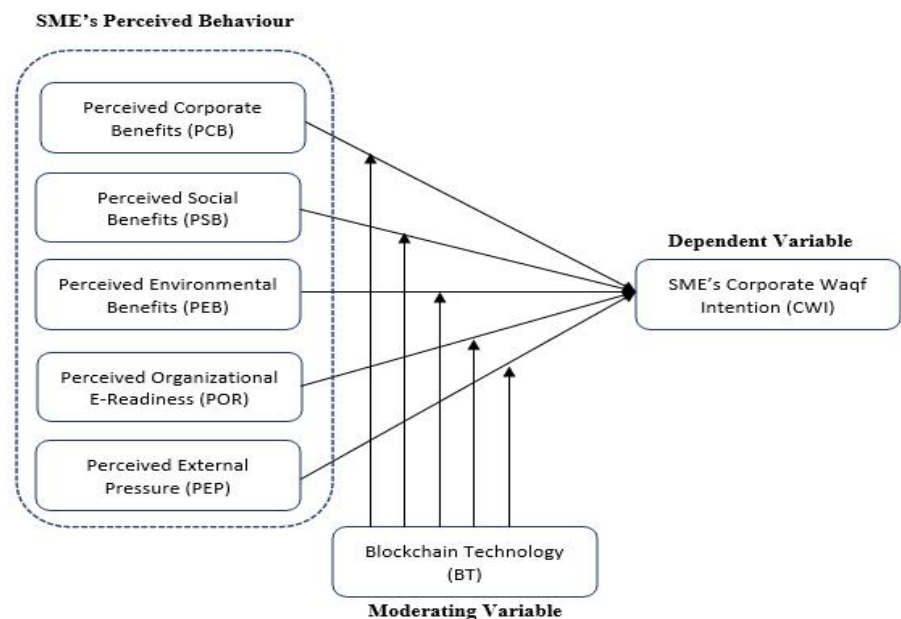


Figure 1: Conceptual Framework

## 2.Literature Review

## 2.1 Discussion of Technology Adoption Theories

According to Md Dahlan and Mohamad (2017), investigations on understanding the challenges faced by the waqf system have found only twelve (12) research on Corporate Waqf literatures from 1957 to 2017 from the total of one thousand three hundred thirty-one (1331) documented waqf literatures. The main focus of Corporate Waqf topics is on Banking, case study, issues and GLC which comprise of six (6) journal publications (Md Dahlan & Mohamad, 2017). Those literature on Corporate Waqf behaviour, though very limited, mainly investigated using TRA and TPB. The study of Corporate Waqf behaviour using technology intervention largely focuses on crowdfunding or Blockchain using TAM, TAM2 and its extended version of UTAUT to study the user's acceptance of the technology. There is a lack of research on the study of predictive technology adoption outcome on organizational behaviour (Ajibabe, 2018) towards Corporate Waqf intention in Malaysian context.

The most cited technology adoption theories at the individual level are Technology Acceptance Model (TAM) proposed by Davis (1989), and the Unified Theory of Acceptance and Use of Technology (UTAUT) proposed by Venkatesh et al. (2003). The basis of these studies is the behavioural intentions on technology perceived usefulness and perceived ease-of-use of individual users for the technology system implementation (Davis, 1989). At the organization level, the theories commonly cited include DOI (Rogers 1962), and TOE Framework (Tornatzky and Fleischer 1990), Diffusion of Innovation (DOI) (Oliveira et al., 2011) and the Institutional Theory (Yigitbasioglu, 2015). The studies focus on the technology behavioural integration with organization, environment and innovation factors.

The current widely researched technology intervention theories such as TAM, extended version of TAM2 and UTAUT focuses on individual acceptance while using the technology from a cognitive standpoint. It is debatable in the changing behaviours based on needs and emotions and the acceptance in the business environment (Ajibade, 2018; Kim & Gim, 2017). Findings observed weaknesses of these models to explain on 'end user' behaviours (Lim et al., 2016; Hai & Alam Kazmi, 2015), ignore its suitability or practical application of the model within enterprises and institutional context on the outcome or the implication of the technology adoption (Ajibade, 2018).

Various studies indicate the limitation and criticism of these theories which emphasize more on individual users of the technology with the simplicity factors of ease of use and usefulness of the technology as the basis of the intention to adopt to the technology (Thaker et al., 2018; Ghazali & Ismail, 2019). The limited focus of these theories within the level of individual user of technology does not measure the behaviour of SMEs which has probed Ajibabe (2018) to suggest further research at the institutional level in understanding the technology adoption behaviours of SMEs. In addition, the individual user of technology theories mainly emphasis on the usage of the technology, without focusing on the impact of the technology on the organization, society and environment, with which is the criteria of consideration of the Corporate Waqf donors.

The studies concerning technology adoption at the organizational level commonly use the theories of Disruptive Technology proposed by Bower & Christensen (1995), Technology-Organization-Environment Framework (TOE) proposed by Tornatzky & Fleischer (1990), and Electronic Data Interchange Adoption Model (EDI) proposed by Iacovou et al. (1995). The framework of these theories seems to be emphasizing on the organization's sociological behaviours and productive in its general enterprise application for the fulfilment of the business goals (Malik et al., 2020).

Interestingly, Iacovou et al. (1995) proposed the Electronic Data Interchange (EDI) model integrating and overseeing the effect of technology adoption towards perceived benefits, organization's e-readiness and perceived external pressure to analyse characteristics of interorganizational systems (IOSs) in determining the impact of innovation adoptions by organizations. The findings from the DTOE model using EDI framework indicated the important determinants of small businesses behaviour in the

adoption of information systems including the organization small enterprise's characteristics such as innovativeness and level of information technology knowledge, novelty characteristics, relative advantage, compatibility, complexity of information system, organizational characteristics including business size and level of employees' information system knowledge. The study shows the degree of information system adoption mainly signified by organizational characteristics and not by individual characteristics or knowledge (Omoga, 2019, Iacovou et al. 1995).

The TOE framework is widely researched in the studies of understanding technology adoption at the organization level; however, it has limited application on the perceived impact or benefits to the stakeholders that blockchain technology can offer (Barnes & Xiao, 2019). EDI model by Iacovou et al., (1995) on the other hand, is seen to be adaptable to blockchain technology as both use the IOIS operating system (Seebacher & Schuritz, 2019; Grewal, 2020), extended the study of TOE adding the perceived benefits for the adoption of the electronic data integration (EDI). The investigated factors of EDI model suited the blockchain system of enterprise in influenced the technology adoption practices of firms, particularly on the electronic data integration adoption process. The factors involved are perceived benefits due to the impact of IT, organizational readiness due to IT sophistication, external pressures of stakeholders influencing the adoption due to market positions of organization and the technological network nature (Seebacher & Schuritz, 2019; Grewal, 2020).

The behavioural technology adoptions theories are widespread from individual to corporate levels with each having specific purposes and benefits Straub (2009). Nonetheless, these theories have not focused on the intention in predicting the outcome of the technology adoption on the grounds of Corporate Social Responsibility with suitability of the Corporate Waqf principles. Relevant underpinning theories are needed to explore the significance of factors prescribed as perceived waqf behaviour on the multi segmentation of technological benefits for SME's.

### 3. Material and Methods

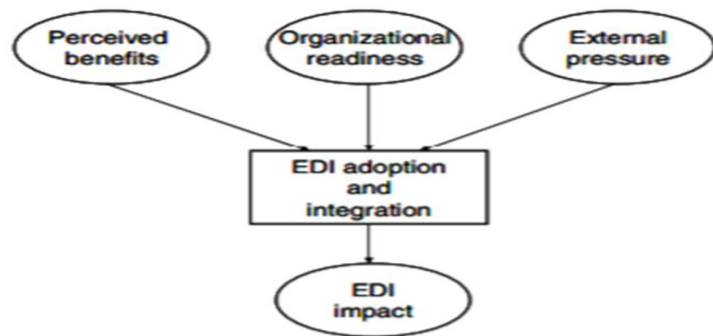
The factors of the SME's perceived behaviour and the moderating role of waqf blockchain technology are investigated using technology hybrid models. The models are adopted from several validated theoretical frameworks in three different fields relevant to the research. The relevant theories adopted in this research is in the category of: 1) firm's technology adoption using Electronic Data Interchange Model, 2) corporate social responsibility using Triple Bottom Line Theory and 3) behavioural intention using Theory of Planned Behaviour.

#### 3.1 Electronic Data Interchange Adoption Model (EDI)

The Electronic Data Interchange Adoption Model (EDI) proposed by Iacovou, Benbasat and Dexter (1995) is a telecommunication-based computer system (IOIS) applied by multiple establishments to secure the sharing of data and applications between users in diverse organizations (Wang et al., 2019). Similarly, blockchain can serve as a technological platform, connecting different parties in a business network and facilitating information exchange. Such a system shows clear resemblance to IOIS to serve the network system between organizations and users (Seebacher & Schuritz, 2019; Grewal, 2020).

Both blockchain and EDI enable the development of interorganizational networks by using the technological system for connecting various parties throughout business connections, making blockchain as an IOS platform (Seebacher & Schuritz, 2019). EDI technology adoption framework in the level of small enterprise. Iacovou et al. (1995) have developed an IT innovation model concentrating on the interorganizational system adoption, specifically on the electronic data interchange systems by small and medium scale businesses. Three main factors that give impact to this model are listed as perceived benefits (based on the limited IT impact on small organizations), organizational e-readiness (based on the low levels of IT sophistication and resource

availability of small organizations), and external pressure (based on market positions of small organizations that is poor and the network nature of the technology). Figure 2 illustrates the EDI model.



**Figure 2:** *Electronic Data Interchange Adoption Model (EDI) (Iacovou et. al., 1995)*

The intended adoption of the blockchain technology as the moderator is dependent on the perspective of the system application, either internally within the organization or externally between different parties. The blockchain application on the waqf ecosystem relates to the external perspectives where the EDI framework is adaptable to determine the impact of technology towards inter-business behaviour (Azganin, 2019).

In the internal orientation of the blockchain technology, a comparison can be observed through enterprise resource planning (ERP) which is the integrated management of main business processes, often in real time and mediated by software and blockchain technology solutions that may both represent the application transactional backbones, assisting the digitization of a company (Ross et al., 2017). For the external perspective, blockchain resembling the EDI system, serve as an interconnecting platform between companies, facilitating information exchange more prudently with the transparency and security in each transaction (Seebacher & Schuritz, 2019). Despite the resemblance with other network technologies such as EDI, blockchain seems to be more dependent upon collaboration and process integration with the whole ecosystem. Similar to EDI, the decentralization of blockchain systems entails the participants to engage in the collaboration (Seebacher & Schuritz, 2019).

Waqf Blockchain technology is no different than EDI network system, being a foundational block for sustaining the multi-enterprise waqf business networks (Elasrag, 2019). The waqf blockchain allows participants from the whole ecosystem to be involved, to create project proposals to develop and invigorate endowment properties and for others to participate in contributing funds for the projects (Rashid, 2018). Using a smart contract, blockchain is able to form a contract between parties involved and the waqf project particulars as inter-organizational networks describes by Iacovou et al (1995). In achieving the goals of the undertaking waqf projects, the acceptable proposal is given a number of endowment tokens distributed amongst the participating funders. The tokens are contracted to the waqf stakeholder for their rights and profit sharing, or agreeable transfer and exchange in the ecosystem networks using the transparent Inter-Chain Protocol of the smart contract for all stakeholders (Abojeib & Habib, 2019).

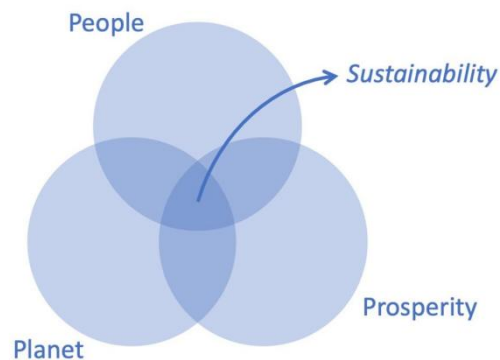
The scholars describe EDI model as one of the important competitive advantages for businesses (Hwang & Lee, 2016). However greater experience with EDI indicates that rather than the expected short-term competitive advantages from the application, it is necessary to consider the impact in system integration where EDI offers the socio-economic sustainable benefits (Veselá, & Tuzová., 2019; Al-Doori, 2019). Several researches discussed the benefits in the areas of service provider (Vrbová, 2018), strengthening of relationships between individual business partners using electronic data interchange, transparency in business dealings (Rawashdeh, & Al-namlah, 2017) and the possibility of data interchange with strong market players adopting the EDI system (Lou et al., 2015).

In this research, the adoption of waqf blockchain technology using EDI framework is dependent on three main determinants as described by Iacovou et al. (1995), namely the expected benefits (technical), organizational readiness (organizational) and contextual pressure (reactive) and is determined by the perceived charitable behaviour of the firm. The determinants of Corporate Waqf perceived behaviours on a firm's level has not been discussed in the manner of the effect of the technology but rather literatures emphasise on the system user's acceptance of the technology. This research examines the effect of waqf blockchain technology adoption with EDI adoption framework of perceived benefits, perceived organization-technology readiness and perceived pressure on Corporate Waqf intention.

### 3.2 CSR Triple Bottom Line Theory (TBL)

Triple bottom line Theory (TBL) is a framework coined by John Elkington in 1994 to propose to companies' perceived needs on sustainability in corporate social responsibility (CSR) practices by focusing on three integrated factors of prosperity, people and planet (Elkington, 1994). This concept is similar to the concept of Corporate Waqf to establish the waqf economy by preserving the waqf assets concurrently using it in business dealing with returns of investment to sustain the business entities, society welfare and protection of the environment (Omar et al., 2018; Mohsin, 2019, Elasmag, 2017). The Corporate Social Responsibility (CSR) in this type of charitable concept is a strategic area for businesses to build trust with the surrounding relevant communities and the environment (Rasche et al., 2013; Ahmad & Rusdianto; 2020; Mosca, & Civera; 2017).

Several researches suggest TBL theory in measuring the level of the company's commitment to SCR and how it brings benefits to the corporates, people and planet (Brin, 2019; Khojastehpour & Saleh, 2019). According to Książak & Fischbach (2017) when an organization focuses on all three pillars of Triple Bottom Line Theory, only then it can be regarded as sustainable as these factors are extremely closely connected. It means, caring for Profit and for People makes it equitable and fair, but neglecting environmental protection will destroy the Planet. Nonetheless, focusing only on the planet and people, and ignoring the profit, makes CSR policy acceptable but not achievable since business needs profits to survive. Again, if a company concentrates on profit and planet, discarding the people, Cane (2013) believes that it is viable and profitable, but in the long run can decrease the employees' or society's morale and the breach of social contract. The research findings from Muñoz- Pascual et al. (2019) show that social and environmental developments are two important antecedents besides company profits for product innovation performance, and they contribute to different pathways that lead to product innovation performance. Figure 3 illustrates the Triple Bottom line Model.



**Figure 3:** Triple Bottom line Model (Elkington, 1994)

According to Elkington (1994), the biggest hurdle to execute the theory is the difficulty of measuring the social and environmental bottom lines as it is subjective rather than profits being quantifiable. Elkington revisited his TBL framework in 2018 argued that

researchers on the theory has been downsized to become more of an accounting and reporting tool rather than for a bigger impact (Elkington, 2018). Accounting and reporting advanced tools have been researched with appropriateness of blockchain technology involvement as seen in its digital ledger functions (Habib & Ahmad, 2020; Billah, 2019). The fourth TBL framework may suggest technology as another factor to determine the sustainability of business added on the profit, people and planet (Kasri & Hilmi, 2020). The proposed TBL in economics believes that companies should commit to focusing as much on social and environmental concerns as they do on profits, and with the current digital world, stressing on technology is eminent. The balance of perceived corporate benefits on profits, social welfare and environment is the intended CSR for organizations for sustainable long-term prosperity may be downsized without technology (Billah, 2020).

The perceived benefits for charitable institutions such as Corporate Waqf are beyond interorganizational competitive advantage (Laallam et al., 2020; Suryanto et al., 2020). The societal and environmental implications are the most concerned benefits to be studied while adopting technology to influence the charitable acts (Mohsin & Muneeza, 2019). It is appropriate to conduct a series of further investigations on the perceived benefits on businesses implementing the EDI model and discover the corporate social value of the benefits it brings to the corporation, society and environment, as well as adopting technology models for the innovative purpose on socio-economic sustainability (Veselá and Tuzová, 2019).

### 3.3 Theory of Planned Behaviour (TPB)

The most extensively used theory to explain human intention and behaviour is the Theory of Planned Behaviour (TPB) by Ajzen & Fishbein (1980). According to TPB, the determinants of individual behavioural intentions are based on three factors: attitude towards the behaviour, subjective norm influencing the behaviour, and the individual's perceived behavioural control. In the construction of the theory, a positive attitude and a supportive subjective norm provide the motivation to engage in the behaviour but a concrete intention of the behaviour is formed only when perceived control over the behaviour is sufficiently strong (Ajzen, 1991; Ajzen & Kruglanski; 2019).

There are counter suggestions from scholars claiming that TPB and TRA is based on an individual's cognitive processing behaviours, criticizing the theory as it ignores the needs and emotions prior to engaging in certain actions or intentions (Sniehotta and Araújo-Soares, 2014). Looking at Corporate Waqf as the term defined earlier, is a religious philanthropy contribution from corporate entities rather than individuals planned behaviour. The SMEs behaviour towards Corporate Waqf is basically emphasizing more to the needs of the organizations with economic returns and social benefits while maintaining the principles of the Islamic waqf (Kasri & Hilmi, 2020).

In the areas of waqf technology, several researchers investigated the extended TPB factors, however, limited studies have produced empirical evidence on organizational behaviour tendency. The studies include investigate blockchain on the waqf education financing at the level of individual donor's behaviour (Ghazali & Ismail, 2019). Other research adopting the Theory of Reasoned Action (TRA) for cash waqf financing (Thaker et al., 2016). TAM and UTAUT are commonly used to study the behaviour of e-waqf and waqf crowdfunding (Zain et al., 2018; Thaker et al, 2018; Ibrahim et al 2018; Usman et al., 2020). All the research related to TPB, TRA, TAM and UTAUT on Corporate Waqf technology acceptance frameworks, focuses on individual indicative determinants on system user behaviour and does not designate the goal of organization behaviours

The aim of philanthropic behaviour such as Corporate Waqf is to capture the goal for the benefit of the organization value, the society welfare and the protection of the environment. Corporate Waqf has similar goals and the achievement of the goals is depending on the intention of each organization. The waqf trustees has to be obliged to the intention of the investors or donors of the Corporate Waqf to execute the fulfilment of the goals. It requires further version from organizational intention theories,



necessarily integrating with other relevant CSR theories and technology adoption theories.

#### 4. Conclusion

In search of the underpinning theories of Corporate Waqf technology adoption, a paradigm shift exists in the waqf concept from an individual-based behaviour to SMEs business-valued culture. Corresponding to the different theory approaches from individual philanthropic behaviour to a new ethos of corporate waqf economy, susceptible to the innovative technology adoption from blockchain platform. This research adds to the body of literature pertaining to Corporate Waqf as a contemporary integral part of the socio-economic system by highlighting the gaps from the previous studies. and how the new concept can be developed using technological mechanism to determined SMEs perceived behavioural factors on Corporate Waqf fundraising intention.

In previous research, the concept of Corporate Waqf is viewed in the form of individual philanthropic contributions and several researches have raised issues on Corporate Waqf being vulnerable to mismanagement and corruption. Undoubtedly through this research, the development of a conceptual framework on corporate waqf technology adoption may influence the intention of SMEs to think otherwise. The underpinning theories identified factors influencing the SME's perceived behaviour in its Perceived Corporate Benefits, Perceived Social Benefits, Perceived Environmental Benefits, Perceived Organizational E-Readiness and Perceived External Pressure. The moderated blockchain features of transparency, traceability and security using Smart Contract manage to fill the gap of trust from the potential donors which has not been fulfilled by the governance of the waqf trustees. Therefore, this research attempts to provide justice in introducing alternative mechanism framework to address the Corporate Waqf fundraising issues raised by previous waqf research from individual-based culture.

This research finding adds to the body of knowledge by an in-depth study of Corporate Waqf behaviour and its relation with the studies of behavioural technology adoptions. While many technologists develop technical solutions on waqf blockchain, the socio-economic consequences of Corporate Waqf must also be investigated empirically. The adoption of the waqf technology inventions is crucial in understanding the stakeholder's economic empowerment intentional behaviours from the perspective of the firm. It is suggested that the appropriate theories could be applied for future research in strengthening the hypotheses development and mould a research model in which the researcher believes can best explain the natural progression of the phenomenon in the study.

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#### References

- Abdullah, M. (2018). Evolution in Waqf Jurisprudence and Islamic Financial Innovation. *Journal of Islamic Monetary Economics and Finance* 4(1):161–82. doi: 10.21098/jimf.v4i1.920.
- Abojeib, M., & Habib, F. (2019). Blockchain for Islamic Social Responsibility Institutions. In *Fintech as a Disruptive Technology for Financial Institutions*. pp. 221–240. IGI Global.
- Ahmad Z. A. and Rusdianto R (2020) Impact of Transparency and Accountability on Trust and Intention to Donate Cash Waqf in Islamic Microfinance Institutions. *Shirkah: Journal of Economics and Business* 5(2): 197-227.

- Ajibade, P. (2018). Technology Acceptance Model Limitations and Criticisms: Exploring the Practical Applications and Use in Technology-related Studies, Mixed-method, and Qualitative Researches. *Library Philosophy and Practice*, 1-13.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. doi:10.1016/0749-5978(91)90020-T.
- Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. *Englewood Cliffs, NJ: Prentice Hall*.
- Ajzen, I., & Kruglanski, A. W. (2019). Reasoned action in the service of goal pursuit. *Psychological Review*, 126(5), 774–786. <https://doi.org/10.1037/rev0000155>
- Al-Doori, J. A. (2019). The impact of supply chain collaboration on performance in automotive industry: Empirical evidence. *Journal of Industrial Engineering and Management*, 12(2), 241-253.
- Ayedh, A.; Echchabi, A.; Battour, M. & Omar, M. (2020). Malaysian Muslim investors' behaviour towards the blockchain-based Bitcoin cryptocurrency market. *J. Islamic Mark*.
- Azganin, H. (2019). Redevelopment of idle Waqf property through financial technology: Case of Malaysia. *International Review of Entrepreneurial Finance*, 2(1), 42–58.
- Bahara, N. S. (2017). *Using an extended theory of planned behaviour to measure intention to contribute to cash waqf* (Master's thesis, Kuala Lumpur: International Islamic University Malaysia, 2017).
- Baqutayan, S. M. S., & Mahdzir, A. M. (2018). The Importance of Waqf in Supporting Healthcare Services. *JOSTIP, Journal of Science, Technology and Innovation Policy*, 4(1), 13–19.
- Barnes III, B. W., & Xiao, B. (2019). Organizational Adoption of Blockchain Technology: An Ecosystem Organizational Adoption of Blockchain Technology: An Ecosystem Perspective Perspective Recommended Citation Recommended Citation. *Digit 2019*, 9. Retrieved from <https://aisel.aisnet.org/digit2019>.
- Beik, I. S., Zaenal, M. H., & Rizkiningsih, P. (2019). Waqf Led Halal Cryptocurrency Model. *Halal Cryptocurrency Management*, 285-298.
- Benítez-Martínez, Luis, L., Visitación, M., Hurtado-Torres, & Esteban Romero-Frías. (2020). A Neural Blockchain for a Tokenizable E-Participation Model. *Neurocomputing* 1–15. doi: 10.1016/j.neucom.2020.03.116.
- Billah, Mohd Ma'Sum. (2019). Halal Cryptocurrency Management. In M. Ma'Sum Billah (Ed.), *Halal Cryptocurrency Management*. Cham: Springer International Publishing. Doi: 10.1007/978-3-030-10749-9.
- Boateng, E. O. Y (2020). Developing Use Cases of Blockchain Technology: Value Creation Perspectives. *Cross-Industry Use of Blockchain Technology and Opportunities for the Future*. DOI: 10.4018/978-1-7998-3632-2.ch008
- Bower, J., & Christensen, C. (1995). Disruptive technologies: Catching the wave. *Harvard Business Review*. 73(1): 43-53.
- Brin P.V. & Nehme M.N. (2019). Corporate social responsibility: analysis of theories and models. *EUREKA: Social and Humanities*. №. 5. pp. 22-30.
- Cane, N. (2013), "What is The Triple Bottom Line?". Retrieved from <https://natecate.wordpress.com/2013/04/10/what-is-the-triple-bottom-line/>
- Çizakça, M. (2016). "Merging Waqf and Sukuk: Should We or Shouldn't We?" *Global Waqf Conference* (September).
- Daud, D. (2018). Insight into the reasons for the lack of Waqf reporting. *Journal of Emerging Economies and Islamic Research*, 6(3), 48-58.
- Davis, F. D.; Bagozzi, R. P.; Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35 (8): 982–1003, doi:10.1287/mnsc.35.8.982, S2CID 14580473
- Dursun, S. A. (2019). The Question of Waqf in Turkey from its Ottoman Past to the Present. *ILIRIA International Review*, Issue 2., 181-207.
- Elasrag, H. (2019). Blockchains for Islamic finance: Obstacles & Challenges. *Munich Personal RePEc Archive*, (03), 1–39.
- Elkington, J. (2018). "25 Years Ago I Coined the Phrase "Triple Bottom Line." *Harvard Business Review* NA.

- Elkington, J., 1994. Towards the sustainable corporation: win-win-win business strategies for sustainable development. *California Management Review* 36 (2), 90–100.
- Fishbein, M. & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.
- Ghazali, H., & Che Ismail, C. (2019). A Conceptual Framework for Cash Waqf with Blockchain in Financing Education for the Islamic Religious School in Malaysia. *Al Itqan*, 3 (1), 73-88.
- Glaser, F & Bezenberger, L. (2015). "A Taxonomy of Decentralized Consensus Systems." 1–18.
- Grewal, M. K. & Sood, K. (2020). Blockchain: A disruptive technology. *Journal of Open Source Developments*. 7(1): 1–4p.
- Habib, F. & Ahmad A. U. F. (2020). Using Blockchain and Smart Contracts for Waqf Institutions. *In Financial Technology and Disruptive Innovation in ASEAN*, 225-244. IGI Global.
- Hai, L. C., & Alam Kazmi, S. H. (2015). Dynamic support of government in online shopping.
- Hasan, R., Hassan, M. K., & Aliyu, S. (2020). Fintech and Islamic Finance: Literature Review and Research Agenda. *International Journal of Islamic Economics and Finance (IJIEF)*, 3(1), 75-94.
- Hasbullah, N. A., Khairi, K. F., & Aziz, M. R. A. (2016). Intention to contribute in corporate waqf: Applying the Theory of Planned Behaviour. *UMRAN-International Journal of Islamic and Civilizational Studies*, 3(1).
- Hwang, K. M., & Lee, S. J., (2016). How Does Electronic Data Interchange (EDI) affect the Competitiveness of a Firm's Supply Chain Management?. *Journal of Marketing Thought*, 3(2), 13-18.
- Iacovou C. L., I. Benbasat, & A. S. Dexter. ((1995). Electronic Data Interchange and Small Organizations: Adoption and Impact of Technology. *MIS Quarterly*, 19, 4, 465-85.
- Ibrahim, S., Mohd Noor, A., Arsyad, R., & Ismail, S. (2018). Enhancing Strategic Corporate Philanthropy for Sustainability through Moderating Effect of Waqf Orientation: A Solution Through VBI Framework. *The 2nd Islamic Management Development Conference (IMDeC2918)* (pp. 109-115). Kedah, Malaysia: Universiti Teknologi MARA (UiTM) Kedah.
- Kasri N. S and Hilmi H. (2020). International Best Practices in Existing Corporate Waqf Models: A Retrospective – Introduction, Chapter Content, Best Practices. Challenges and Impacts of Religious Endowments on Global Economics and Finance (pp. 31). IGI
- Khojastehpour, M. & Saleh, M. A. (2019). The effect of CSR commitment on firms' level of internationalization. *Social Responsibility Journal*. Vol. 16 No. 8, pp. 1415-1432. <https://doi.org/10.1108/SRJ-02-2019-0071>
- Kim, J., & Gim, G. (2017). A Study on Factors Affecting the Intention to Accept Blockchain Technology. *Journal of Information Technology Services*, 1-20.
- Księżak, P., & Fischbach, B. (2018). Triple Bottom Line: The Pillars of CSR. *Journal of Corporate Responsibility and Leadership*, 4(3), 95. <https://doi.org/10.12775/jcrl.2017.018>
- Laallam, A., Kassim, S., Engku Ali, E. R. A., & Saiti, B. (2020). Intellectual capital in non-profit organisations: lessons learnt for waqf institutions. *ISRA International Journal of Islamic Finance*, 12(1), 27–48.
- Lim, Y. J., Osman, A., Salahuddin, S., Romle, A., & Abdullah, S. (2016). Factors Influencing Online Shopping Behavior the Mediating Role of Purchase Intention. *Procedia Economics and Finance*, 35, 401-410.
- Lou, Y. I., Wang, H. C., Chen, J. C., Vatjanasaregagul, L., & Boger II, E. P. (2015). Merging Just-in-Time (JIT) Inventory Management with Electronic Data Interchange (EDI) Impacts on the Taiwan Electronic Industry. *Open Journal of Accounting*, 4(03), 23.
- Malik, S., Chadhar, M., Chetty, M. and Vatanasakdakul, S. (2020). An Exploratory Study of the Adoption of Blockchain Technology Among Australian Organizations: A Theoretical Model. *Information Systems: 17th European, Mediterranean, and Middle Eastern*. Springer Nature Switzerland AG 2020. Pp. 205-220. [https://doi.org/10.1007/978-3-030-63396-7\\_14](https://doi.org/10.1007/978-3-030-63396-7_14).

- Md Dahlan, S., & Mohamad, N. (2017). Waqf Literatures from Malaysia : 60 Years After Independence. Global Waqf Conference 2017 (pp. 1-83). Pekan Baru, Riau: ResearchGate.
- Md Saad, N., Mhd Sarif, S., Osman, A., Hamid, Z., & Saleem, M. (2017). Managing Corporate Waqf in Malaysia: Perspectives of Selected SEDCs and SIRC. *Shariah Journal*, 25 (1), 91-116.
- Mohamed Azmi, A. S., Haniff, N. R., & Mahamood, S. M. (2017). Revitalising the development of waqf properties: a way forward. *International Journal of Real Estate Studies*, 11(3), 1–11.
- Mohamed, G., & Lahsasna, A. (2020). *Blockchain Waqf: Enabling Access to Social Islamic Finance* (No. 2919). EasyChair Preprint.
- Mohr, D. C., Schueller, S. M., Montague, E., Burns, M. N., & Rashidi, P. (2014). The Behavioral Intervention Technology Model: An Integrated Conceptual and Technological Framework for eHealth and mHealth Interventions. *JMIR Publication*, 16 (6).
- Mohsin, M. and Muneeza, A. (2019), "Integrating Waqf Crowdfunding into the Blockchain: A Modern Approach for Creating a Waqf Market", in: Oseni, U. A. and Ali, N. (Ed.), *Fintech in Islamic Finance Theory and Practice*, London: Routledge, pp. 266-280.
- Mohsin, M. I. A. (2014). *Corporate Waqf from Principle to Practice, A New Innovation for Islamic Finance*.
- Mohsin, M. I. A. (2019). Waqfintech and Sustainable Socio-Economic Development. *International Journal of Management and Applied Research*, 6(3), 130-141.
- Mosca, F. & Civera, C. (2017). The Evolution of CSR: An Integrated Approach. *Symphonya. Emerging Issues in Management (symphonya.unimib.it)*, (1), 16-35. <http://dx.doi.org/10.4468/2017.1.03mosca.civera>
- Muñoz-Pascual, L., Curado, C., & Galende, J. (2019). The triple bottom line on sustainable product innovation performance in SMEs: A mixed methods approach. *Sustainability (Switzerland)*, 11(6). <https://doi.org/10.3390/su11061689>
- Oliveira, T, & Martins, M. F. (2011). Information Technology Adoption Models at Firm Level. *The Electronic Journal Information Systems Evaluation* 14(1):110–21.
- Omar, A. J., Yusoff, W. Z. W., Mohamad, M., & Zahari, W. A. M. B. W. (2018). Current Issue in Corporate Waqf in Malaysia. *Advanced Science Letters*, 24(5), 3045–3051. <https://doi.org/10.1166/asl.2018.11315>
- Omoga, C. O. (2019). Integrated E-Marketing Adoption Model for Small Businesses. *International Journal of Advanced Research in Computer and Communication Engineering*. pp. 242-248. ISSN (Online). 2278-1021.
- Rasche, A, de Bakker F. A., and Moon. J. (2013). Complete and Partial Organizing for Corporate Social Responsibility. *Journal of Business Ethics* 115(4):651–63. doi: 10.1007/s10551-013-1824-x.
- Rawashdeh, A., & Al-namlah, L. (2017). Factors Influencing Electronic Data Interchange Adoption among Small and Medium Enterprises in Saudi Arabia. *Asian Journal of Business and Accounting*, 10(2), 253-280
- Rogers, E. M. (1962). *Diffusion of innovations (1<sup>st</sup> ed)*. New York: Free Press.
- Ross, E.S. (2017). Nobody puts blockchain in a corner: The disruptive role of blockchain technology in the financial services industry and current regulatory issues. *Catholic University Journal of Law and Technology*, 25, 2353–386.
- Saad, A. I. (2019). The Corporate Waqf in Law and Practice. *Berkeley J. of Middle Eastern & Islamic Law*, 10(1), 1–22.
- Saad, A. Y. Q. (2019). The challenges of managing, investing and financing Waqf assets in Yemen: the need for alternative model.
- Seebacher, S., & Schüritz, R. (2019). *Blockchain-Just Another IT Implementation? A Comparison of Blockchain and Interorganizational Information Systems Dienstleistungen für Elektromobilität: DELFIN View project Blockchain Business Networks View project Blockchain-Just Another It Implementatio*. (May). Retrieved from <https://www.researchgate.net/publication/333088940>.
- Sniehotta, F. F., Presseau, J., & Araújo-Soares, V. (2014). Time to retire the theory of planned behaviour. *Health Psychology Review*, 1-7.

- Straub, E. (2009). Understanding technology adoption: theory and future directions for informal learning. *Review of Educational Research*, 79, 625–649.
- Suryanto A., Rahmat, B. Z. & Marlina L. (2020), Islamic Philanthropy: Waqf Empowerment of Madina Minimarket in Tasikmalaya – Indonesia. *IKONOMIKA: Jurnal Ekonomi dan Bisnis Isla*. Vo 5, No 1 1 - 1
- Tanjung, H. Saptono, I. T. & Aziz I.N. (2020). Contemporary approach in productive awqaf development. Awqaf-led Islamic Social Finance: Innovative Solutions to Modern Applications. Routledge, 14 Sep. *Business & Economics*, 290.
- Thaker, M. A. M. T., Thaker, H. M. T., & Pitchay, A. A. (2018). Modeling crowdfunders' behavioral intention to adopt the crowdfunding-waqf model (CWM) in Malaysia: The theory of the technology acceptance model. *International Journal of Islamic and Middle Eastern Finance and Management*.
- Thas Thaker, M. A. M.; Thas Thaker, H. M. and Pitchay, A. A. (2018), "Modeling crowdfunders' behavioral intention to adopt the crowdfunding-waqf model (CWM) in Malaysia: The theory of the technology acceptance model", *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 11, No. 2, pp. 231-249, <https://doi.org/10.1108/IMEFM-06-2017-0157>
- Tornatzky, L.G., and Fleischer, M. (1990). *The Processes of Technological Innovation*. Lexington Books, Lexington, Massachusetts.
- Usman, Muhammad, and Asmak Ab Rahman. (2020). Funding Higher Education through Waqf: A Lesson from Pakistan. *International Journal of Islamic and Middle Eastern Finance and Management*.
- Venkatesh, V.; Morris, M. G.; Davis, G. B.; Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. (PDF), *MIS Quarterly*, 27 (3): 425–478, doi:10.2307/30036540, JSTOR 30036540.
- Veselá, Lucie, and Marcela Tuzová. (2019). Model of Edi Adoption in Retail. *EMI Journal* 11(3):6–20.
- Vrbová, P., Cempírek, V., Stopková, M., & Bartuška, L. (2018). Various Electronic Data Interchange (EDI) Usage Options and Possible Substitution. *NAŠE MORE: znanstveno-stručni časopis za more i pomorstvo*, 65(4 Special issue), 187-191
- Wang, Y., Jia, F., Schoenherr, T., Gong, Y., Chen, L., (2019). Cross-boarder e-commerce firms as supply chain integrators: the management of three flows. *Ind. Market. Technol.* 100, 372-385.
- Yigitbasioglu, O., Mackenzie, K. & Low, R. (2013). Cloud Computing: How does it differ from IT outsourcing and what are the implications for practice and research?. *The International Journal of Digital Accounting Research*, 13, 99-121.
- Zain, M. Z. M., Hussin, A. R. C., Yusof, A. F. (2018). Antecedences of Information System Use Continuance in the Context of e-Waqf System. *Advanced Science Letters*, Volume 24, Number 10, October 2018, pp. 7723-7726(4). American Scientific Publishers. DOI: <https://doi.org/10.1166/asl.2018.13006>
- Zulaikha, S., & Arif Rusmita, S. (2018). Blockchain for Waqf Management. *KnE Social Sciences*, 3(10). <https://doi.org/10.18502/kss.v3i10.3457>